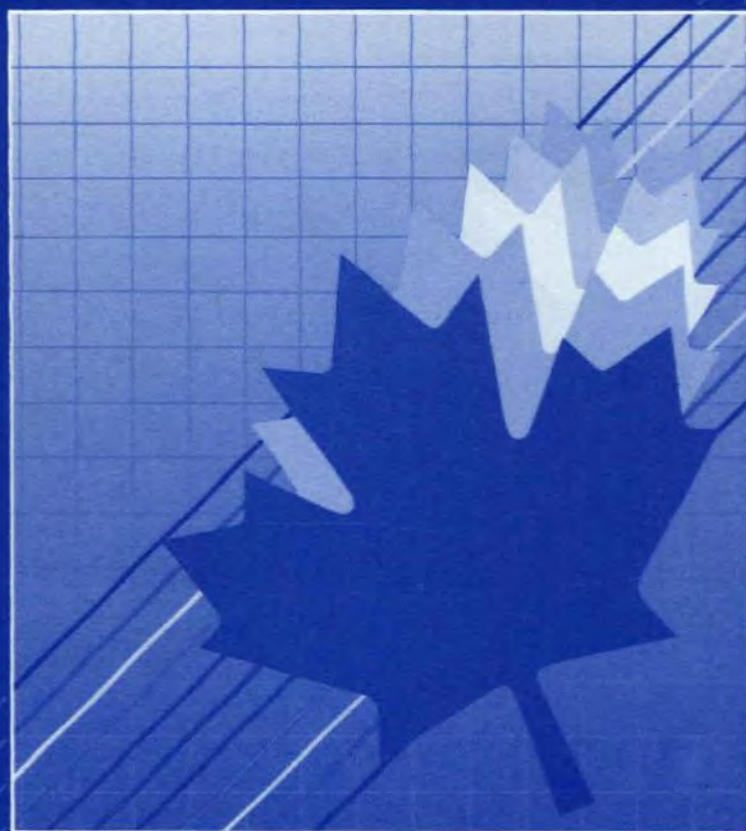


Science and Technology

SUMMARY OF MEDIA COVERAGE
OF THE NATIONAL CONFERENCE ON
TECHNOLOGY AND INNOVATION
JANUARY 13-14-15, 1988

SOMMAIRE DE LA COUVERTURE
DES MEDIAS DE LA CONFÉRENCE NATIONALE
SUR LA TECHNOLOGIE ET L'INNOVATION
LES 13, 14 ET 15 JANVIER 1988



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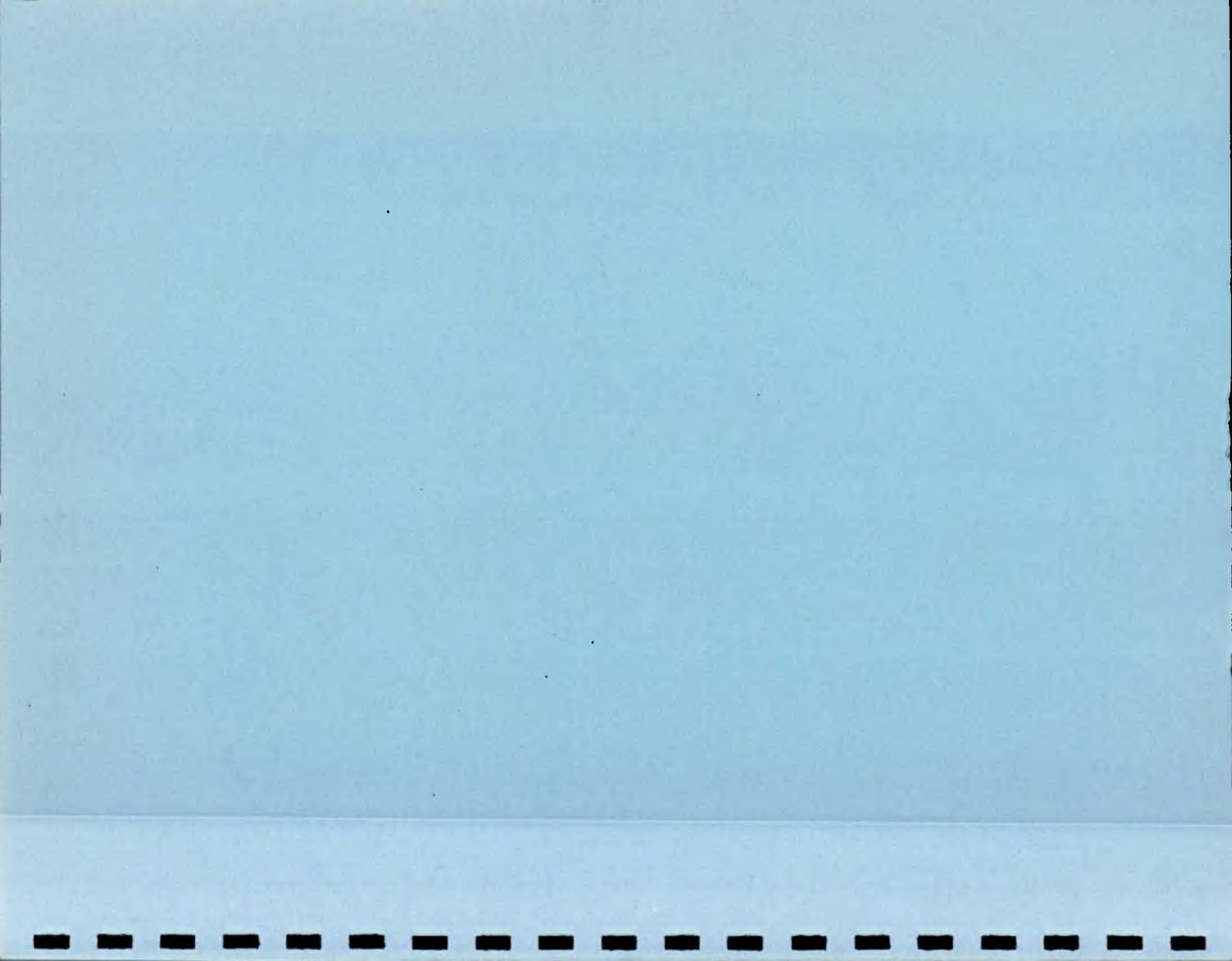
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Canada may be left out of a high-technology world

Canada's top scientists and industrial researchers have been invited by the federal government to a high-profile conference on technology and innovation next week in Toronto.

The Conservative government, which is running out of ideas on how to boost research and development spending by the private sector, is hoping to make a big splash at the conference.

Prime Minister Brian Mulroney is expected to deliver a couple of speeches on what Ottawa is planning to do with its planned super ministry — the department of industry, science and technology.

The shortage of R&D in Canada, at a time when the world is embracing new technology as never before, is a matter of some urgency.

Canada ranks last among the Group of Seven industrial nations in this regard, spending just 1.3 per cent of gross domestic product on R&D.

The business community is disappointed at the government's failure to deliver the goods, despite lavish promises by Mulroney.

While Ottawa has initiated some new programs in its \$4 billion R&D budget, spend-

Peter Hadekel



ing by industry is growing much less quickly than it was three years ago.

According to a Conference Board of Canada survey published this week, Canadian companies planned to increase research and development spending by 6.7 per cent in 1987 and 9.6 per cent this year.

That's well below the 15.2-per-cent increase in spending recorded three years ago. And the failure to keep pace is coming at a time when Canadian companies are racking up robust increases in profits.

While manufacturing and "high-technology" companies are leading the way with

spending increases in the 10- to 15-per-cent range, Canada's resource industries show declines in both spending and expansion of R&D, according to the Conference Board.

This trend is a cause for concern, because it hinders progress toward the goal of upgrading more of our primary resources at home.

Without a greater level of R&D in these industries, Canada will remain more a hewer of wood and drawer of water than an industrial power.

One reason for the R&D slowdown may be the Conservative government's crackdown on the fraudulent use of scientific research and development tax credits, which cost the Canadian taxpayer more than \$3 billion.

Since that debacle, the government has been hesitant to provide a liberal tax credit regime for scientific research.

The challenge now is to devise a well-drafted plan that provides financial incentives for research while protecting taxpayers against ripoffs.

The business community has been waiting for a new initiative, but it's starting to lose patience.

Conference Board of Canada found a

growing dissatisfaction with federal policies. Twenty per cent of respondents said government policy is a hindrance to R&D, up substantially from 7 per cent in last year's survey.

Businessmen would prefer a tax-credit system because there's not as many strings attached as there are in a loan or grant from the government, which is often tied to a specific research project.

Companies also want more government help to overcome a number of other obstacles affecting R&D, such as a shortage of financing, weak market demand for products and a shortage of qualified personnel.

They've also been complaining that in joint ventures with the government, the Crown is retaining the rights to new products and processes.

This is not to suggest that the outlook is bleak.

Foreign subsidiaries in Canada continue to benefit from research done by their parent companies abroad. And Canadian companies are buying new technology in joint ventures with foreign firms.

But with more research done at home, Canada will be better off in a highly competitive world.

\$500 million rise urged in spending on research

BY CHRISTOPHER WADDELL

The Globe and Mail

OTTAWA

Ottawa should spend an extra \$500-million over three years to double the funds for its three councils that grant money for research, says a committee appointed by Prime Minister Brian Mulroney.

The committee also says the Government should shift much of its research activities out of Government-owned labs and into universities.

Other changes recommended by the university committee of the National Advisory Board on Science and Technology are an overhaul of the current federal-provincial post-secondary education agreement, an end to the regulation of tuition fees and the creation of a national merit

scholarship program.

A copy of the committee's report to Mr. Mulroney has been obtained by The Globe and Mail. It is one of three reports to the Prime Minister from subcommittees of the national advisory board which he appointed a year ago.

Later this week in Toronto, Mr. Mulroney will speak to a national conference on science and technology convened by the federal Government.

The university committee report is critical of the Conservative Government's matching-grant program that offers Government money to universities for research based on the level of private-sector contributions obtained by the university for

Research policies found wanting

● From Page One

that research.

"In reality the matching grants policy is a clever way of constraining the growth of Government funding to granting councils... it cannot serve as a useful base for setting Government policy with respect to the financing of science and technology in universities," the report says.

The program should be reviewed and future matching grants from Ottawa should be used for joint research agreements between universities and the private sector and be tied to specific initiatives, the committee recommends.

Similarly, the committee says the value of co-operation between industry and universities in applied research activities is limited.

"Industry-university collaborations, successful though they may be, cannot be counted upon to solve the larger problem of funding of university research and development.

"Such collaborations can usefully

draw from an existing base; they cannot create it. The federal and provincial governments must maintain their roles as leaders in the funding of university R & D."

The committee, led by Pierre Lortie, president of Provigo Inc., proposes that the budgets of the Natural Sciences and Engineering Research Council, the Medical Research Council and the Social Sciences and Humanities Research Council be doubled over the next three years, at a total cost of about \$500-million.

(In 1987-88, the NSERC received \$331-million; the MRC received \$171.5-million and the SSHRC obtained \$67.9-million from the federal Government.)

After three years, Ottawa's financing for the councils should increase annually at a rate equal to 1.5 times the growth in gross national product, the committee says.

The panel also says that Ottawa should "rely significantly more on universities and less on federal laboratories for the performance of

scientific research."

Contracting-out of such work would provide more opportunities and motivation to both academic research staff and students, and Government labs would then be left to handle specific gaps in the national research system.

The proposed extra money for the three research councils would be used in a long-term plan for publicly sponsored research in universities. It would allow the councils to give more and larger grants to scientists at the forefront of research in various fields, direct more money for equipment and labs to help universities develop areas of expertise and focus research on subjects of national interest.

The committee also recommends an end to restrictions on tuition fees, tied to the availability of more public money for scholarships and loans. And it suggests a merit scholarship program based on national examinations, to encourage more students to become involved in science and technology studies.

Increased Funding For Science Expected

OTTAWA (CP) — Prime Minister Brian Mulroney will outline plans for increased funding for science and technology at a conference in Toronto this week. Industry Minister Robert de Cotret said Monday.

"There's going to be more spending for science and tech, there's no question about that," de Cotret said at a news conference.

"Certainly we're going to have to devote more resources to research and development. I think that's quite clear."

CTV news reported Monday night that Mulroney will announce federal spending of an additional \$1.3 billion on research and development. Five regional centres of excellence will be set up and scholarships established.

The government has been stung by criticism that it has failed to live up to promises to significantly increase re-

search and development spending.

It had promised the spending would be increased to 2.5 per cent of gross national product by its fourth year in office. The figure remains at 1.3 per cent of the GNP.

A committee appointed by the government recommended last month that Ottawa double funding to its three councils that grant money for research by spending an extra \$500 million over the next three years.

De Cotret said Canada will have to rely on its brain-power for economic expansion.

"If it does not, our children and their children may be living in comparative destitution in a country that hardly resembles the one we know today," he said.

He said Canada's corporations, with a few notable exceptions, are not doing their share to increase research and development.



Robert de Cotret

The three-day conference, which begins Wednesday, is being billed as a historic meeting of minds in all sectors — government, industry, labor and academe — on a science and technology policy into the next century.

Such a conference was promised in the throne speech in October 1986. Mulroney will be acting as host through the entire event.

"This conference is effectively an economic summit," de Cotret said.

De Cotret also announced that \$60 million has been earmarked for the government's microelectronics and systems development program to be administered through regional offices of the Department of Regional Industrial Expansion.

Under this program the government provides contributions of up to 50 per cent of eligible costs of high-tech projects.

La recherche scientifique Mulroney doit débloquer \$1 milliard

◆ Le premier ministre, M. Brian Mulroney, doit annoncer demain le déblocage de nouveaux fonds fédéraux, de l'ordre de \$1 milliard, en faveur des trois conseils de recherches en sciences naturelles et en génie, en sciences humaines, et en recherches médicales, de même qu'une augmentation de la participation canadienne au projet américain de station orbitale. Selon le quotidien *Le Devoir*, M. Mulroney ferait cette annonce à la conférence nationale sur la technologie et l'innovation, qui s'ouvre demain midi à Toronto.

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Ottawa débloque un montant de \$1 milliard pour la recherche

(D'après PC) - Le premier ministre Brian Mulroney s'est prêté à cajoler la communauté scientifique, comme il l'avait promis en 84, alors qu'il annonçait, demain, l'injection de fonds gouvernementaux additionnels de l'ordre de \$1 milliard dans le domaine de la recherche et du développement.

Selon le quotidien *Le Devoir*, la Conférence nationale sur la tech-

nologie et l'innovation, qui s'ouvre demain midi à Toronto, permettra en effet au chef du gouvernement et à ses principaux ministres de détailler tout un train de mesures.

Le quotidien montréalais rapporte que M. Mulroney annoncera lui-même le déblocage de nouveaux fonds fédéraux, de l'ordre de \$1 milliard, en faveur des trois conseils de recherches en sciences naturelles et en génie, en sciences

humaines et en recherches médicales, de même qu'une augmentation de la participation canadienne au projet américain de station orbitale.

« Je ne veux pas scooper mon premier ministre, a dit hier M. Robert de Cotret, mais il y a certainement de l'argent sur la table et M. Mulroney va en parler. »

M. de Cotret a lui-même promis de donner enfin plus de détails sur

ce que sera le nouveau ministère de l'Industrie, des Sciences et de la Technologie (MIST), qui naîtra au printemps de la disparition des programmes de développement régional et de la fusion des ministères de l'Expansion industrielle et du ministère d'État aux Sciences et à la Technologie. Le ministre devrait surtout confirmer que c'est le MIST, désormais, qui aura la main haute sur la répartition des budgets

de recherche et développement au Canada, faisant ainsi passer son budget à près de \$2 milliards par année.

Le gouvernement conservateur mijote une nouvelle politique économique depuis près d'un an maintenant. En mars 1987, à l'université de Waterloo, M. Mulroney avait déclaré que « la recherche et le développement ont été relégués à un rôle de second plan » sur les marchés internationaux. Soudainement le Canada est « l'un des pays industrialisés où il y a le moins de chercheurs, soit 90 pour 10.000 habitants, contre 280 aux

États-Unis, 240 au Japon, 150 en Allemagne et 140 en Grande-Bretagne ».

Quant au nouveau ministère de l'Industrie, des Sciences et de la Technologie, son titulaire, Robert de Cotret, rêve de le développer sur le modèle japonais : « Il s'agit d'assurer une continuité, du laboratoire de recherche à la mise en marché d'un nouvelle technologie; sur les marchés internationaux », affirme M. de Cotret qui ne cache pas le retour de son ministère à une vocation internationale, comme le MITI japonais d'ailleurs. »

More Tory grants for research predicted

BY SUSAN DELACOURT
The Globe and Mail

OTTAWA

Prime Minister Brian Mulroney is expected to hand over more federal money to research and development when he convenes a national conference on science and technology starting tomorrow in Toronto.

His Government has been criticized for not fulfilling its 1984 election promise to give research and development a bigger share of gross national product.

Even Robert de Cotret, Minister of Regional Industrial Expansion and Minister of State for Science and Technology, acknowledged at a news conference yesterday that the proportion of spending to GNP, which now stands at 1.34 per cent compared to about 1.24 in 1984, "hasn't moved. It's just about the same."

However, he said, an announcement by Mr. Mulroney at this week's conference is expected at least partly to fill the gap between what was promised and what was delivered. "Listen, there's going to be more spending for science and tech — there's no question about that. . . . You'll have to wait a few days more to know exactly what amount."

In 1986, Canada slipped into seventh place in research and development spending among the Group of Seven industrialized countries, falling well behind the United States and Japan, which devote about 3 per cent of their GNP to research and development.

This week's conference in Toronto is billed as a way to put new impetus behind the development of technology in Canada and as an opportunity for people from all sectors of the economy to define where change is needed.

Opposition MPs say they are wondering why the Government has



Canadian Press

Federal minister Robert de Cotret (right) and Bob Richardson, executive director of a conference on science and technology, attend an Ottawa news conference yesterday.

wanted so long to commit itself to these goals, especially when Mr. Mulroney made them a key part of his platform in 1984.

New Democratic Party MP Michael Cassidy said extra money should have been made available during the Government's first year in office, not its fourth.

The Government's increases in defence spending showed that the money was there, it just was not going to science and technology, he said. "It's a question of priorities."

Liberal MP William Rompkey

agreed, calling the yet-to-be-announced increase "too little, too late."

Mr. Cassidy also threw his support behind the urgings of the university committee of the National Advisory Board on Science and Technology, appointed by Mr. Mulroney, which wants Ottawa to double over three years the base budgets of its three councils that dispense research grants. This would require an additional \$500-million.

The committee's report, released to The Globe and Mail during the

weekend, also questioned the wisdom of relying on private industry to finance research at universities.

The committee was sharply critical of the matching-grants program, under which Ottawa ties research contributions to universities to the amount of private-sector money gathered.

Mr. de Cotret appeared to agree yesterday that Ottawa cannot depend on the private sector to satisfy the country's research and development needs. "Although some of Canada's corporations are world leaders in the development of new, high-tech products through extensive research, not enough is being done or has been done in the past by private enterprise."

He said he hoped that the approximately 200 representatives from labor, academia and industry due to attend the three-day technology conference would come away with some kind of consensus about where Canada is headed in research and development.

He warned too that "we will also be watching for the subsequent initiatives of the participants. . . ."

Mr. de Cotret said it is because the Government is going through a "difficult budgetary period" that research spending has not increased in proportion to GNP. But he cautioned that the numbers could be deceiving because even though the amount of research spending has stayed the same in proportion to GNP, there has been a dramatic increase in GNP.

Nevertheless, he said, the Government recognizes that the proportion of spending has to increase if Canada is to move from a resource-based economy to a knowledge-based society in the next century.

"Certainly new money is involved, and the Prime Minister will be talking about that during the conference."

Ottawa says it will increase research funds

OTTAWA (CP) — Industry Minister Robert de Cotret said yesterday that Prime Minister Brian Mulroney will outline plans for increased funding for science and technology at a three-day conference in Toronto that begins tomorrow.

"There's going to be more spending for science and tech, there's no question about that," de Cotret said at a news conference.

The government has been stung by criticism that it has failed to live up to promises to significantly increase research and development spending. It had promised that the spending would be increased to 2.5 per cent of gross national product by its fourth year in office. But the figure remains at 1.3 per cent of the GNP.

De Cotret promises more funds for research and development

The Canadian Press

The federal government is once again promising new money for research and development to help industry remain competitive.

Industry Minister Robert de Cotret said Monday that Prime Minister Brian Mulroney will outline plans for increased funding for science and technology at a conference in Toronto this week.

"There's going to be more spending for science and tech, there's no question about that," de Cotret said at a news conference.

"Certainly we're going to have to devote more resources to research and development. I think that's quite clear."

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De Cotret
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And he said Canada's corporations — with a few notable exceptions — are not doing their share to increase research and development.

The three-day conference, which begins Wednesday, is being billed as a historic meeting of minds in all sectors — government, industry, labor and academe — on a science and technology policy into the next century.

Such a conference was promised in the throne speech in October 1986. Mulroney will be acting as host through the entire event.

"This conference is effectively an economic summit," de Cotret said.

LES SYNDICATS BOYCOTTENT LA CONFERENCE SUR LA TECHNOLOGIE ET L'INNOVATION

Les centrales dénoncent le rejet de la présidente du CTC comme conférencière...

GILLES GAUTHIER
du bureau de La Presse

OTTAWA

Les grandes centrales syndicales québécoises et canadienne boycottent la conférence nationale sur la technologie et l'innovation convoquée par le premier ministre Mulroney, qui s'ouvre demain à Toronto.

La CSN et la FTQ seront absentes pour dénoncer l'attitude des organisateurs à l'endroit de la présidente du Congrès du travail du Canada (CTC), Shirley Carr.

Cette dernière a retiré la délégation de sa centrale, qui compte 2,3 millions de membres, parce qu'elle a été rejetée comme conférencière de marque.

De dire le porte-parole de la CSN, Michel Rioux, le président de la centrale, Gerald Larose, avait accepté l'invitation de participer à la conférence, mais il l'a déchirée «à la suite de la décision cavalière du gouvernement d'écarter Mme Carr».

Selon l'adjoint exécutif de cette dernière au CTC, Emile Vallée, les organisateurs avaient accepté en principe la participation de Mme Carr au nombre des conférenciers de marque. Ils l'ont par la suite rejetée à la suite, a-t-il entendu dire, d'un veto du cabinet du premier ministre Mulroney, qui reproche à Mme Carr son opposition au libre-échange.

Les dirigeants de la FTQ n'ont pu être rejoint hier, mais M. Vallée donne l'assurance que le président de la centrale québécoise, Louis Laberge, qui siège sur l'exécutif du CTC, est solidaire de la décision de boycotter. Les organisateurs de la conférence confirment l'absence de la FTQ.

Le ministre Robert de Cotret a qualifié hier de «malheureux» le retrait du CTC, qui comptait 21 des 30 participants du milieu syndical. Selon lui, le CTC avait soumis une liste de 21 participants, parmi lesquels on a choisi un conférencier qui aurait exprimé le point de vue de la centrale. «Le nom de Mme Carr, ajoute-t-il, n'était pas sur la liste et on a choisi parmi leurs propres candidats».

M. Vallée explique pour sa part qu'au cours de pourparlers entre le CTC et les organisateurs, on avait accepté en principe que Mme Carr soit la porte-parole du mouvement syndical, au même titre par exemple que David Culver de l'Alcan, qui donnera une conférence majeure au nom de la grande industrie. Mme Carr, ainsi qu'un représentant du milieu universitaire, devaient selon lui prendre la parole avant que M. Mulroney ne prononce

l'allocution de clôture de la conférence vendredi.

Le programme définitif ainsi que la liste des participants à la conférence n'étaient pas encore disponibles hier à Ottawa. Selon un porte-parole, les syndicats représentés seront ceux des infirmières, des menuisiers, des électriciens et des enseignants universitaires, ainsi que la Fédération canadienne du travail. Par ailleurs, le ministre Pierre McDonald représentera le gouvernement Bourassa.

Des promesses non remplies

Le ministre de Cotret a par ailleurs admis hier que le gouvernement conservateur n'avait pas rempli ses promesses électorales en matière de recherche et de développement.

M. Mulroney annoncera une injection de fonds gouvernementaux lors de la conférence

mais, quelle que soit la somme promise, les conservateurs ne peuvent accomplir ce qu'ils s'étaient engagés à réaliser pendant leur mandat de quatre ans.

Avant l'élection de 1984, M. Mulroney promettait de porter de 1,3 p. cent à 2,5 p. cent du produit national brut (PNB) les dépenses en recherche et développement au Canada. Quatre ans plus tard, on en est toujours à 1,3 p. cent. L'objectif initial est impossible à atteindre parce qu'il faudrait injecter des sommes très considérables en trop peu de temps.

Tout en admettant que ces pourcentages étaient exacts, M. de Cotret a expliqué lors de sa conférence de presse que le PNB avait augmenté rapidement depuis trois ans, le Canada se classant aux tous premiers rangs dans le monde. «Même en accroissant la recherche et le développement de façon significative, a-t-il ajouté, nous n'avons pu que rester au même niveau en pourcentage du PNB». Il explique aussi que la situation budgétaire demeure difficile.

Le gouvernement, de dire M. de Cotret, a toujours la ferme intention d'accroître ce pourcentage mais, ajoute-t-il, il ne pourra y arriver seul. Il faut, poursuit-il, que tous les autres intervenants s'impliquent, c'est-à-dire le monde des affaires, les provinces, le secteur académique et les syndicats.

Il ne faut pas attendre de résultats à court terme: M. de Cotret explique en effet qu'un des grands objectifs de la conférence est d'amener ces autres intervenants à participer à l'établissement d'une stratégie pour la recherche et le développement et d'une politique pour les sciences et la technologie.

Un autre but est de faire prendre conscience à la population de l'importance de la recherche et du développement pour les générations futures.

M. de Cotret a par ailleurs confirmé que le coût de la participation canadienne à la station orbitale américaine sera supérieur aux \$800 millions prévus. Son ministère réévalue à l'heure actuelle les coûts et M. de Cotret présentera une nouvelle demande au conseil des ministres. Les contrats accordés dans le cadre de ce programme entre 1984-85 et 1987-88 représentent une somme de \$37,5 millions.

M. de Cotret, qui est toujours ministre du Développement économique régional et ministre d'État aux Sciences et à la Technologie, précisera à Toronto le mandat et la structure du futur ministère de l'Industrie, des Sciences et de la Technologie, promis par M. Mulroney au début d'août 1987.

Mulroney débloquerait \$ 1 milliard pour la recherche scientifique

MICHEL VASTEL

OTTAWA — Le premier ministre, M. Brian Mulroney, rentre ce soir de ses vacances à Palm Springs, en Californie, et se prépare à cajoler la communauté scientifique à qui il avait fait des promesses coûteuses en 1984.

La conférence nationale sur la technologie et l'innovation, qui s'ouvre demain midi à Toronto, permettra en effet au chef du gouvernement et à ses principaux ministres de détailler tout un train de mesures:

■ M. Mulroney annoncera lui-même le déblocage de nouveaux fonds fédéraux, de l'ordre de \$ 1 milliard, en faveur des trois conseils de recherches en sciences naturelles et en génie, en sciences humaines, et en recherches médicales, de même qu'une augmentation de la participation canadienne au projet américain de station orbitale: « Je ne veux pas scoper mon premier ministre, a dit hier M. Robert de Cotret, mais il y a certainement de l'argent sur la table et M. Mulroney va en parler ».

◆ Mulroney

poursuit dans les laboratoires du gouvernement: le budget du Conseil national de recherches du Canada (CNRC) a chuté de \$ 520 millions en 1984-85 à \$ 398 millions l'an dernier et à \$ 408 millions cette année. Les fonds alloués aux trois conseils de subventions à la recherche, \$ 549 millions en 1987-88, sont à peu près les mêmes qu'il y a trois ans, \$ 536 millions en 1985-86. Et une dernière promesse d'allouer un dollar (jusqu'à concurrence de \$ 369 millions en cinq ans) pour chaque dollar investi par le secteur privé dans la recherche, s'est avérée un échec retentissant.

L'ancien gouvernement avait pour sa part englouti \$ 2,6 milliards de fonds publics dans un nouveau crédit d'impôt qui s'était bien vite transformé en échappatoire fiscale sans tellement contribuer à l'avancement de la recherche.

Après tous ces échecs, le gouvernement fédéral entend revenir à la bonne vieille technique de confier davantage de fonds aux universités, comme vient d'ailleurs de le lui recommander le Conseil consultatif national des sciences et de la technologie. Le Conseil de recherches en sciences naturelles et en génie dispose de près de \$ 320 millions de subventions et de bourses à distribuer cette année. Celui des recherches médicales dispose de près de \$ 168 millions et celui des sciences humaines de \$ 62 millions. Ces trois conseils se partageraient un demi-milliard de dollars de plus au cours des trois prochaines années.

Par contre, sur un budget de \$ 408 millions, le Conseil national de recherches ne dispose que de \$ 114 millions à distribuer, effectuant plutôt la majorité des recherches dans ses propres laboratoires.

■ M. de Cotret a lui-même promis de donner enfin plus de détails sur ce que sera le nouveau ministère de l'Industrie, des Sciences et de la Technologie (le MIST), qui naîtra au printemps de la disparition des programmes de développement régional et de la fusion des ministères de l'Expansion industrielle et du ministère d'Etat aux Sciences et à la Technologie. Le ministre devrait surtout confirmer que c'est le MIST, désormais, qui aura la main haute sur la répartition des budgets de recherche et développement au Canada, faisant ainsi passer son budget à près de \$ 2 milliards par année.

Le gouvernement conservateur mijote une nouvelle politique scientifique depuis près d'un an maintenant. En mars 1987 à l'université de Waterloo, M. Mulroney avait déploré que « la recherche et le développement aient été relégués à un rôle de second plan », soulignant que le Canada est « l'un des pays industrialisés où il y a le moins de chercheurs, soit 90 pour 100,000 habitants, contre 280 aux États-Unis, 240 au Japon, 150 en Allemagne et 140 en Grande-Bre-

tagne ».

Le premier ministre préside lui-même depuis un an les séances d'un nouveau Conseil consultatif national des sciences et de la technologie, une entente a été signée avec les provinces et toutes les agences fédérales reliées à la recherche et au développement sont en voie de regroupement.

Le gouvernement conservateur souffre cependant d'un sérieux problème de crédibilité avec la communauté scientifique. M. Mulroney avait en effet solennellement promis, pendant sa campagne au leadership du Parti conservateur, puis pendant la campagne électorale, de faire passer le niveau de la recherche et du développement au Canada de 1,3 à 2,5 % du Produit national brut. Plus de trois ans plus tard, avec des dépenses totales de \$ 7,1 milliards en 1987, on en est toujours à 1,3 % du PNB.

Pire encore, diverses initiatives du ministre des Finances, M. Michael Wilson, ont durement frappé la recherche universitaire et celle qui se

Voit page 10 : Mulroney

Cet effort étant fait, le premier ministre renverra ensuite la balle aux provinces, qui dépendent dix fois moins que le gouvernement fédéral dans la recherche et le développement, de même qu'au secteur privé, qui est l'un des moins généreux au monde. Selon un sondage du *Financial Post* en octobre 1987, Bell Canada Entreprises prévoyait d'investir près de \$ 700 millions dans la recherche en 1987, et seulement quatre autres entreprises (Energie atomique du Canada, Pratt & Whitney, IBM et Ontario Hydro) envisageaient de dépenser plus de \$ 100 millions.

Quant au nouveau ministère de l'Industrie, des Sciences et de la Technologie, son titulaire, Robert de Cotret, rêve de le développer sur le modèle japonais: « Il s'agit d'assurer une continuité, du laboratoire de recherche à la mise en marché d'une nouvelle technologie sur les marchés internationaux », affirme M. de Cotret qui ne cache pas le retour de son ministère à une vocation internationale, comme le MITI japonais d'ailleurs.

M. de Cotret annonçait incidemment hier la création d'un nouveau programme de \$ 60 millions pour le développement de technologies de pointe dans les domaines de la micro-électronique et des systèmes. Pour être admissibles, les projets de-

vront être axés sur la mise au point de technologies susceptibles d'améliorer la compétitivité internationale, des entreprises qui s'en serviront.

D'ici le mois de juin, le ministère de M. de Cotret aura complètement démantelé le programme de développement industriel et régional et transféré à trois agences pour les Maritimes, l'Ouest et le Nord de l'Ontario tout ce qu'il y a de fonds disponibles au développement régional. Le Québec et le reste de l'Ontario resteront dans une sorte de *no man's land* administratif, entièrement à la discrétion du pouvoir politique fédéral. Le nouveau MIST se concentrera dans la recherche avec plus de fonds pour le programme de productivité des industries de la défense et la main haute sur tous les organismes fédéraux associés à la recherche et au développement.

On annonce la participation de 200 chefs d'entreprises, universitaires et syndicalistes à la conférence nationale de Toronto. Fait inhabituel, le premier ministre prendra la parole deux fois, à l'ouverture et à la clôture. Mais le Congrès du Travail du Canada boude la conférence, sa présidente, Mme Shirley Carr, ne s'étant pas vue offrir le rôle de premier plan qu'elle souhaitait avoir.

Ottawa débloque un montant de \$1 milliard pour la recherche

JAN 12 1988

LE SOLEIL

A2

♦ (D'après PC) • Le premier ministre Brian Mulroney s'apprête à cajoler la communauté scientifique, comme il l'avait promis en 81, alors qu'il annoncera, demain, l'injection de fonds gouvernementaux additionnels de l'ordre de \$1 milliard dans le domaine de la recherche et du développement.

Seion le quotidien *Le Devoir*, la Conférence nationale sur la tech-

nologie et l'innovation, qui s'ouvre demain midi à Toronto, permettra en effet au chef du gouvernement et à ses principaux ministres de détailler tout un train de mesures.

Le quotidien montréalais rapporte que M. Mulroney annoncera lui-même le déblocage de nouveaux fonds fédéraux, de l'ordre de \$1 milliard, en faveur des trois conseils de recherches en sciences naturelles et en génie, en sciences

humaines, et en recherches médicales, de même qu'une augmentation de la participation canadienne au projet américain de station orbitale.

« Je ne veux pas scliper mon premier ministre, a dit hier M. Robert de Cotret, mais il y a certainement de l'argent sur la table et M. Mulroney va en parler. »

M. de Cotret a lui-même promis de donner enfin plus de détails sur

ce que sera le nouveau ministère de l'Industrie, des Sciences et de la Technologie (MIST), qui naîtra au printemps de la disparition des programmes de développement régional et de la fusion des ministères de l'Expansion industrielle et du ministère d'Etat aux Sciences et à la Technologie. Le ministre devrait surtout confirmer que c'est le MIST, désormais, qui aura la main haute sur la répartition des budgets

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Strategic spending

The urgent need for increased research and development spending in Canada has been featured in almost countless reports during the past decade. But we are still losing ground to more aggressive competitors because our governments are unwilling to match their rhetoric with research funds.

During the 1984 election campaign, the Conservatives promised to double research and development spending to 2.5 per cent of the country's gross national product within four years of coming to power. That date is less than a year away, but Canada still ranks last in R-and-D spending among the Group of Seven industrial nations.

And although the federal government has initiated some new programs in its \$4-billion R-and-D budget, spending by industry is growing much more slowly than it was three years ago.

According to a Conference Board of Canada survey published last week, Canadian companies are planning to increase R-and-D spending by 9.6% this year. That's well below the 15.2% increase recorded three years ago and the decrease comes at a time when Canadian companies are recording impressive profit increases.

If Canada wants to play a significant role in research, and experience the economic development that can flow from such advances, it must quickly increase its R-and-D efforts.

Last fall the federal government made a gesture towards leadership by establishing the outline of a national science policy. This week the country's top scientists and industrial researchers will be attending a conference in Toronto; they hope to learn what the government plans to do with its planned super ministry — the department of industry, science and technology.

The challenge is to reconcile the need to target result-oriented areas like microelectronics without robbing longer-term but equally important pure research. Basic and applied research both need more funding to be productive and to stop the brain drain to the United States.

Targeting specific industries such as telecommunications, transport and biotechnology would allow Canadians to capitalize on their strengths. It should also encourage industry to contribute more to research.

In Japan, for example, the government has been able to play a major role in targeting and developing technology that has been passed on to greatly benefit the private sector. In Canada, the federal government accounts for about one-third of the nation's \$7-billion annual spending on R and D, but it has not had an impressive record of using it to help the private sector become more competitive.

Strong leadership will be needed to set national goals and strategies for assaults on the global market. Instead of merely responding to crises or becoming preoccupied with crass political payoffs (as it has in the case of the federal space agency), the government should produce a business-like plan and follow it.

When it comes to risking money, Ottawa does it best

What can one say aside from nice things about today's National Conference on Technology and Innovation?

According to Ottawa's advance men, the conference in Toronto will witness "Canada's first national statement of science policy objectives" and provide "an opportunity for dialogue with the Prime Minister."

Much is therefore anticipated from it. When the Prime Minister is not mainstreeming (whoops) dialoguing, he is expected to be monologuing about his commitment to the future of research and development in this country.

Specifically, he will be saying how many extra billions will go into R&D. And the Opposition will be tallying up how far this falls short of his rash promise of four years ago that a Tory Government would double the 1.24 per cent of gross domestic product that was then being spent in the area.

Meanwhile, much is being said about how vital is the effort to improve the knowledge base of Canadians, how woefully we have lagged behind as innovators, and

why we spend less on research than all other Group of Seven nations. And, according to Ottawa's pre-conference text, we are losing our share of the export markets on which our prosperity depends, namely markets in industrial goods.

Some of this stuff is worth saying. Some of it is not. For Canadians to spend less than countries that have a far larger manufacturing base may be a shame but it is certainly not a surprise nor a sign of crippling complacency on our part.

And when it comes to losing our share of world trade in manufactured goods, well, that is a common affliction that reflects the inevitable gains made by Japan, Hong Kong, Taiwan, Singapore, Brazil and others, at the expense of the older industrialized countries. It is not something that pumping extra sums into R&D will reverse.

Nonetheless, it is true that Canada can, and should, do better, and that within a North American free-trade area, it will be necessary for us to sharpen our skills.



PETER COOK

The question, then, becomes how best to go about building on our strengths. And here is where doubts about the current approach creep in.

First, the manner in which the Mulroney Government has come to recognize its R&D obligations is not reassuring.

The commitment to raising spending as a proportion of GDP recalls the generosity of former prime minister Lester Pearson on foreign aid, which was also going to advance, exponentially, as Canada's economy grew. That

proved wildly unrealistic. And so, too, may this.

Over the long term, the constituency for promoting R&D with larger and larger amounts of public funds seems scarcely more imposing than that for helping the needy in the Third World.

Second, if the aim is to recover lost export markets and pioneer new ones, there is no doubt that the most effective research will be the kind that is closest to actual product development and to the marketplace. In fact, the kind done by private entrepreneurs who have mortgaged their home and taken over the workbench in the garage to build a superior mousetrap.

The Government claims that it has such people in mind and will help them. And a Tory Government can presumably claim no less.

But the plain fact is that this Tory Government has just delivered a ways and means motion to accompany its tax reform proposals that will cut back on the use of limited partnership financings for R&D. The effect is to make it

much more difficult for many small, technology-based businesses to claim R&D expenditures and earn investment tax credits.

As an example, passive investors can no longer get involved and receive tax benefits. So the market for syndicated R&D ventures sold through the investment community has just about dried up.

Okay, there is a reason for this. When the last Liberal government designed the infamous Scientific Research Tax Credit (SRTC) scheme to help foster private-sector research, it got taken to the cleaners. This Government cracked down on the cheating and the fraud. And the bureaucrats have now written tough provisions into the new tax code to prevent any abuse in future.

Everyone agrees that the quick flips were damaging. But there are, nonetheless, plenty of people involved in venture capital and in financing who say that the baby has now been thrown out with the bath water.

One tax specialist notes that a

lot of bona fide high-tech companies are going to find that, with the end of the limited partnership arrangements, a major source of financing has been closed off.

And a small business financier notes ruefully that the climate for supporting new companies with fresh ideas is worse than it has been in 30 years. Many venture capital funds are playing it safe and have become merchant bankers no longer interested in early-stage R&D companies, he says. And now, to everyone's surprise (because it was not revealed until the details of tax reform were spelled out Dec. 15), the tax system has become much more restrictive.

The Government would argue that, after the inglorious SRTC experience, it prefers to dole out grants, and that ending tax breaks is the essence of what tax reform is supposedly all about.

Which is a good argument for those who think the Government can stay the course and do the job, but a bad argument for those who worry about the stamina and sincerity of politicians.

Une conférence qui ne sera pas un instrument politique

Presse Canadienne
TORONTO

Il n'est pas question que la conférence nationale sur la technologie et l'innovation, qui coûtera \$1 million et qui débutait, aujourd'hui, serve de plate-forme électorale au gouvernement.

C'est l'assurance qu'a donnée, hier, l'un des principaux organisateurs de la conférence, le conseiller montréalais Robert Richardson.

Mr. Richardson répondait ainsi au député libéral Bill Rompkey, qui a accusé le gouvernement de vouloir se servir de la conférence comme d'un instrument politique en cette année

où, croit-on, auront lieu des élections générales.

La conférence, a soutenu M. Rompkey, « a pour but de faire croire qu'ils (les conservateurs) font quelque chose à ce sujet (la recherche et le développement) ».

Le député libéral a rappelé que le premier ministre Brian Mulroney a promis, au cours de la campagne électorale de 1984, d'augmenter les subventions pour la recherche et la technologie.

Ils disent maintenant qu'il faut en parler. Ils auraient dû commencer il y a trois ans. 1 milliard dans la recherche et le développement.

Face à l'innovation

La croissance de l'industrie canadienne, surtout dans un contexte de libéralisation des échanges avec les États-Unis, passe par son adaptation à la nouvelle technologie et aux innovations. Il en va aussi, par voie de conséquence, de la création et de la conservation des emplois.

Ne serait-ce que pour cette raison, le mouvement syndical devrait participer à la conférence de trois jours sur la technologie et l'innovation qui s'ouvre aujourd'hui à Ottawa, sous l'égide du gouvernement fédéral.

Les syndicats ne peuvent bouder la technologie ou les innovations. Ils en sont, règle générale, fort conscients. Même si on rencontre encore, hélas, plusieurs syndicats de métiers fort conservateurs en ces matières, le mouvement syndical a beaucoup évolué sur ces questions depuis, disons, dix ans. On ne boude plus le progrès, mais on ne veut pas que celui-ci se fasse aux dépens des emplois existants et de ceux qui les occupent.

De toute façon, les colloques sur les questions professionnelles, sur les nouvelles méthodes de travail, sur la technologie et autres sujets connexes sont davantage fréquentés, par les syndiqués eux-mêmes, que les assemblées syndicales traditionnelles.

Normalement, donc, le mouvement syndical aurait dû participer à la conférence d'Ottawa. Malheureusement, il semble qu'il en sera absent, pour des motifs qui semblent ridicules.

La présidente du Congrès du travail du Canada, Mme Shirley Carr, avait été invitée à la conférence comme conférencière pour exprimer le point de vue syndical. Tout comme M. David Culver, de l'Alcan, doit présenter le point de vue de la grande industrie. Or, Mme Carr, ces derniers temps, s'est fait remarquer pour ses déclarations passionnées contre le libre-échange. Des attachés politiques de M. Mulroney l'auraient donc fait rayer de la liste des invités, craignant qu'elle n'utilise la tribune privilégiée de la conférence d'Ottawa pour discuter d'un tout autre sujet que la technologie.

Cette querelle politique est malheureuse. Mme Carr aurait dû être invitée. Il est encore temps de le faire d'ici vendredi. Par ailleurs, même si on ne l'invitait pas, le sujet discuté en conférence est trop important pour l'avenir économique du Canada, donc des syndiqués, pour que le mouvement syndical refuse d'y participer uniquement par orgueil froissé.

Dans une entrevue accordée samedi dernier au quotidien *Le Devoir*, les présidents des trois grandes centrales syndicales du Québec, par la voix du président de la Centrale de l'enseignement du Québec, M. Yvon Charbonneau, ont déclaré qu'il est devenu plus important que jamais pour le mouvement syndical de prendre en compte l'aspect professionnel du travail. M. Charbonneau a ajouté que, quand il s'agit de parler de l'aspect professionnel et de la réalité quotidienne vécue par les travailleurs, les salles ne sont pas assez grandes. « Quand ça touche le contrat, nos gens aiment cela », a-t-il alors dit.

C'est justement parce que les questions d'innovation et de haute technologie sont des questions concrètes que le mouvement syndical ne peut pas se désintéresser des délibérations qui se tiennent à Ottawa à compter d'aujourd'hui et jusqu'à vendredi.

Pierre VENNAT

Liberal critic charges national science meeting will be PC election ploy

TORONTO (CP) — Organizers of the Mulroney government's national conference on technology and innovation strongly denied suggestions yesterday that the prime minister will use the highly-touted event as a pre-election platform.

Bill Rompkey, Liberal science and technology critic, said the meeting, costing \$1 million, is simply a political ploy by the Tories to get a lot of publicity in what he says may be an election year.

"This is all smoke and mirrors," Rompkey said. "It is designed to make people believe they're doing something about it (research and development)."

But Robert Richardson, a Montreal consultant and one of the organizers of the three-day conference, which starts today, said the meeting is not about politics.

The conference has been in the works since before it was announced in the October 1986 speech from the throne, "so it's not a short-term thought," he said.

Rompkey said Prime Minister Brian Mulroney, who will play host to the conference, promised to raise funds for research and technology during the 1984 election campaign. "Now they're saying let's talk about it. They should have started three years ago," he said.

About 200 participants are expected to attend the conference, aimed at developing a science and technology policy into the next century.

A television news report says Mulroney is expected to announce federal spending of an additional \$1.3 billion on research and development.

The government has been stung by criticism that it has failed to live up to promises to significantly increase



BILL ROMPKEY
Decries Tory record

research and development. It had pledged to increase spending to 2.5 per cent of the gross national product by its fourth year in office, but the figure remains at 1.3 per cent of the GNP.

"The Tory record on research and development is abysmal," Rompkey said.

But Richardson said the government is serious about developing a policy that would create jobs and economic growth through science and technology.

The government has followed through on promises to establish a National Advisory Board on Science and Technology and a new Department of Industry, Science and Technology, he said.

Those who are scheduled to address the meeting include Mulroney, Pierre Lortie, chairman of Provigo Inc.; David Culver, chairman of Alcan Aluminum; Edmond Fitzgerald, chairman of Northern Telecom; and Frank Oberle, minister of state for science and technology.

Conférence sur la technologie: pas un instrument politique

♦ TORONTO (PC) — Il n'est pas question que la conférence nationale sur la technologie et l'innovation, qui coûtera \$1 million et qui débute aujourd'hui, serve de plate-forme électorale au gouvernement.

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Selon une station de télévision, le gouvernement va profiter de cette conférence pour annoncer des dépenses additionnelles de \$1.3 milliard dans la recherche et le développement.

Promesse

M. Rompkey a noté que les dépenses gouvernementales dans ce domaine devaient être haussées à 2.5 pour 100 du produit national brut au cours de la quatrième année du mandat des conservateurs, mais qu'elles ne représentaient encore que 1.3 pour 100 du PNB.

M. Richardson a assuré, au contraire, que le gouvernement est très sérieux dans ses efforts pour élaborer une politique qui créera des emplois et provoquera la croissance économique, grâce à la science et à la technologie.

Le gouvernement, a-t-il souligné, a tenu sa promesse d'établir un Conseil consultatif national sur la science et la technologie et un nouveau ministère de l'Industrie, de la Science et de la Technologie.

La conférence est boycottée par le Congrès du travail du Canada. ●

Technology meeting criticism rejected

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The meeting is not about politics, said Robert Richardson, a Montreal consultant and one of the key organizers of the three-day conference, which was to start today.

The conference has been in the works since before it was announced in the October 1986 speech from the throne, "so it's not a short-term thought," he said.

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NATION

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The guest list includes leaders in business, industry, academia and some labor leaders. The Canadian Labor Congress is boycotting the conference.

Mulroney chose not to give working people a voice in the "this very important conference," said CLC president Shirley Carr.

But Richardson said the participants are from "all walks of life" and estimated that 12 labor officials were expected to attend.

Carr said in December that the prime minister's office would not let her address the conference because of her anti-free-trade stand.

But conference organizers have denied that Carr was being considered as a speaker.

James McCambly, president of the Canadian Federation of Labor, has said he would be attending.

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Science to get \$1.3 billion in extra funds

BY CHRISTOPHER WADDELL
The Globe and Mail

Details sought
Page A4

The federal Government plans to spend an additional \$1.3-billion on science and technology over the next five years, Prime Minister Brian Mulroney announced yesterday.

The pledge came as Mr. Mulroney opened a Government-sponsored conference on technology and innovation designed to solicit the views of corporate executives, academics and government officials on a national research and development strategy for Canada.

In March, 1984, six months before he won a landslide election victory, Mr. Mulroney promised that research and development spending as a percentage of gross national product would double from the then 1.3 per cent during the first four years of a Conservative government.

Currently, R & D spending remains at about 1.3 per cent of GNP.

"We need your help," Mr. Mulroney told the exclusive audience of approximately 200 assembled yesterday at the opening of the three-day session in a downtown Toronto hotel.

"We need you to help Canada create a consensus on technology and innovation, to help us find ways of achieving comparative advantages, to help us define new goals for attaining competitive excellence through research and development."

But the extra spending he announced is highly dependent upon the Conservative Government being re-elected, in a vote Mr. Mulroney must call by September, 1989.

This year, the federal Government has allocated \$4.1-billion for science and technology and \$2.6-billion for research and development.

That money can be put to work April 1, the beginning of the fiscal year, but federal officials yesterday could provide no timetable for the spending of the \$1.3-billion.

Mr. Mulroney said the first two projects to receive the new financial support will be a series of "centres of excellence" to be established in universities across the country, along with a national scholarship program. The program will offer \$2,000 a year in four-year undergraduate scholarships to 2,500 students entering science and engineering each year starting in September.

The centres of excellence program would turn individual universities across the country into specialist research sites, each concentrating on a specific type of research such as biotechnology, information technology, advanced industrial materials or artificial intelligence.

Frank Oberle, Minister of State for Science and Technology, could provide neither the details of how

Research centres planned

From Page One

provide neither the details of how many such centres would be established, nor the specific criteria for naming an institution a "centre of excellence."

He said those announcements would come after consultations with the provinces and industry, and the advice of an international advisory council, yet to be named.

That seems to leave open the possibility that the locations of the specific centres may be announced during an election campaign, as the Conservative Government of Ontario did with the location of several provincially financed technology centres proposed during its successful 1981 campaign for re-election.

"In terms of the actual definition, there's still some work to be done," conceded Robert de Cotret, Minister of Regional Industrial Expansion. (Mr. de Cotret will become Minister of Industry, Science and Technology when his department is reorganized later this year.)

Pressed repeatedly yesterday by reporters for more details, Mr. de Cotret would say only: "I don't for any moment believe we have defined the actual amounts of money, that will go to each or the exact parameters that will apply to each."

Mr. Oberle indicated he thought that between \$250-million and \$300-million would be spent on the centres of excellence, with another \$20-million devoted to the scholarship program.

That leaves approximately \$1-billion for projects that will apparently be announced in the months ahead.

The centres-of-excellence concept and the national scholarships were both proposed in a December report to Mr. Mulroney from a subcommittee of the 40-member National Advisory Board on Science and Technology, appointed by the Prime Minister nine months ago.

But the Government appears unlikely to accept that report's main recommendation.

It called on Ottawa to double over the next three years the \$364-million it provides to three federal councils giving grants to researchers in natural sciences and engineers, medicine, and social sciences and humanities.

"I believe that realism must prevail in any discussion to increase federal Government spending dramatically in the very short term," Mr. Mulroney said, in an apparent reference to the recom-

mendation in his speech.

"We must and we will devote more government funds to science and technology but in a sensible and productive way."

Mr. Oberle added later that he believes the members of the three councils consider the idea of doubling their budgets to be unrealistic.

In his speech, Mr. Mulroney pointed to the performance of the economy since the Conservatives were elected in September, 1984, and stressed Canada's past failure to devote sufficient finances to research and development.

"It is mindless for government to blame industry, for industry to blame government or both to reproach the universities for Canada's failure to achieve its potential in technology and innovation," Mr. Mulroney told the conference delegates.

But he was also critical of Canada's limited commitment to R & D and scientific study, compared with other major industrialized nations.

"This is not something that happened overnight. We're talking about decades of neglect before this starts to kick in," he said, noting that, among industrialized countries, Canada had one of the lowest rates of scientists and researchers in the population — 90 per 100,000 compared with 280 in the United States.

"This is a reflection of a lackadaisical attitude we have adopted," Mr. Mulroney said, referring to Canada's low level of international patents and the fact that 93 per cent of Canadian patents are held by non-Canadians.

Warming up for what could be an election theme, Mr. Mulroney linked spending on R & D with the recently negotiated free-trade agreement with the United States.

"Imagine what the combination of the two punches can mean for the regional economies of Canada," Mr. Mulroney said, suggesting that industrial spin-offs from R & D expansion can help all regions of the country prosper in trading with the United States.

Last night, Mr. de Cotret outlined the mandate of his new department to the conference. It will be an advocate for increased government and industry spending on R & D, particularly assisting small- and medium-size businesses, he said, to "foster a culture of science and technology" within "this Government's commitment to the principle that markets must be allowed to work."

Employers, educators anxious to see details of science spending

BY LAWRENCE SURTEES
The Globe and Mail

Although industry and university leaders welcome Prime Minister Brian Mulroney's planned \$1.3-billion, five-year science-and-technology initiative, many executives say it's a small start.

But most decision-makers surveyed after Mr. Mulroney's opening speech at a conference on technology and innovation in Toronto yesterday are anxious to see more detailed plans of how Ottawa will spend the money.

Mr. Mulroney invited 200 business and university leaders to the three-day conference to examine Canada's technological position, and to offer him advice at the closing session tomorrow.

In his speech, Mr. Mulroney said Ottawa plans to spend an additional \$1.3-billion on several new programs over the next five years. He also announced two new initiatives in his speech, including a scholarship program for engineering undergraduates and plans to finance "national centres of excellence."

But the federal Cabinet has yet to work out the precise details. And further programs that will use some of the money will be announced later during the three-day conference, said Robert de Cotret, federal Minister of Regional Industrial Expansion.

"I'm very encouraged because it's one of the first speeches the

Prime Minister's given in public that addresses the importance of science and technology," said Larkin Kerwin, president of the National Research Council.

"It's a step in the right direction."

As the largest federal granting council financing research and development, the NRC will disburse some of the money. Dr. Kerwin applauded the scholarship plan because there is a "genuine need" to encourage more young people to enter engineering sciences.

Federal Science Minister Frank Oberle said the scholarship is likely to pay \$2,000 to 2,500 students a year, for a total expenditure of \$25-million over five years.

"It's not a lot of money, but it's a good step in the right direction," said Pierre Belanger, dean of engineering at Montreal's McGill University.

Although George Connell, president of the University of Toronto, believes the over-all announcement "is substantial," he believes the merits of the package depend on how the money is allocated.

Both Mr. Mulroney and his Cabinet colleagues were vague on how much money will be allocated for the proposed technology centres, saying they have not made any decisions on how many or where the centres would be created.

\$1.3B boost for hi-tech

By ELAINE MOYLE
Toronto Sun

Canadian science and technology will receive a \$1.3 billion shot in the arm over the next five years, Prime Minister Brian Mulroney announced yesterday.

The federal funds will be channelled into new programs, Mulroney told 200 delegates at the opening of a three-day Metro conference on technology and innova-

tion. Delegates represent science, business and labor.

"Centres of excellence" programs — conducting world class research at five Canadian universities — will be established, he said. An independent jury of internationally recognized experts will determine where the centres will be set up.

Also, 2,500 scholarships will be granted to science and engineering students at the start of the next school year. The program will be expanded as it's phased in during the next five years.

"We must as a country become known not only for the wealth of our natural resources but for the richness of our intellectual potential. That is the challenge before this conference. That is the challenge before this country," he said.

Later, the prime minister denied the announcement

was a pre-election gift, calling it "the follow-up to a lengthy period of consultation I've had as chairman of the National Advisory Board on Science and Technology."

But NDP science critic Howard McCurdy charged the prime minister with "covering himself" on a 1984 election promise to increase funding for research and development.

"The \$1.3-billion comes out to a little over \$200 million a year and that really is trivial even in terms of what he (Mulroney) wants to accomplish."

Last year, the government spent \$1.1 billion on science and technology

Stuart Smith, former Liberal provincial leader and retired chairman of the Science Council of Canada, described it "as a step in the right direction."

The move also was applauded by the vice-president of the Canadian Nuclear Association.

"It's a very positive step.... I think the business community is going to respond well."

Mulroney en mal de thèmes électoraux

\$1,3 milliard pour forger le credo de l'«excellence»

MICHEL VASTEL

TORONTO — En mal de thèmes électoraux, le premier ministre s'est lancé hier à la recherche de l'excellence. Il a promis \$ 1,3 milliard à la communauté scientifique et la création de centres d'excellence dans les meilleures universités du pays.

Brian Mulroney a demandé à ses 200 invités personnels — chercheurs, hommes d'affaires et syndicalistes — de même qu'à la vingtaine de ministres et bureaucrates fédéraux rassemblés à Toronto pour la conférence nationale sur la technologie et l'innovation, d'aider son gouvernement « à créer une culture des sciences et de la technologie ».

Le premier ministre et le titulaire du futur ministère de l'Industrie, des Sciences et de la Technologie (le MIST) ont tenu le discours réellement « darwinien » d'un gouvernement qui n'a plus de temps à perdre, ni d'argent à donner, aux industries traditionnelles.

« Toutes les activités du MIST seront axées sur la compétitivité à l'échelle internationale et l'excellence industrielle, a expliqué Robert de Cotret. Ces activités démontreront que le présent gouvernement croit fermement au principe selon lequel il faut laisser les forces du marché agir et favoriser l'adaptation au lieu d'y résister ».

Le ministre a même pointé du doigt la sidérurgie canadienne, en a pratiquement fait un canard boiteux, en soulignant que « l'industrie automobile utilise de moins en moins l'acier et autres matériaux classiques ». M. de Cotret précise même que l'une des principales fonctions de son nouveau ministère sera de favoriser les secteurs de la biotechnologie, de l'informatique et des nouveaux matériaux.

La brochette de ministres présents à Toronto a été plutôt avare de détails sur la répartition, sur cinq ans, du \$ 1,3 milliard consacré au fi-

nancement de nouveaux programmes fédéraux dans les domaines des sciences et de la technologie. Ce \$ 260 millions par année s'ajoutera aux \$ 4,1 milliards déjà dépensés par Ottawa. Tout ce qu'il a été possible de savoir, c'est qu'Ottawa lancera:

- un programme national de création de centres d'excellence sur les campus universitaires, y consacrant de \$ 250 à \$ 300 millions sur cinq ans, selon la participation du secteur privé. Un jury choisira les projets

Voir page 10: Excellence

◆ Excellence

soumis par les universités à travers le pays;

- un programme de bourses d'études en sciences et en génie dont pourraient bénéficier environ 2,500 étudiants;

- le ministre d'État aux Sciences et à la Technologie devrait pour sa part annoncer demain une augmentation des subventions aux Conseils de recherches en sciences naturelles et en génie, en sciences humaines et en sciences médicales. Une partie du milliard de dollars débloqué hier servira en outre à combler les besoins du programme spatial canadien, en particulier de sa participation à la station orbitale américaine qui dépassera largement les \$ 800 millions prévus.

On ignore encore les réactions des provinces, jalouses de leur juridiction sur les universités. La création de Centres d'excellence avait été recommandée par la Commission Macdonald, mais l'idée avait été fraîchement reçue, notamment au Québec. Le gouvernement fédéral dépense déjà \$ 6 milliards dans le domaine de l'enseignement supérieur et le ministre d'État aux Sciences, Frank Oberle, doit tenir une réunion dès ce soir à Toronto avec ses homologues provinciaux.

M. Mulroney a une fois de plus rappelé que son gouvernement dépense dix fois plus que le gouvernement provincial en Ontario dans le domaine de la recherche et du développement. Le premier ministre a cependant évité de lancer la pierre aux provinces, ou au secteur privé qui ne finance que 3 % des fonds affectés à la recherche et au développement dans les universités cana-

diennes. Il a plutôt lancé un appel à la coopération de tous les partenaires à ce qu'il appelle maintenant un « plan national qui aidera à la création d'une culture des sciences et de la technologie ».

Le premier ministre a dressé un tableau plutôt sombre de la situation actuelle au Canada, situation qu'il avait promis de renverser au cours de la campagne électorale. Le Canada a importé en 1986 pour \$ 7 milliards de produits de haute technologie, dont \$ 2,4 milliards dans le seul domaine des ordinateurs et des produits connexes. Le pays ne consacre que 0,3 % de son produit intérieur brut à la recherche universitaire, notamment en raison du manque d'intérêt du secteur privé pour ce genre de recherche. Si le secteur privé canadien fait beaucoup plus de recherches que les entreprises américaines dans les domaines des télécommunications et de l'aérospatiale, c'est dû à quatre entreprises seulement qui, à elles seules, se partagent les tiers de toutes les dépenses de recherche industrielle au pays.

Mais c'est surtout par le discours du ministre de Cotret qu'on comprend mieux où le gouvernement fédéral s'en va. « Les sciences et la technologie devront former une chaîne avec les autres éléments du processus de production, du laboratoire au point de vente », exige le ministre.

Aux yeux du nouveau ministère de l'Industrie, des Sciences et de la Technologie, ce sont les entreprises développant de nouvelles technologies et ouvrant de nouveaux créneaux sur les marchés d'exportation qui auront droit à l'aide du gouvernement fédéral. Le Conseil national de recherches (\$ 408 millions) et le Conseil de recherches en sciences naturelles et en génie (\$ 320 millions de subventions et de bourses à distribuer), dépendront désormais du nouveau MIST et eux aussi devront se mettre au service des besoins de l'industrie ou de la défense.

Ce n'est que brièvement que le ministre de Cotret fait référence au développement régional. Maintenant que les quatre provinces de l'Ouest ont leur bureau de la diversification de l'Ouest, que les quatre provinces des Maritimes ont leur Agence des perspectives de l'Atlantique, et le Nord de l'Ontario son bureau de développement régional (représentant ensemble plus de \$ 2 milliards), le ministre de Cotret n'a pas soufflé mot du programme de développement industriel et régional, confirmant indirectement son sabotage cet été.

Le ministre a confirmé que « c'est à Ottawa qu'on s'occupera des initiatives de développement régional de l'Ontario et du Québec ». M. de Cotret promet des bureaux régionaux en Ontario et au Québec, mais ils seront « distincts » des bureaux du nouveau ministère de l'Industrie, des Sciences et de la Technologie. Et on se demande à Ottawa dans quels fonds ils vont puiser.

\$1,3 milliard pour la science et la technologie

Ottawa veut relancer l'effort industriel du pays en favorisant la recherche

GILLES GAUTHIER
TORONTO

Les \$1,3 milliard additionnels que le gouvernement fédéral promet de consacrer aux sciences et à la technologie au cours des cinq prochaines années sont principalement destinés aux universités.

Le premier ministre Brian Mulroney a précisé hier à l'ouverture de la conférence nationale sur la technologie et l'innovation à Toronto que les nouveaux programmes comprendront entre autres la création de centres d'excellence sur les campus universitaires et de bourses d'étude en sciences, en génie et dans des disciplines connexes.

Cependant, le programme n'est manifestement pas au point et les porte-parole gouvernementaux n'ont pu fournir que des renseignements fragmentaires. Ses véritables effets ne pourront s'il y a lieu se faire vraiment sentir qu'après les prochaines élections.

De plus, le gouvernement a, assez étrangement, invité à Toronto 200 intervenants qui sont censés l'aider à définir sa nouvelle politique en sciences et technologie, mais il leur fait connaître ses intentions avant même que ne débutent les ateliers.

Il va sans dire, sur un autre plan, qu'une somme de \$1,3 milliards (\$260 millions en moyenne par année pendant cinq ans en fait) frappe l'imagination à quelques mois des élections.

Seion M. Mulroney, l'objectif général du plan de création de centres d'excellence est d'établir à la grandeur du pays des réseaux de chercheurs et de scientifiques « qui effectueroient des travaux de recherche de premier ordre dans des domaines d'importance cruciale pour la compétitivité du Canada à long terme ».

Il a ajouté qu'un jury indépendant d'experts de renommée internationale sera formé pour conseiller le gouvernement sur les propositions qui lui seront soumises. « L'emplacement des centres, de dire M. Mulroney, leur nombre et leurs ressources financières seront déterminés d'après les recommandations du jury.

Les ministres responsable des sciences et de la technologie, Robert de Cotret et Frank Oberle, ont expliqué pour leur part que les centres mettront à profit les points forts d'une région dans une discipline donnée et qu'il n'y aura pas d'éparpillement. Il seront mis sur pied après discussions avec les provinces, les universités et l'entreprise privée.

Le ministre Oberle évalue les dépenses qui leur seront consacrées à \$250 millions à \$300 millions en cinq ans, ajoutant toute-

fois qu'il ne s'agit là que d'une spéculation. Il a également précisé que le gouvernement entend investir dans les cerveaux plutôt que dans le béton.

Le MIST

Hier soir le ministre de Cotret, a déclaré que le nouveau ministère de l'Industrie, des Sciences et de la Technologie (MIST) permettra d'établir une assise industrielle et scientifique canadienne capable de soutenir la concurrence internationale « dans une nouvel-

le économie mondiale caractérisée par des progrès technologiques rapides, où non seulement les matériaux et les méthodes de production, mais aussi les produits mêmes que les gens désirent, changent à la vitesse de l'éclair ».

Quarante mois après les élections, le gouvernement conservateur « entend s'employer en priorité à relancer l'effort industriel, scientifique et technologique national et à remettre le Canada sur la voie de l'excellence industrielle ».

Un des principales fonctions du ministère consistera à favoriser le développement des technologies stratégiques, soit la biotechnologie, l'informatique et les nouveaux matériaux industriels. Une de ses principales caractéristiques sera qu'il mettra l'accent sur les secteurs industriels.

Il aura dans chaque province des bureaux qui serviront de point de contact aux entreprises, « y compris les PME, qui n'ont ni les ressources ni la souplesse nécessaires pour aller constamment dans la capitale nationale chercher services et renseignements ».

La responsabilité du développement régional au Québec et dans les zones bien nanties de l'Ontario sera confiée à des bureaux régionaux distincts des bureaux régionaux du MIST, « afin de faire en sorte que les responsables puissent se concentrer sur leur région géographique respective ».

On sait que les conservateurs ont créé trois agences régionales de développement économiques, soit pour l'Ouest et les Maritimes, chacune étant dotée d'un budget de plus de \$1 milliard pour cinq ans, et pour le Nord de l'Ontario. Ces initiatives, a dit hier M. de Cotret, relèveront d'une organisation distincte des activités du nouveau ministère en matière d'aide à l'industrie, de science et de technologie, pour que le nouveau mandat en faveur de l'excellence industrielle et scientifique « demeure clair et pur ».

Le MIST sera le fruit de la fusion du ministère de l'Expansion industrielle régionale, dirigé par M. de Cotret, et du ministère d'Etat aux Sciences et à la Technologie.

La conférencier principal aujourd'hui sera le président de l'Alcan David Culver. La rencontre se terminera demain, alors qu'on remettra à M. Mulroney les rapports d'atelier.

Des statistiques diffusées hier indiquent qu'en 1985, le gouvernement fédéral a versé \$1,13 milliard pour financer la recherche et le développement en Ontario et \$433 millions au Québec. Le gouvernement du Québec et ses organismes de recherche ont versé \$159 millions et ceux de l'Ontario \$111 millions.

Science et technologie

Mulroney lance un appel au consensus

Guy Taillefer
Presse Canadienne
TORONTO

Dans un discours, prononcé hier à l'ouverture de la Conférence nationale sur la technologie et l'innovation à Toronto, M. Mulroney a lancé un «appel à l'aide» aux milieux universitaires, industriels et syndicaux afin d'établir un «consensus national en matière de technologie et d'innovation».

Cette supplication n'aura toutefois pas été entendue par les grandes centrales syndicales du pays, qui ont presque toutes boycottées la conférence à la suite d'un différend apparu entre le gouvernement conservateur et la présidente du Congrès du travail du Canada (CTC), Mme Shirley Carr.

La conférence, convoquée par M. Mulroney le 10 décembre dernier à l'occasion d'une réunion fédérale-provinciale des premiers ministres, réunit donc surtout des gens des milieux d'affaires. La conférence nationale, à laquelle participent environ 200 personnes, prend fin demain.

Qui est coupable?

Le gouvernement et l'industrie s'accusent mutuellement d'être responsable du piètre état dans lequel se trouve le Canada en matière technologique et scientifique.

Hier encore, M. Mulroney a souligné que «l'aide financière du secteur privé ne représentait que un pour cent des revenus des universités au Canada».

En 1986, a-t-il mentionné, le Canada a accusé un déficit commercial dans toutes les catégories de produits de hautes technologies, accumulant un solde déficitaire de \$7 milliards.

Les chiffres pour 1987 indiquent néanmoins que le gouvernement fédéral et les industries ont contribué à part quasi égale (environ 42 % chacun) au financement de la recherche scientifique et technologique.

Une culture scientifique

Ce qu'il faut, a dit le premier ministre, c'est créer «une culture» des sciences et de la technologie.

La somme de \$1.3 milliard, dont une partie sera disponible dès cette année, ira s'ajouter aux quelque \$4.1 milliards consacrées annuellement par



Brian Mulroney

Ottawa à la recherche et au développement.

Le gouvernement conservateur est d'ailleurs accusé d'avoir trahi ses promesses électorales dans ce domaine.

En campagne électorale il y a plus de trois ans, M. Mulroney s'était fermement engagé à doubler de 1.3 à 2.5 % la proportion du PNB consacré à la recherche et au développement. L'année dernière, la part du produit national brut versée à ce secteur ne dépassait pas 1.5 %.

L'actuel ministre d'État aux Sciences et la Technologie, M. Frank Oberle, a expliqué hier qu'il avait été difficile d'augmenter ces proportions en raison du taux de croissance de l'économie canadienne.

Il a admis dans le même souffle que le milliard de nouveaux dollars annoncé par le premier ministre n'allait pas modifier substantiellement la proportion de son PNB consacrée par Ottawa à la recherche.

Libéraux et néo-démocrates n'ont pas été particulièrement impressionnés par les nouvelles initiatives conservatrices.

Participant à la conférence, le député néo-démocrate Howard McCur-

dy et son collègue libéral David Berger ont estimé que le \$1.3 milliard n'aiderait que marginalement le Canada à combler son retard technologique.

Des attitudes à modifier

M. McCurdy a affirmé avoir particulièrement apprécié le discours prononcé dans le cadre de la conférence par le président du conseil d'administration de Proviso, M. Pierre Lortie.

«Le monde n'est pas en mutation, il a déjà changé», a fait valoir M. Lortie, qui déplore les «graves déficiences» du Canada en matière de développement technologique.

«Ce dont nous avons besoin, ce ne sont pas seulement quelques dollars de plus pour financer certains projets scientifiques, mais surtout une modification profonde de nos attitudes à l'égard de la technologie et une reconnaissance non équivoque de son rôle fondamental dans l'amélioration qualitative et quantitative de notre niveau de vie.»

M. Lortie propose trois solutions:

- Améliorer de façon considérable la qualité de l'enseignement au Canada.

- Améliorer la quantité et la qualité de la recherche effectuée au Canada, surtout en milieu universitaire. Le Canada, dit M. Lortie, fait piètre figure à ce chapitre.

- Faire en sorte que les chefs d'entreprises canadiennes apprennent à maîtriser la technologie et à l'exploiter de façon rentable. Trop peu d'entre eux, dit-il, savent le faire.

M. Lortie dirige l'un des comités formés par le Conseil consultatif national des sciences et de la technologie. Ce conseil est sous la présidence de M. Mulroney.

Dans un rapport publié en début de semaine, le comité de M. Lortie proposait de doubler les budgets des trois organismes fédéraux chargés de subventionner les projets de recherche et de développement au Canada. Une telle initiative coûterait \$500 millions au gouvernement sur trois ans.

M. Mulroney n'a pas fait état de cette proposition hier à Toronto.

Science et technologie

Ottawa investira \$1.3 milliard

Guy Tallefer
Presse Canadienne
TORONTO

Le gouvernement fédéral consacra une somme additionnelle \$1.3 milliard, au cours des cinq prochaines années, au domaine des sciences et de la technologie.

Ces fonds nouveaux sont destinés, a déclaré le premier ministre, hier à l'ouverture de la Conférence nationale sur la technologie et l'innovation à Toronto, à aider le Canada à combler le retard qu'il accuse face aux autres pays occidentaux sur les plans technologiques et scientifiques.

Les fonds, a indiqué M. Mulroney, seront principalement destinés aux universités canadiennes. Mais ni le premier ministre ni son ministre Robert de Cotret n'ont pu préciser exactement quels montants seraient versées aux institutions universitaires au chapitre de la recherche et du développement.

La principale initiative mise de l'avant hier par M. Mulroney prévoit la création de «centres d'excellence» sur les campus universitaires.

L'objectif du nouveau programme consistera, a dit M. Mulroney, «à établir à la grandeur du pays des réseaux de chercheurs et de scientifiques de premier ordre dans des domaines

d'importance cruciale pour la compétitivité du Canada à long terme.»

En conférence de presse, M. de Cotret a affirmé ne pas savoir combien de centres d'excellence seraient mis sur pied ni quelles sommes y seraient affectées.

Le gouvernement compte former un jury d'experts indépendants qui seront chargés de conseiller le gouvernement sur l'établissement de ces centres.

«Ce sont les critères d'excellence et d'équilibre régional qui vont déterminer la répartition de l'argent», a indiqué M. de Cotret, qui est à la fois ministre de l'Expansion industrielle régionale et ministre responsable de la mise sur pied du nouveau ministère de l'Industrie, des Sciences et de la Technologie, dont la création a été annoncée fin août dernier par M. Mulroney dans le cadre d'un mini-remaniement de son cabinet.

Une partie des nouveaux argents sera d'autre part versée à un programme de bourses d'études en sciences, en génie et dans les disciplines connexes.

Des bourses d'environ \$2,000 seront annuellement accordées à 2,500 étudiants universitaires, a indiqué M. de Cotret.

PM pledges \$1.3 billion for science, technology

Research fund gets lukewarm welcome

By Andrea Gordon and Alan Toulon Toronto Star

Prime Minister Brian Mulroney's pledge of \$1.3 billion for science and technology programs was greeted yesterday as a step in the right direction but not enough to keep Canada competitive with other nations.

Mulroney said yesterday Ottawa will use some of the money, to be spent over the next five years, to create research "centres of excellence" across Canada and annual scholarships for 2,500 science and engineering students.

The centres of excellence, modelled after a similar program set up in Ontario last year, are to be collaborations between universities and industry to focus on long-term research and will be selected by a panel of outside experts.

But details of the new programs and where the rest of the money will go were not available and will be worked out over the next few months, federal Industry Minister Robert de Cotret told reporters.

200 experts

Mulroney made the announcement as he opened his long-awaited conference on science and technology, attended by 200 research and technology experts across Canada.

The three-day event, promised in the October, 1986, Throne Speech and costing Ottawa \$1 million, is aimed at establishing a science and technology strategy to take Canada into the next century.

Mulroney told the delegates science and technology must be "a national priority", but admitted more must be done by both government and industry.

"Canadians know that we must as a national priority develop new industries, produce new goods, offer new services," Mulroney said.

"And the way to do that is through a concerted national effort in science and technology."

The conference is aimed at encouraging more private-sector participation in funding research and development in Canada.

Delegates are divided into workshop groups of 20 to discuss key questions related to technology strategy and will report back to the Prime Minister on Friday morning.

Many delegates called the funds announced yesterday a welcome move, but noted it won't do much to boost Canada's overall research spending.

The Mulroney government has come under fire for failing to live up to a 1984 election promise to more than double Canada's spending on research and development to 2.5 per cent of Gross Domestic Product (GDP), which is comparable to that of Canada's biggest competitors.

The level remains at about 1.3 per cent, and Science Minister Frank Oberle acknowledged at a news conference the new funding alone won't do much to improve that.

He said the \$1.3 billion "will not make a big difference" unless the government encourages the private sector to also commit more money to research and development.

Idea rejected

Yesterday, Mulroney rejected the idea of a spending target as the way of developing a science policy.

But John Reid, director of government relations with the Canadian Advanced Technology Association, said a target is the best way to set goals and measure any improvement in the country's performance.

He said the \$1.3 billion is modest, considering Ottawa cut the National Research Council budget, capped the base budgets of the research granting councils and limited tax credits available to companies that conduct research.

Ernie Welling, director of technical affairs with the Electrical and Electronic Manufacturers Association of Canada, said Ottawa is sending "mixed signals" by providing funds for long-term research but not enough support for industrial research through the tax system.

PM pledges extra \$1.3 billion for research

By Les Whittington
Southam News

TORONTO — Prime Minister Brian Mulroney sought Wednesday to fulfil a four-year-old election pledge by providing an extra \$1.3 billion for research and development.

Mulroney made the announcement at a conference of experts from business, government, labor and universities hoping to solve the country's lagging technological capacities.

He said the new funding will provide scholarships

of \$2,000 each for 2,500 university students annually.

The government also plans to spend about \$250 million a year to set up a handful of so-called centres of excellence — networks of researchers and scientists — on university campuses.

But the funding, which amounts to \$260 million annually over five years, received poor reviews.

The Mulroney government's policy is "a lot of (Research, page A2)

(Ferguson, page C11)

Research

From page A1 story:
PM pledges extra \$1.3 billion for research

smoke and mirrors" that does little to improve the situation, said industry spokesman John Reid.

"We're probably at the status quo position of 1984" when the Conservatives took office, said Reid, an official of the Canadian Advanced Technology Association.

Canada has long been singled out for its low spending in this area, which is widely seen as the key to creating a healthy economy and jobs in the decades ahead.

During the 1984 election, Mulroney promised to double Canada's spending on research and development to 2.5 per cent of gross national product (the sum of goods and services produced). But

more than three years later, the figure remains at 1.3 per cent of GNP.

Larkin Kerwin, president of the National Research Council, said the program is a good beginning. But he noted that the money falls short of Mulroney's promise to

double R and D funding.

"Obviously more will have to be done if all our competitors are spending 2.5 to three per cent of their gross national product on R and D," he said. The new funds only would increase funding for R and D to 1.35 per cent of GNP, he said.

Frank Oberle, the federal junior science minister, conceded the new funding will not do much to improve Canada's poor world ranking in this area. Among the seven largest industrial democracies, Canada spends the least on research and development.

PM's pledge not big jump for R&D spending

Only a politician would dare do it — ask a bunch of people for advice and then tell them what you've already decided to do.

But Brian Mulroney did it with a straight face Wednesday at the opening of his long-ballyhooed conference on innovation and technology.

"I have asked you here for a simple reason," Mulroney told about 200 of the country's most important business leaders and academics. "We need your help."

He wanted their help, he said, to define ways to make the country more competitive by developing and applying the advanced technologies Canada desperately needs to stay healthy and wealthy in an increasingly competitive world.

And then he announced that the government would spend \$1.3 billion over the next five years to help make it happen.

One part of the plan is to create about 2,500 scholarships each year for science and engineering. Hardly controversial.

But the second part of the plan is to create an unspecified number of "centres of excellence" across the country to encourage first-rate research.

That one is more controversial and was immediately labelled in one of the workshops that followed as a trendy buzzword that will be of questionable benefit.

Noting that Ontario has already designated six centres of excellence in the province, one participant predicted there would be "one on every street corner," severely diminishing their value.



John Ferguson
Southam News

Others predicted that designating centres of excellence will set off regional battles that will make the furor over the CF-18 maintenance contract look like small potatoes.

But Science Minister Frank Oberle is more optimistic, saying the idea is not necessarily to bring all of Canada's top scientists in a specific field to one university.

Much of the focus will be on establishing ways for these scientists to communicate and co-operate with each other more effectively.

In any case, Mulroney no doubt will get what he wants out of the announcement, headlines in the newspapers saying the government is coughing up \$1.3 billion.

Putting out a figure spread over five years makes it look more impressive.

But at \$260 million a year, the money will just bring total federal spending (discounting for inflation) to a little above what it was on science and technology when the Tories took office.

In 1984, total spending on science and technology was \$3.29 billion. Last year, that spending had declined to \$3.17 billion in constant dollars.

And it will be only a drop in the bucket toward meeting an over-enthusi-

astic promise that Mulroney made prior to the last election.

At that time he dumped on the Liberals for "15 years of negligence" in allowing research and development spending in Canada to fall off.

Of the two dozen major industrial countries in the Organization for Economic Co-operation and Development, Canada ranked about fourth last in R&D spending as a proportion of GDP (Gross Domestic Product). It was about 1.39 per cent, less than half that of the U.S., Japan and Sweden.

Mulroney promised to double it in his first term.

But the numbers are in and we're falling behind. Oberle's own department estimates spending has slipped to 1.31 per cent of GDP in 1987. Not that spending actually declined — total R&D spending in Canada is up by about \$1 billion since 1984 to \$7 billion.

But it hasn't kept pace with growth in the economy.

Mulroney didn't mention the numbers in his speech. But he did make the valid point that Canada's poor record didn't happen overnight.

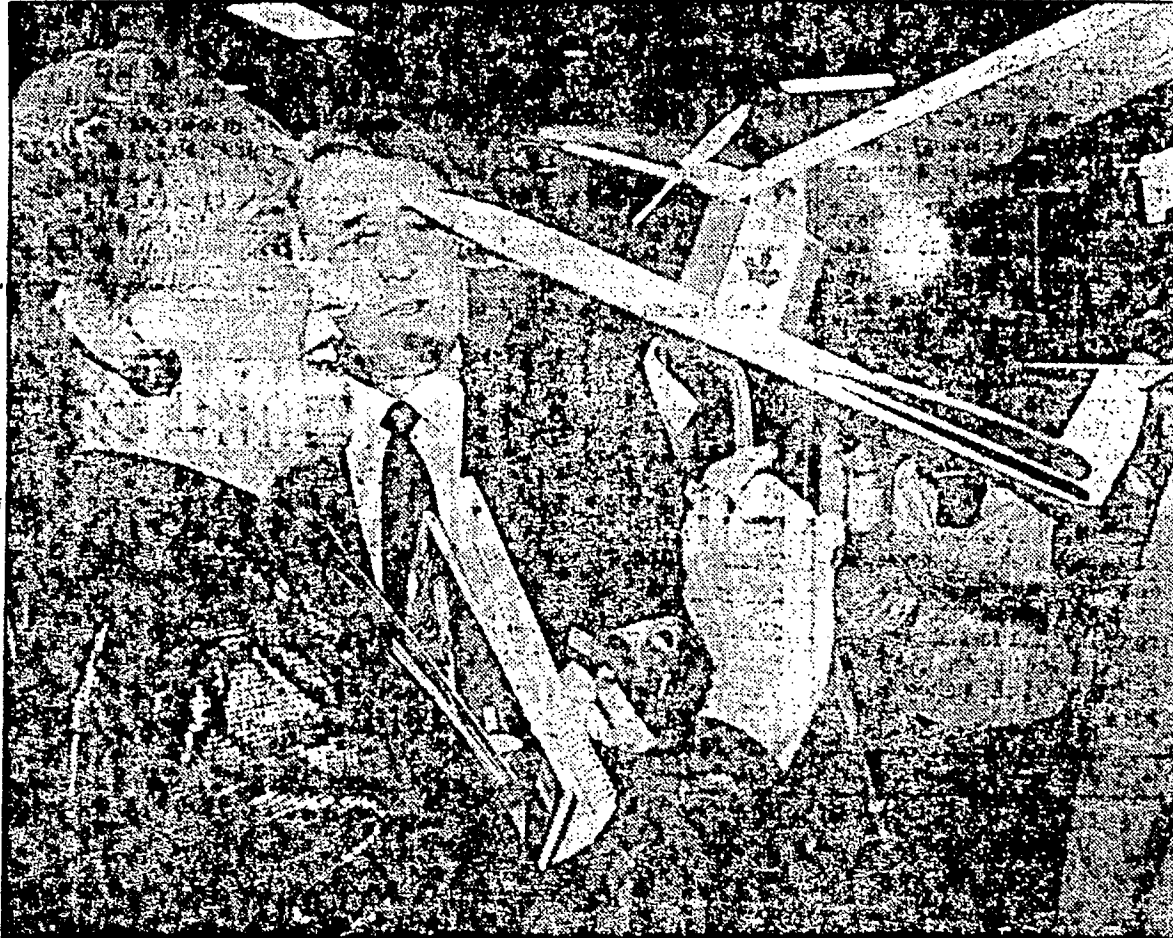
The fact that Canadians file only 10 per cent of the patents in this country or that we have so few scientists and researchers compared to Japan, Sweden or the U.S. is not a problem that developed yesterday.

The days in which Canada could stay wealthy simply by selling natural resources are behind us.

To stay wealthy, we have to sell our knowledge.

And how we can ensure that happens is supposed to be what this conference is all about.

Ottawa to spend \$1.3 billion on technology



Flora MacDonald shows PM model of a Canadian microwave plane at conference. CP

TORONTO (CP) — Prime Minister Brian Mulroney opened a national conference of technology and innovation yesterday by announcing \$1.3 billion in funding for science and technology during the next five years.

The funding will pay for regional centres of excellence on university campuses, Mulroney told about 200 delegates.

"The broad purpose of the program is to establish networks of researchers and scientists across the country to conduct world class research in areas crucial to Canada's long-term competitiveness."

In a campaign-like speech which included a long list of Conservative achievements, Mulroney said Canada must take steps to meet the economic challenges of the 21st century.

An independent jury of internationally recognized experts will recommend where the centres will be established.

Robert de Cotret, minister of regional industrial expansion, Frank Oberle, minister of state for science and technology, and David Crombie, secretary of state, will be responsible for implementing the initiatives, he said.

The three-day conference brings together leaders in science, business and labor to discuss a national science and technology policy.

PM pledges \$1.3 billion for research

By John Douglas
Winnipeg Free Press

TORONTO — The federal government plans to inject \$1.3 billion over the next five years into Canada's sagging research and development effort.

Prime Minister Mulroney opened the first-ever national conference on science and technology yesterday by announcing initiatives to concentrate special research and development efforts at a select group of universities.

As well, Mulroney called for a new scholarship program for 2,500 science and engineering students entering post-second

See PLANS page 4

ary institutions.

Although few details were given yesterday, Science Minister Frank Oberle said he hopes between \$250 million and \$300 million will be allocated to specific universities for research in specialized fields in the next five years.

He said he hopes students across Canada with special talents in engineering and science will begin receiving \$2,000 scholarships under the new program before the next school year.

Speaking to the 200 conference delegates in an opening address, Mulroney painted a bleak picture of research and development in Canada after what he called years of neglect.

Only two per cent of Canadian industries conduct any research, while 60 per cent of manufactured goods used by industry are imported.

Mulroney said the new money is a Tory pledge of support for the future of Canadian technology.

"We must, as a country, become known not only for the wealth of our natural resources, but for the richness of our intellectual potential."

But yesterday's billion-dollar pledge comes nowhere near fulfilling a 1984 election promise to double research and development spending to 2.5 per cent of the gross national product, a figure comparable to that of Canada's trading partners.

Static level

Instead, the funding level has remained static at about 1.3 per cent of GNP for the last three years.

The Mulroney government has slashed the National Research Council's 1987 operating budget and has frozen grant budgets for two years.

Even with the new money, such

spending as a percentage of GNP has risen only minutely, said research council president Larkin Kerwin.

"The preliminary announcement of \$1.3 billion will raise the resources we put in science and technology from 1.3 per cent to 1.35 per cent, so

we still have a long way to go to get to 2.5 per cent or some such number to be on par with our trading adversaries," he said.

Kerwin estimated Mulroney would have had to increase science funding by about \$10 billion to fulfil his 1984 promise.

The vague announcement, not reinforced by any firm plan, had government opponents claiming it was little more than a pre-election ploy.

Robert de Cotret, minister responsible for regional industrial expansion, and Oberle could not give even

a brief outline of the government's plan for the money.

They could not explain how much money would be spent in any one area, when it would be spent, when it would begin to flow or how the universities would be selected.

Oberle said the money has not

been earmarked because it will depend on how industry responds to the new capital.

He said private industry has already pledged \$335 million for university research in the next five years if Ottawa matches funds.

He said the universities would be selected by an international panel with an arms-length relationship with the government, but he could not name anyone who would be on it.

Five centres

He said no decision has been made on the number of centres to be given the special designation, although federal officials say there will be five, including one in British Columbia and another in Saskatchewan.

Liberal science critic Bill Rompkey said the lack of a plan is proof the Tories are throwing money into research only because an election is around the corner.

Howard McCurdy, the New Democratic Party science critic, called the sum a trivial amount for a staggering problem.

Industry and education spokesmen were puzzled about the significance of the announcement.

Stuart Smith, president of Rockcliff Research and Technology Inc., said it was a good start and praised the move to encourage engineering and science students, but added the government would need 10 times the amount it has pledged to turn things around.

Pierre Belanger, dean of engineering at McGill University in Montreal, said the plan will put universities that aren't given special status at a competitive disadvantage.

"You can say the rich will get richer," he said. "Those that have well-established, well-structured facilities will be in a better position to get something from this program than those who start from further back."

University shutout predicted

By John Douglas
Winnipeg Free Press

TORONTO — Manitoba universities will not be included in a new federal plan to fund special research projects announced yesterday, federal sources say.

The proposal will transform the universities of Manitoba, Winnipeg, and Brandon into more trade schools in the paper, highway, and high technology, one university spokesman said.

Soon after Science Minister Mulroney announced a \$1.4-billion program to upgrade Canada's research program, two independent federal sources confirmed that Manitoba's universities have been left out of the plan.

The program would see \$300 million go directly to so-called centres of excellence — universities given special status for re-

See PAWLEY page 4

Pawley blamed for loss of federal research funds

search and development in specific areas — during the next five years.

The sources say Mulroney already has promised Saskatchewan Premier Grant Devine that a research centre for agriculture will be located at the University of Saskatchewan.

"The decision has been made by higher-ups," one source said. "Manitoba would not have gotten the centre even if it wasn't promised to Devine."

"It could be a while before Pawley gets anything from Ottawa."

An aide to Manitoba Education Minister Richard Preiser said late yesterday that Preiser would leave no comment until he received official confirmation that the University of Saskatchewan had been picked.

"If it proves true, (Preiser) told me to tell you he will have plenty to say about it then," Dave Church said.

But Federal Science Minister Frank Oberle said the centres of excellence have not been selected.

Oberle said the centres will not be picked on political grounds but rather by an independent cross-country panel of experts. He said the cabinet will not overturn any of the panel's decisions.

"There will be criteria set out and then it will be up to them to decide what institutions are best suited for the program," he said.

Oberle said Manitoba warrants consideration as an agricultural centre as well as a biotechnical research facility and robotics centre.

But one source said the criteria will include regional distribution and could be framed in such a way to squeeze Manitoba out if Saskatchewan is selected.

"There has to be a centre for western agriculture and if awarded properly the selection committee is going to choose U of S over the University of Manitoba."

Arnold Reimark, president of the University of Manitoba said yesterday he will wait to see what Ottawa does before responding.

He said if the government selects centres of excellence to emerge from natural research "practices" Manitoba would expect to receive federal funding.

"One of the problems to avoid is if the centre's support were very tightly linked to industrial participation," he said. "What concerns me is that there will be criteria established for supporting centres of excellence which have more to do with political and financial considerations than they do with research quality."

\$1.3-billion boost pledged for Canadian R&D

By IES WHITTINGTON

TORONTO/Sciam News

Prime Minister Brian Mulroney sought yesterday to fulfil a four-year-old election pledge by providing an additional \$1.3 billion for Canada's crucial research and development efforts.

Mulroney made the announcement at a conference of experts from business, government, labor and universities hoping to solve the country's lagging technological capacities.

The pledge is not a pre-election goodie, but part of a "serious national initiative," Mulroney said yesterday.

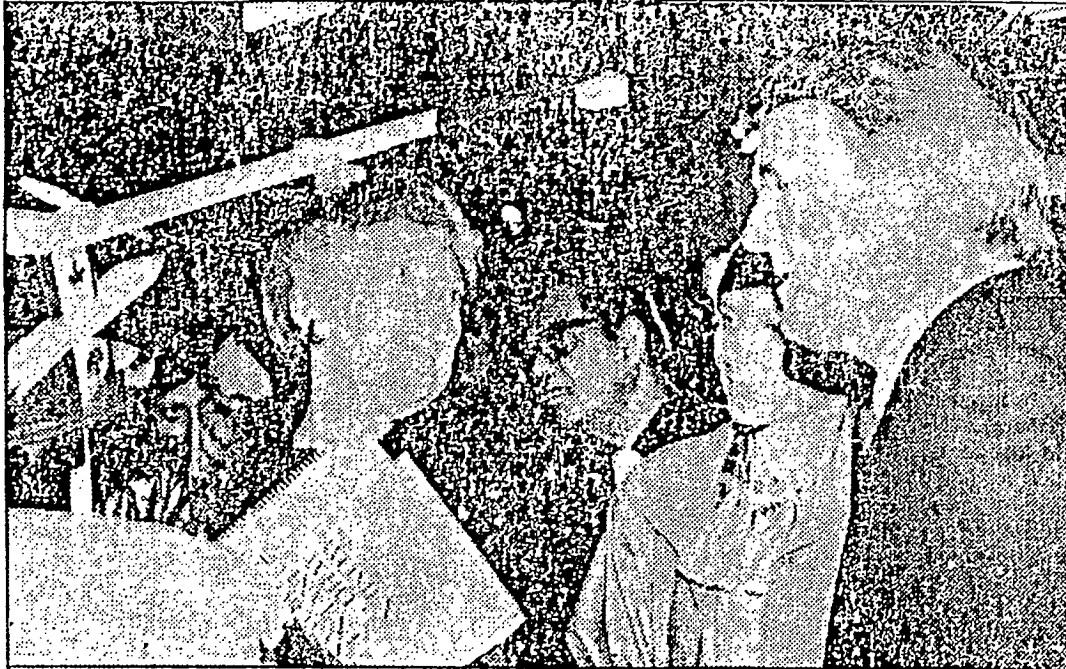
"It's not electioneering at all," Mulroney told reporters after speaking to the national conference on technology and innovation.

The five-year program, announced at the opening of the three-day conference, "was the followup to a lengthy period of consultation I've had as chairman of the National Advisory Board on Science and Technology," Mulroney said.

But the new federal funding — which amounts to only \$260 million annually over five years — received poor reviews.

The Mulroney government's policy is "a lot of smoke and mirrors" that does little to improve the situation, remarked industry spokesman John Reid.

"We're probably at the status quo position of 1984" when the Conservatives took office, said



Prime Minister Brian Mulroney and MP Flora MacDonald view exhibits at high-tech conference

CP Laserphoto

Reid, an official of the Canadian Advanced Technology Association. The group is the national representative of companies doing high-technology research and development.

Canada has long been singled out for its low spending in this area, which is widely seen as the key to creating a healthy economy and worthwhile jobs in the decades ahead.

During the 1984 election, Mulroney promised to double Canada's spending on research and development to 2.5 per cent of gross national product (the sum of goods and services produced). But more than three years later, the figure remains at 1.3 per cent of GNP.

Reid also said that the climate for increased business spending on high-technology research has

been damaged by tougher rules in Finance Minister Michael Wilson's tax reform package.

Frank Oberle, the federal junior science minister, conceded the new funding will not do much to improve Canada's poor world ranking in this area. Among the seven largest industrial democracies, Canada spends the least on research and development.

However, Oberle said that the problem is that business has been "very, very slow" to pour in its own money.

Mulroney said the new funding will provide scholarships of \$2,000 each for 2,500 university students annually.

The government also plans to spend about \$250 million a year to set up a handful of so-called centres of excellence — networks of researchers and scientists — on university campuses.

Other initiatives are planned but the government wouldn't provide details. The program is expected to be established before September.

"We have not made all the progress hoped for" in the science and technology area, Mulroney said in his keynote address to the conference.

But, he added, "it is mindless for government to blame industry, for industry to blame government, or both to reproach the universities for Canada's failure to achieve its potential in technology and innovation."

In future, Canada must become known "not only for the wealth" of its natural resources but also "for the richness of our intellectual potential."

NDP science critic Howard McCurdy said the new funding is trivial.

"Mulroney's only doing something to cover himself on his original promise" to double spending, McCurdy said.

Il était plus que temps

◆ Peu importe ce qu'en penseront les esprits chagrins: pour une fois, un gouvernement a su analyser correctement un problème, l'envisager dans une perspective globale et proposer des solutions pleines de sens. Et ce geste, c'est le premier ministre Brian Mulroney qui l'a posé, hier, lors de l'ouverture de la Conférence nationale sur la science et l'innovation, à Toronto.

par
Denis
ANGERS



Car, si l'offre fédérale d'investir d'ici à cinq ans la somme de \$1.3 milliard dans des centres régionaux de recherche accrochés aux universités n'est pas généreuse outre mesure, elle s'inscrit dans une démarche plus que nécessaire... indispensable.

Au moment où le Canada du futur libre-échange s'apprête à affronter de plein fouet la concurrence américaine, il était apeurant de constater combien nous sommes indigents, dans ce volet capital de la croissance qu'est le recherche et le développement. Recherche et développement de nouvelles idées, de nouveaux produits, de nouvelles manières de faire...

Laissons donc parler quelques chiffres. Au Canada, ce n'est que 1.4 pour 100 du produit intérieur brut qui va à la recherche; aux États-Unis, au Japon ou en Allemagne, c'est plus de 2.5 pour 100.

Chez nous, pas moins de 80 pour 100 des instruments scientifiques sont importées de l'étranger et 70 pour 100 des machines en proviennent. Pis encore, le nombre de scientifiques est quatre fois moins important, toutes proportions gardées, que dans la plupart des autres pays dits avancés.

Enfin, malgré les progrès technologiques qui ont fait le succès de sociétés comme Bombardier, Canadair ou Northern Telecom, notre potentiel en recherche demeure singulièrement maigre. Dans une économie qui — hormis le secteur primaire — demeure un monde de PME, 98 pour 100 des entreprises ne prennent même pas la peine de se doter d'un seul chercheur. On se contente d'y copier des technologies surannées ou venues d'ailleurs. Pas étonnant que, sur les étalages de produits sophistiqués, on trouve plus souvent la mention « made in Japan » que celle « fabriqué au Canada »!

Dans son contexte libre-échangiste, le Canada risquait donc de sombrer, en tant que nation industrielle développée. Et de se voir ravalé au rang d'un Wyoming ou d'un Idaho nordique.

C'est pourquoi l'intervention fédérale est plus que bienvenue; elle est vitale. Il faut que l'État prenne, un temps du moins, la place des entreprises privées qui n'osent, ou ne peuvent, investir dans la recherche et le développement. Il faut en outre s'assurer que les fonds alloués soient affectés véritablement à des programmes scientifiques.

Car ce n'est pas la première fois que, dans la capitale fédérale, on tente de relancer sciences et technologies. Il y a quelques années, le ministre des Finances d'alors, Marc Lalonde, avait proposé aux entreprises un crédit d'impôt plantureux, juste pour ça. Hélas, \$2.6 milliards de fonds publics plus tard, le gouvernement réalisait qu'il avait surtout financé des centres-bidons, des sociétés de mascarade, de la recherche en trompe-l'oeil.

Cette fois-ci, l'effort semble mieux amorcé. Car ce que propose Brian Mulroney, c'est de créer des centres régionaux d'excellence à travers le pays, en s'associant avec les communautés universitaires. Ainsi, on est davantage assuré d'obtenir des résultats concrets, à la mesure des sommes investies.

À ce sujet, il importe que les universités québécoises prennent vite le coche, proposent à Ottawa des projets qui, faute de sous, dormaient sur les tablettes, s'affirment comme des leaders en technologies. L'argent sera disponible, qu'on sache en profiter. ●

Le Québec sera choyé par le nouveau ministère de l'Industrie et des Sciences

♦TORONTO (PC) — Le Québec fera l'objet d'une attention particulière de la part du nouveau ministère de l'Industrie, des Sciences et de la Technologie, a affirmé hier son titulaire, M. Robert de Cotret.

Aux bureaux régionaux qui seront mis sur pied par le nouveau ministère sera superposée une structure additionnelle chargée de superviser le développement régional dans la province.

De telles structures régionales seront également établies en Ontario, a indiqué M. de Cotret.

« La responsabilité du développement régional en Ontario et au Québec, a-t-il déclaré, sera conférée à des bureaux régionaux distincts des bureaux du nouveau ministère, afin de faire en sorte que les responsables y travaillant puissent se concentrer sur leur région géographique respective. »

Cette mesure semble à première vue destinée à calmer les critiques soulevées au Québec à la suite de la décision fédérale de démanteler le ministère de l'Expansion industrielle régionale et de mettre sur pied l'Agence des perspectives de l'At-

lantique et le Bureau de diversification économique de l'Ouest.

Cette restructuration de l'activité fédérale en matière de développement régional avait entraîné l'été dernier de nombreux délais dans l'octroi de subventions à l'industrie au Québec.

Le nouveau ministère naîtra de la fusion de l'Expansion industrielle régionale, qui se trouve sous la responsabilité de M. de Cotret, et de l'actuel ministère d'Etat aux Sciences et à la Technologie, dont le portefeuille appartient à M. Frank Oberle.

« Une des principales fonctions du ministère consistera à favoriser le développement des technologies stratégiques, soit la biotechnologie, l'informatique et les nouveaux matériaux industriels », a déclaré le ministre.

M. de Cotret a affirmé que le nouveau ministère témoignait d'abord et avant tout « d'un changement d'orientation fondamental ».

Il ne sera plus question pour le gouvernement, a laissé entendre le ministre, de porter à bout de bras des projets industriels non rentables. ●

Research funding receives poor reviews

By LES WHITTINGTON
Southam News

TORONTO — Prime Minister Brian Mulroney sought Wednesday to fulfil a four-year-old election pledge by providing an additional \$1.3 billion for Canada's crucial research and development efforts.

Mulroney made the announcement at a conference of experts from business, government, labor and universities hoping to solve the country's lagging technological capacities.

But the new federal financing — which amounts to only \$260 million annually over five years — received poor reviews.

The government's policy is "a lot of smoke and mirrors" that does little to improve the situation, remarked industry spokesman John Reid.

"We're probably at the status quo position of 1984" when the Conserva-



MULRONEY

development.

Canada has long been singled out for its low spending in this area, widely seen as the key to creating a healthy economy and worthwhile jobs in the decades ahead.

During the 1984 election, Mulroney promised to double Canada's spending on research and development to 2.5 per cent of gross

tives took office, said Reid, an official of the Canadian Advanced Technology Association. The group is the national representative of companies doing high-technology research and

national product (the sum of goods and services produced). But more than three years later, the figure remains at 1.3 per cent of GNP.

Frank Oberle, the federal junior science minister, conceded the new funding will not do much to improve Canada's poor world ranking in this area. But Oberle said the problem is that business has been "very, very slow" to pour in its own money.

Mulroney said the new funding will provide scholarships of \$2,000 each for 2,500 university students annually. The government also plans to spend about \$250 million a year to set up networks of researchers and scientists at universities.

NDP science critic Howard McCurdy said the funding is trivial. "Mulroney's only doing something to cover himself on his original promise," McCurdy said.

L'aide fédérale à la recherche scientifique

Le milliard de Mulroney profitera aux universités

♦TORONTO (PC) - Le gouvernement fédéral consacrera une somme additionnelle de \$1.3 milliard au cours des cinq prochaines années dans le domaine des sciences et de la technologie.

Ces fonds nouveaux sont destinés, a déclaré, hier, le premier ministre à l'ouverture de la Conférence nationale sur la technologie et l'innovation à Toronto, à aider le Canada à combler le retard qu'il accuse face aux autres pays occidentaux sur les plans technologiques et scientifiques.

Les fonds, a indiqué M. Mulroney, seront principalement destinés aux universités canadiennes. Mais, ni le premier ministre, ni son ministre Robert de Cotret, n'ont pu préciser exactement quels montants seraient versés aux institutions universitaires au chapitre de la recherche et du développement.

La principale initiative mise de l'avant par M. Mulroney prévoit la création de « centres d'excellence » sur les campus universitaires.

L'objectif du nouveau programme consistera, a dit M. Mulroney, « à établir à la grandeur du pays des réseaux de chercheurs et de scientifiques de premier ordre dans des domaines d'importance cruciale pour la compétitivité du Canada à long terme ».

En conférence de presse, M. de Cotret a affirmé ne pas savoir combien de centres d'excellence seront mis sur pied ni quelles sommes y seront affectées.

Le gouvernement compte former un jury d'experts indépendants qui seront chargés de conseiller le gouvernement sur l'établissement de ces centres.

Une partie de l'argent sera d'autre part versée à un programme de bourses d'études en sciences, en génie et dans les disciplines connexes.

Des bourses d'environ \$2,000 seront annuellement accordées à 2,500 étudiants universitaires, a indiqué M. de Cotret.

Dans son discours prononcé à l'ouverture de la conférence, M. Mulroney a souligné que le nombre de diplômés universitaires dans le domaine scientifique stagnait depuis 1970.

Hier encore, M. Mulroney a souligné que « l'aide financière du secteur privé ne représente que 1 pour 100 des revenus des universités au Canada ».

En 1986, a-t-il mentionné, le Canada a accusé un déficit commercial dans toutes les catégories de produits de hautes technologies, accumulant un solde déficitaire de \$7 milliards.

Les chiffres pour 1987 indiquent néanmoins que le gouvernement fédéral et les industries ont contribué à part quasi égale (environ 42 pour 100 chacun) au financement de la recherche scientifique et technologique.

Ce qu'il faut, a dit le premier ministre, c'est créer « une culture » des sciences et de la technologie.

La somme de \$1.3 milliard, dont une partie sera disponible dès cette année, ira s'ajouter aux quelque \$4.1 milliards consacrés annuellement par Ottawa à la recherche et au développement.

Libéraux et néo-démocrates n'ont pas été particulièrement impressionnés par les nouvelles initiatives conservatrices.

Participant à la conférence, le dé-

puté néo-démocrate Howard McCurdy et son collègue libéral David Berger ont estimé que le \$1.3 milliard n'aiderait que marginalement le Canada à combler son retard technologique.

Attitudes

M. McCurdy a affirmé avoir particulièrement apprécié le discours prononcé dans le cadre de la conférence par le président du conseil d'administration de Provigo, M. Pierre Lortie.

« Le monde n'est pas en mutation, il a déjà changé », a fait valoir M. Lortie, qui déplore les « graves déficiences » du Canada en matière de développement technologique.

« Ce dont nous avons besoin, ce ne sont pas seulement quelques dollars de plus pour financer certains

projets scientifiques, mais surtout une modification profonde de nos attitudes à l'égard de la technologie et une reconnaissance non équivoque de son rôle fondamental dans l'amélioration qualitative et quantitative de notre niveau de vie. »

M. Lortie dirige l'un des comités formés par le Conseil consultatif national des sciences et de la technologie. Ce conseil est sous la présidence de M. Mulroney.

Dans un rapport publié en début de semaine, le comité de M. Lortie proposait de doubler les budgets des trois organismes fédéraux chargés de subventionner les projets de recherche et de développement au Canada. Une telle initiative coûterait \$500 millions au gouvernement sur trois ans. ●

Feds find funds for research

TORONTO (CP) - Prime Minister Brian Mulroney opened a conference of technology and innovation yesterday by announcing \$1.3 billion in funding for science and technology during the next five years.

The funds will pay for regional centres of excellence on university campuses, he said.

"The broad purpose of the program is to establish networks of researchers and scientists across the country to conduct world

class research in areas crucial to Canada's long term competitiveness," he said.

An independent jury of internationally recognized experts will recommend where the centre will be established.

Robert de Cotret, minister of regional industrial expansion, Frank Oberle, minister of state for science and technology, and David Crombie, secretary of state, will be responsible for implementing the plan.

PM announces science funds

TORONTO (CP) - The federal government's pledge to spend \$1.3 billion dollars on science and technology is not a pre-election goodie, but part of a "serious national initiative," Prime Minister Brian Mulroney said yesterday.

"It's not electioneering at all," Mulroney told reporters after speaking to the national conference on technology and innovation.

The five-year program, announced at the opening of the three-day conference, "was the followup to a lengthy period of consultation I've had as chairman of the National Advisory Board on Science and Technology," Mulroney said.

Members of the board, established last year, "spent hours together... in relative

obscurity trying to plan the kinds of programs we're bring forward now."

Mulroney's speech to about 200 leaders in business, science and industry, was peppered with Tory achievements and a plug for free trade.

A jury of experts will recommend setting up regional centres of excellence on university campuses and scholarships in science and engineering for 2,500 students across the country a year.

Reaction to the announcement was mixed, with some delegates calling it a step in the right direction and others saying it was simply inadequate.

The funding "is a trivial contribution to the need" and "sounded very much like a cam-

paign speech," said Howard McCurdy, NDP science critic.

The prime minister is trying to "cover himself" on his 1984 election promise to increase funding for research and development to 2.5 per cent of the gross national product, said McCurdy.

"The \$1.3-billion comes out to a little over \$200 million a year and that really is trivial even in terms of what he (Mulroney) wants to accomplish."

Mulroney neglected the high-school system and any mention of increasing operating grants for universities," he added.

Larkin Kerwin, president of the National Research Council, said the program is a good beginning, but noted that the money falls short of Mulroney's promise to double R and D funding.

PM pledges \$1.3 billion for research

By John Douglas
Winnipeg Free Press

TORONTO — The federal government plans to inject \$1.3 billion over the next five years into Canada's sagging research and development effort.

Prime Minister Mulroney opened the first-ever national conference on science and technology yesterday by announcing initiatives to concentrate special research and development efforts at a select group of universities.

As well, Mulroney called for a new scholarship program for 2,500 science and engineering students entering post-second

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ary institutions.

Although few details were given yesterday, Science Minister Frank Oberle said he hopes between \$250 million and \$300 million will be allocated to specific universities for research in specialized fields in the next five years.

He said he hopes students across Canada with special talents in engineering and science will begin receiving \$2,000 scholarships under the new program before the next school year.

Speaking to the 200 conference delegates in an opening address, Mulroney painted a bleak picture of research and development in Canada after what he called years of neglect.

Only two per cent of Canadian industries conduct any research while 80 per cent of manufactured goods used by industry are imported.

Mulroney said the new money is a Tory pledge of support for the future of Canadian technology.

"We must, as a country, become known not only for the wealth of our natural resources, but for the richness of our intellectual potential."

But yesterday's billion-dollar pledge comes nowhere near fulfilling a 1984 election promise to double research and development spending to 2.5 per cent of the gross national product, a figure comparable to that of Canada's trading partners.

Static level

Instead, the funding level has remained static at about 1.3 per cent of GNP for the last three years.

The Mulroney government has slashed the National Research Council's 1987 operating budget and has frozen grant budgets for two years.

Even with the new money, such

spending as a percentage of GNP has risen only minutely, said research council president Larkin Kerwin.

"The preliminary announcement of \$1.3 billion will raise the resources we put in science and technology from 1.3 per cent to 1.33 per cent, so

we still have a long way to go to get to 2.5 per cent or some such number to be on par with our trading adversaries," he said.

Kerwin estimated Mulroney would have had to increase science funding by about \$10 billion to fulfil his 1984 promise.

The vague announcement, not reinforced by any firm plan, had government opponents claiming it was little more than a pre-election ploy.

Robert de Cotret, minister responsible for regional industrial expansion, and Oberle could not give even

a brief outline of the government's plan for the money.

They could not explain how much money would be spent in any one area, when it would be spent, when it would begin to flow or how the universities would be selected.

Oberle said the money has not

been earmarked because it will depend on how industry responds to the new capital.

He said private industry has already pledged \$335 million for university research in the next five years if Ottawa matches funds.

He said the universities would be selected by an international panel with an arms-length relationship with the government, but he could not name anyone who would be on it.

Five centres

He said no decision has been made on the number of centres to be given the special designation, although federal officials say there will be five, including one in British Columbia and another in Saskatchewan.

Liberal science critic Bill Rompkey said the lack of a plan is proof the Tories are throwing money into research only because an election is around the corner.

Howard McCurdy, the New Democratic Party science critic, called the sum a trivial amount for a staggering problem.

Industry and education spokesmen were puzzled about the significance of the announcement.

Stuart Smith, president of Rockcliffe Research and Technology Inc., said it was a good start and praised the move to encourage engineering and science students, but added the government would need 10 times the amount it has pledged to turn things around.

Pierre Belanger, dean of engineering at McGill University in Montreal, said the plan will put universities that aren't given special status at a competitive disadvantage.

"You can say the rich will get richer," he said. "Those that have well-established, well-structured facilities will be in a better position to get something from this program than those who start from further back."

University shutout predicted

By John Douglas
Winnipeg Free Press

TORONTO — Manitoba universities will not be included in a new federal plan to fund special research projects announced yesterday, federal sources say.

The boycott will transform the universities of Manitoba, Winnipeg, and Brandon into mere truck stops on the super highway of high technology, one university spokesman said.

Soon after Prime Minister Mulroney announced a \$1.3-billion program to upgrade Canada's research program, two independent federal sources confirmed that Manitoba's universities have been left out of the plan.

The program would see \$300 million go directly to so-called centres of excellence — universities given special status for re-

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Pawley blamed for loss of federal research funds

continued from page 1

search and development in specific areas — during the next five years.

The sources say Mulroney already has promised Saskatchewan Premier Grant Devine that a Western centre for agriculture will be located at the University of Saskatchewan.

"The decision has been made by higher-ups," one source said. "Manitoba would not have gotten the centre even if it wasn't promised to Devine.

"Provincially the political picture is wrong."

Another source said the Tories have decide they are not going to give Howard Pawley's NDP government anything it doesn't have to.

"Let's face it," the source said under pretence of not being identified. "With Pawley in government there doing the things he is, the prime minister would be crazy to ignore two Conservative governments in Alberta and Saskatchewan.

"It could be a while before Pawley gets anything from Ottawa."

An aide to Manitoba Education Minister Roland Penner said late yesterday that Penner would have no comment until he received official confirmation that the University of Saskatchewan had been picked.

"If it proves true, (Penner) told me to tell you he will have plenty to say about it then," Dave Church said.

Oberle said the centres will not be picked on political grounds but rather by an independent arms-length panel of experts. He said the cabinet will not overturn any of the panel's decisions.

"There will be criteria set out and then it will be up to them to decide what institutions are best suited for the program," he said.

Oberle said Manitoba warrants consideration as an agricultural centre as well as a biotechnical research facility and robotics centre.

But one source said the criteria will include regional distribution and could be framed in such a way to squeeze Manitoba out if Saskatchewan is selected.

"There has to be a centre for western agriculture and if worded properly the selection committee is going to choose U of S over the University of Manitoba."

Arnold Naimark, president of the University of Manitoba said yesterday he will wait to see what Ottawa does before responding.

He said if the government allows centres of excellence to emerge from natural research practice, Manitoba would most probably receive federal funding.

"One of the problems we would face is if the centre's support were very tightly linked to industrial participation," he said. "What concerns me is that there will be criteria established for supporting centres of excellence which have more to do with political and financial clout than they do with research excellence."

Research aid falls flat

By Les Whittington

(Southam News)

TORONTO — Prime Minister Brian Mulroney sought Wednesday to fulfil a four-year-old election pledge by providing an additional \$1.3 billion for Canada's crucial research and development efforts.

Mulroney made the announcement at a conference of experts from business, government, labor and universities hoping to solve the country's lagging technological capacities.

But the new federal funding — which amounts to only \$260 million annually over five years — received poor reviews.

The Mulroney government's policy is "a lot of smoke and mirrors" that does little to improve the situation, remarked industry spokesman John Reid.

"We're probably at the status quo position of 1984" when the Conservatives took office, said Reid, an official of the Canadian Advanced Technology Association. The group is the national representative of companies doing high-technology research and development.

Canada has long been singled out for its low spending in this area, which is widely seen as the key to creating a healthy economy and worthwhile jobs in the decades ahead.

During the 1984 election, Mulroney promised to double Canada's spending on research and development to 2.5 per cent of gross national product (the sum of goods and services produced). But more than three years later, the figure remains at 1.3 per cent of GNP.

Reid also said the climate for increased business spending on high-technology research has been damaged by tougher rules in Finance Minister Michael Wilson's tax reform package.

Frank Oberle, the federal junior science minister, conceded the new funding will not do much to improve Canada's poor world ranking in this area.

Among the seven largest industrial democracies, Canada spends the least on research and development.

However, Oberle said the problem is that business has been "very, very slow" to pour in its own money.

Mulroney said the new funding will provide scholarships of \$2,000 each for 2,500 university students annually.

The government also plans to spend about \$250 million a year to set up a handful of so-called centres of excellence — networks of researchers and scientists — on university campuses.

Other initiatives are planned but the government wouldn't provide details. The program is expected to be established before September.

"We have not made all the progress hoped for" in the science and technology area, Mulroney said in his keynote address to the conference.

But, he added, "it is mindless for government to blame industry, for industry to blame government, or both to reproach the universities for Canada's failure to achieve its potential in technology and innovation."

In future, Canada must become known "not only for the wealth" of its natural resources but also "for the richness of our intellectual potential."

Seventh and holding

Let's say that this time what Prime Minister Brian Mulroney promises is what Canadians get. In this case, the federal government will inject 1.3 billion absolutely new dollars into scientific research and technological development in the country over the next five years. The promise was made earlier this week at a national conference on science and technology in Toronto.

Set aside the fact that after being elected in 1984, the Progressive Conservative government promised to double R&D spending by 1990 to 2.5 per cent of gross national product. (It stands at 1.34 per cent.) In Mulroney's words, that would "make up the ground lost through 15 years of (Liberal governments') negligence."

Set aside the fact that since his 1984 promise, Mulroney has cut the budget of the National Research Council, capped the base budgets of the research granting councils and limited tax credits to companies conducting research.

Forget that science, academic, business and economic organizations have been calling for massive injections of R&D funding because they believe it critical to Canada's future capabilities to compete.

Set aside that during this government's term of office Canada has dropped to seventh and last place in research and development spending among the Group of Seven industrialized nations. The other members are Japan, United States, Great Britain, West Germany, France and Italy.

Instead, let's just look at the announcement as a certain infusion of \$260 million a year into a badly needed sector of the economy — the creation of a series of centres of excellence across the country, a national scholarship program and whatever else. And a boost to the long-awaited national conference.

It is welcome. And it still leaves Canada in seventh place.

Scientists miffed at being left out of conference

By Anne McIlroy
Citizen staff writer

More than 10,000 federal scientists and engineers are "astounded and dismayed" they weren't invited to Brian Mulroney's national conference on science and technology in Toronto.

"How is it then that the government has deliberately chosen to ignore a group of key players in Canada's research and development effort?" said Iris Craig, president of the union that represents the researchers.

More than 200 research and technology experts, mostly from the private sector and universi-

ties, are at the three-day event, promised in the October 1986 Throne Speech.

It is costing the government \$1 million, and is aimed at establishing a science and technology strategy to take Canada into the next century. The conference ends today.

In a press release, Craig said she wrote to Mulroney to ask that federal scientists be represented at the conference, but received no reply.

The Prime Minister's Office refused to comment.

The federal government was to announce at the conference it is spending \$10 million to make Canadians more aware of the

importance of science and technology.

Half of the money will go to a general public-awareness program, the other half to non-government groups that promote science and technology, said Richard Fallis, a spokesman for Science Minister Frank Oberle.

Wednesday, Mulroney announced \$1.3 billion in extra support for research in Canada.

The prime minister said the new funding will provide scholarships of \$2,000 each for 2,500 university students annually.

The government also plans to spend about \$250 million a year over five years to set up a hand-

ful of so-called centres of excellence — networks of researchers and scientists — on university campuses.

In Ottawa, university officials gave the new research fund a lukewarm welcome.

They said not enough details of the program were released, making it difficult to evaluate how significant the extra money would be.

Sydney Wise, dean of graduate studies and research at Carleton University, is worried Ontario universities won't get a fair crack at the "centres of excellence" money because the provincial government established seven such centres last year.

Sciences et technologie: une campagne calquée sur Participation

Guy Taillefer
Presse Canadienne
TORONTO

Le gouvernement fédéral a annoncé hier, dans le domaine des sciences et de la technologie, la mise en oeuvre d'une campagne de sensibilisation, calquée sur le modèle du programme Participation.

Dans un discours prononcé dans le cadre de la Conférence nationale sur la technologie et l'innovation, qui prend fin ce midi à Toronto, le ministre d'État Frank Oberlé a indiqué que \$10 millions seraient consacrés à cette campagne au cours des prochaines années.

«Trop nombreux sont les Canadiens qui voient la technologie comme une menace à leur sécurité d'emploi», a déclaré le ministre d'État aux Sciences et à la Technologie.

Le gouvernement conservateur aura fait tomber une pluie de millions pendant cette conférence réunissant quelque 200 intervenants des milieux

industriels, universitaires et gouvernementaux.

Les principaux syndicats du pays ont boycotté la réunion de trois jours, qui avait été convoquée par le premier ministre Brian Mulroney.

Mercredi, à l'ouverture de la conférence, M. Mulroney annonçait que le gouvernement dépenserait \$1.3 milliard au cours des cinq prochaines années afin de stimuler la recherche universitaire dans les domaines technologiques et scientifiques.

L'annonce a été généralement bien accueillie par les participants.

Mais au moins un des délégués, M. Georges Hanza, de l'Institut Gamma, a exprimé certaines réserves, reprochant au gouvernement fédéral de mettre tous ses oeufs dans le même panier.

Les centres d'excellence que se propose de créer le gouvernement fédéral, dans le cadre de son nouveau programme, ne devraient pas être réservés aux milieux universitaires, a af-

firmé M. Hanza en entrevue.

«Je reste convaincu qu'on ne peut pas vraiment parler de centres d'excellence sans y faire participer aussi les agents des domaines industriels et gouvernementaux», a déclaré le porte-parole de l'institut Gamma, qui est basé à Montréal. L'institut est un centre de recherche inter-universitaire.

M. Hanza invite le gouvernement à élargir son discours afin que tous les intervenants puissent participer à la «course à l'innovation».

Il craint cependant que la volonté politique des conservateurs en matière technologique ne soit pas assez puissante pour surmonter les obstacles bureaucratiques.

«On a trop souvent l'impression que le Canada est géré par les fonctionnaires plutôt que par les politiciens.»

Réactions québécoises.

Un haut fonctionnaire du gouvernement québécois, M. Pierre Cou-

lombe, sous-ministre adjoint au ministère du Commerce extérieur et du Développement technologique, a pour sa part qualifié d'excellente l'initiative annoncée par M. Mulroney.

Il a estimé qu'elle s'inscrivait dans la continuité de la politique appliquée par le Québec à ce chapitre.

Une cinquantaine d'équipes de chercheurs spécialisés ont été formées depuis deux ans dans les universités québécoises, a-t-il dit.

M. Coulombe a soutenu que le Québec faisait amplement sa part en matière de recherche et de développement.

Les statistiques les plus récentes indiquent que le Québec était en 1985 la province à dépenser le plus dans ce domaine, a-t-il soutenu. Il a dépensé \$159 millions, contre seulement \$111 par l'Ontario.

Le ministre du Commerce extérieur et du Développement technologique, M. Pierre MacDonald, devait participer à la conférence, mais a dû se désister pour cause de maladie.

High-tech delegates await more support from Ottawa

By Andrea Gordon Toronto Star

Prime Minister Brian Mulroney's presence at this week's high-tech conference will raise the profile of science and technology in Canada, say delegates. But they say Ottawa now has to back that up with other actions.

"We now have the Prime Minister's attention and the attention of many of his cabinet ministers," said Denzil Doyle, consultant and president of Doyletech Corp. in Kanata.

"The question is, now is he going to make the fundamental changes inside the bureaucracy."

Right direction

Mulroney opened the three-day conference on Wednesday with a pledge of an additional \$1.3 billion for research over the next five years.

That announcement was greeted as a step in the right direction but not nearly enough to keep Canada competitive in terms of research spending.

Some delegates said the money simply makes up for earlier government cutbacks that hurt research and development.

Doug Barber, president of Gennum Corp., said although government talk is encouraging,

he wants to see much more support for industrial research through such measures as tax incentives and procurement policies. Barber also sits on the board of the Electrical and Electronic Manufacturers' Association of Canada.

While Ottawa is placing much of the responsibility for research on the private sector, Canada's leading competitors all have significantly more government help than Ottawa is providing, Barber said.

The three-day event, at which Mulroney was host, cost the government \$1 million. It was promised in the October, 1986, Throne Speech to bring industry, government and research communities together to develop a technology strategy for the country.

Billed as a working conference, the event is devoted largely to workshops on such issues as using technology to revitalize traditional industries and develop new products and how to encourage new high-tech firms.

The 200 delegates were divided up into groups of 20 and workshop leaders will present their recommendations to the Prime Minister today. Mulroney announced the \$1.3 billion even be-

fore delegates had begun their discussions.

Delegates say that, at the very least, the fact that Mulroney is host at the event will raise the profile of science and technology in Canada.

And they're willing to put up with politicking as long as the message gets out that Canada needs to perform better in technology to keep the economy growing and remain competitive in world markets.

"I'm willing to put up with the political overtones of the thing if we truly have the attention of our politicians and if it's going to trickle down to the bureaucrats," said Doyle.

Outspoken critic

Stuart Smith, former chairman of the Science Council of Canada and an outspoken critic of Ottawa's science policy, said the conference is a positive step.

"The Prime Minister has identified himself with the issue and that's very important in this country," said Smith, also former Ontario Liberal leader.

"I think you take it as a given that the government is going to make the maximum political gain, and I think we can accept that."

Ottawa répartira les « centres d'excellence » à travers le pays

GILLES GAUTHIER

TORONTO

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Le premier ministre Mulroney a déclaré qu'il ne faut pas que les centres soient tous aménagés dans une grande métropole « en excluant l'Atlantique et l'Ouest par exemple. Il faut qu'il y ait une égalité régionale. C'est un facteur important ».

Il n'en demeure pas moins que 106 des quelque 225 personnes qui participent aux délibérations de la conférence sur la technologie et l'innovation à Toronto viennent de l'Ontario alors que 45 sont du Québec. Les huit autres provinces comptent environ 75 participants. Cette conférence

nationale a été convoquée par M. Mulroney.

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Ottawa accordera un appui aux projets et aux activités mis en oeuvre par des organismes non gouvernementaux et visant la sensibilisation du public. Une campagne nationale à long terme sera également financée par le fédéral.

La campagne « rassemblera, a dit M. Oberle, au programme Participation » et elle atteindra « chaque foyer, salle du conseil, salle de syndicat, salle de récréation et salle de classe du pays ».

Le premier ministre Mulroney reçoit cet après-midi à Toronto son homologue japonais Takeshita. Ils auront plusieurs entretiens lors de cette visite qui se termine demain midi.

Tories playing politics with science?

There's a catch, some might say a Catch 22, to Prime Minister Brian Mulroney's promise to spend an additional \$1.3 billion on science and technology over the next five years. Most of the extra spending is dependent on his government winning the election he must call by September 1989.

Strange, we thought the Conservatives already had a mandate to improve Canada's dismal record in research and development investment. In March 1984, Mulroney promised that R-and-D spending would be doubled, from 1.3 per cent of gross national product, during the first four years of a Conservative government. Six months later, he won a landslide election victory.

Now, more than three years later, R-and-D spending remains at about 1.3 per cent of GNP. And the promised new spending would only slightly improve that situation.

Mulroney said Wednesday that the first two projects to receive new financial support would be a national scholarship program and a series of "centres of excellence" to be established at universities across the country.

Universities say the the \$2,000-a-year, four-year scholarships for 2,500 students entering science and engineering each year are "a step in the right direction."

Under the centres of excellence program, individual universities across the country would be turned into specialist research sites. Each would concentrate on a specific type of research such as biotechnology, advanced industrial materials or information technology.

Details such as the number of centres envisioned and how they would be selected were not provided. Announcements are to follow consultations with the provinces and industry as well as advice from an international advisory council — still to be named.

No doubt the locations of the centres will be determined in time to announce them, with great fanfare, during the next election campaign. We have no quibble with that political strategy if the centres are chosen rationally; they should reward academic prowess, not repay political debts.

Although the government has been slow to deliver on its promise to bolster R and D, it deserves some credit for moving science and technology up on the national agenda.

The volume of spending is not, of course, as important as its effectiveness. But so far the Conservatives haven't provided enough information to allow Canadians to decide whether its science and technology plans are good policy — or merely a political ploy.

Scientists miffed at being left out of conference

By Anne McIlroy
Citizen staff writer

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They said not enough details of the program were released, making it difficult to evaluate how significant the extra money would be.

Sydney Wise, dean of graduate studies and research at Carleton University, is worried Ontario universities won't get a fair crack at the "centres of excellence" money because the provincial government established seven such centres last year.

Universities fear research aid delay

By WILLIAM BOEI

B.C.'s cash-starved universities will compete for their share of \$1.3 billion in new federal spending on science and technology, but they fear they may have to wait out a federal election campaign before they see any money.

"It would be my judgment that maybe the election isn't all that far away, and who knows," University of B.C. president Dr. David Strangway said Thursday in Toronto, where he was attending a national conference on technology and innovation.

Prime Minister Brian Mulroney, who announced the new spending at the Toronto conference, had promised before the 1984 election to double spending on research and development, University of Victoria president Howard Petch recalled.

"The country is very behind in its research and development spending and this government pledged as an election issue to double it," Petch said. "But nothing has happened at all. . . I don't think there's been any improvement whatever, and I think in fact we've lost some ground. My reaction (to the latest promise) would be to wait and see what works out."

Canada's R&D spending was 1.37 per cent of gross domestic product in 1984. By 1986, it had slipped to 1.35 per cent. Last year's figure is not available yet.

Darlene Marzari, the B.C. New Democrats' spokesman for higher education, said Mulroney was "doing the same thing he did with day-care funding. He's making a promise that after the next election, there will be a program. It's very cynical."

Marzari said B.C. should "cadge as much of that federal money as we can," adding that the provincial government's first priority should be "to develop within B.C. a good planning mechanism for research dollars."

Strangway, Petch and Tom Calvert, Simon Fraser University's



STRANGWAY



PETCH



MARZARI

vice-president for research, said their universities will compete for the federal money, individually or as a group, as soon as the government sets out the rules.

But Petch and Calvert said tight government money — both provincial and federal — has eroded basic scientific research in recent years, and they worried that new funding for special projects could do more damage by diverting resources from basic research.

"There has been a real erosion of the base for scientific research . . . because the federal government has frozen the budgets of the (federal) granting agencies," Calvert said. "We are starving for research in the basic areas. That's very serious, and it's getting worse."

Strangway said the universities will have to keep the pressure on the provincial government "to keep that base structure strong and competitive."

Petch said "peaks" of excellence in scientific research can only be scaled "if you've got a pretty solid foundation."

"If you go to companies . . . they want to support things that are in their particular interest. It can lead to a rather disjointed and unbalanced development of the university."

He said federal research money, like corporate funding, traditionally

doesn't provide for indirect or infrastructure costs, such as support staff, laboratories, heat, light, power, supplies and some equipment. These add at least 40 per cent to research costs, and sometimes double them.

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Ottawa accordera un appui aux projets et aux activités mis en oeuvre par des organismes non gouvernementaux et visant la sensibilisation du public. Une campagne nationale à long terme sera également financée par le fédéral.

La campagne «ressemblera, a dit M. Oberle, au programme Participaction» et elle atteindra «chaque foyer, salle du conseil, salle de syndicat, salle de récréation et salle de classe du pays».

Le premier ministre Mulroney reçoit cet après-midi à Toronto son homologue japonais Takeshita. Ils auront plusieurs entretiens lors de cette visite qui se termine demain midi.

Scientists miffed at being left out of conference

By Anne McIlroy
Citizen staff writer

More than 10,000 federal scientists and engineers are "astounded and dismayed" they weren't invited to Brian Mulroney's national conference on science and technology in Toronto.

"How is it then that the government has deliberately chosen to ignore a group of key players in Canada's research and development effort?" said Iris Craig, president of the union that represents the researchers.

More than 200 research and technology experts, mostly from the private sector and universi-

ties, are at the three-day event, promised in the October 1986 Throne Speech.

It is costing the government \$1 million, and is aimed at establishing a science and technology strategy to take Canada into the next century. The conference ends today.

In a press release, Craig said she wrote to Mulroney to ask that federal scientists be represented at the conference, but received no reply.

The Prime Minister's Office refused to comment.

The federal government was to announce at the conference it is spending \$10 million to make Canadians more aware of the

importance of science and technology.

Half of the money will go to a general public-awareness program, the other half to non-government groups that promote science and technology, said Richard Fallis, a spokesman for Science Minister Frank Oberle.

Wednesday, Mulroney announced \$1.3 billion in extra support for research in Canada.

The prime minister said the new funding will provide scholarships of \$2,000 each for 2,500 university students annually.

The government also plans to spend about \$250 million a year over five years to set up a hand-

ful of so-called centres of excellence — networks of researchers and scientists — on university campuses.

In Ottawa, university officials gave the new research fund a lukewarm welcome.

They said not enough details of the program were released, making it difficult to evaluate how significant the extra money would be.

Sydney Wise, dean of graduate studies and research at Carleton University, is worried Ontario universities won't get a fair crack at the "centres of excellence" money because the provincial government established seven such centres last year.

High-tech delegates await more support from Ottawa

By Andrea Gordon Toronto Star

Prime Minister Brian Mulroney's presence at this week's high-tech conference will raise the profile of science and technology in Canada, say delegates. But they say Ottawa now has to back that up with other actions.

"We now have the Prime Minister's attention and the attention of many of his cabinet ministers," said Denzil Doyle, consultant and president of Doyletech Corp. in Kanata.

"The question is, now is he going to make the fundamental changes inside the bureaucracy."

Right direction

Mulroney opened the three-day conference on Wednesday with a pledge of an additional \$1.3 billion for research over the next five years.

That announcement was greeted as a step in the right direction but not nearly enough to keep Canada competitive in terms of research spending.

Some delegates said the money simply makes up for earlier government cutbacks that hurt research and development.

Doug Barber, president of Gennum Corp., said although government talk is encouraging,

he wants to see much more support for industrial research through such measures as tax incentives and procurement policies. Barber also sits on the board of the Electrical and Electronic Manufacturers' Association of Canada.

While Ottawa is placing much of the responsibility for research on the private sector, Canada's leading competitors all have significantly more government help than Ottawa is providing, Barber said.

The three-day event, at which Mulroney was host, cost the government \$1 million. It was promised in the October, 1986, Throne Speech to bring industry, government and research communities together to develop a technology strategy for the country.

Billed as a working conference, the event is devoted largely to workshops on such issues as using technology to revitalize traditional industries and develop new products and how to encourage new high-tech firms.

The 200 delegates were divided up into groups of 20 and workshop leaders will present their recommendations to the Prime Minister today. Mulroney announced the \$1.3 billion even be-

fore delegates had begun their discussions.

Delegates say that, at the very least, the fact that Mulroney is host at the event will raise the profile of science and technology in Canada.

And they're willing to put up with politicking as long as the message gets out that Canada needs to perform better in technology to keep the economy growing and remain competitive in world markets.

"I'm willing to put up with the political overtones of the thing if we truly have the attention of our politicians and if it's going to trickle down to the bureaucrats," said Doyle.

Outspoken critic

Stuart Smith, former chairman of the Science Council of Canada and an outspoken critic of Ottawa's science policy, said the conference is a positive step.

"The Prime Minister has identified himself with the issue and that's very important in this country," said Smith, also former Ontario Liberal leader.

"I think you take it as a given that the government is going to make the maximum political gain, and I think we can accept that."

Tories playing politics with science?

There's a catch, some might say a Catch 22, to Prime Minister Brian Mulroney's promise to spend an additional \$1.3 billion on science and technology over the next five years. Most of the extra spending is dependent on his government winning the election he must call by September 1989.

Strange, we thought the Conservatives already had a mandate to improve Canada's dismal record in research and development investment. In March 1984, Mulroney promised that R-and-D spending would be doubled, from 1.3 per cent of gross national product, during the first four years of a Conservative government. Six months later, he won a landslide election victory.

Now, more than three years later, R-and-D spending remains at about 1.3 per cent of GNP. And the promised new spending would only slightly improve that situation.

Mulroney said Wednesday that the first two projects to receive new financial support would be a national scholarship program and a series of "centres of excellence" to be established at universities across the country.

Universities say the the \$2,000-a-year, four-year scholarships for 2,500 students entering science and engineering each year are "a step in the right direction."

Under the centres of excellence program, individual universities across the country would be turned into specialist research sites. Each would concentrate on a specific type of research such as biotechnology, advanced industrial materials or information technology.

Details such as the number of centres envisioned and how they would be selected were not provided. Announcements are to follow consultations with the provinces and industry as well as advice from an international advisory council — still to be named.

No doubt the locations of the centres will be determined in time to announce them, with great fanfare, during the next election campaign. We have no quibble with that political strategy if the centres are chosen rationally; they should reward academic prowess, not repay political debts.

Although the government has been slow to deliver on its promise to bolster R and D, it deserves some credit for moving science and technology up on the national agenda.

The volume of spending is not, of course, as important as its effectiveness. But so far the Conservatives haven't provided enough information to allow Canadians to decide whether its science and technology plans are good policy — or merely a political ploy.

Sciences et technologie: une campagne calquée sur Participaction

Guy Taillefer
Presse Canadienne
TORONTO

Le gouvernement fédéral a annoncé hier, dans le domaine des sciences et de la technologie, la mise en oeuvre d'une campagne de sensibilisation, calquée sur le modèle du programme Participaction.

Dans un discours prononcé dans le cadre de la Conférence nationale sur la technologie et l'innovation, qui prend fin ce midi à Toronto, le ministre d'État Frank Oberlé a indiqué que \$10 millions seraient consacrés à cette campagne au cours des prochaines années.

«Trop nombreux sont les Canadiens qui voient la technologie comme une menace à leur sécurité d'emploi», a déclaré le ministre d'État aux Sciences et à la Technologie.

Le gouvernement conservateur aura fait tomber une pluie de millions pendant cette conférence réunissant quelque 200 intervenants des milieux

industriels, universitaires et gouvernementaux.

Les principaux syndicats du pays ont boycotté la réunion de trois jours, qui avait été convoquée par le premier ministre Brian Mulroney.

Mercredi, à l'ouverture de la conférence, M. Mulroney annonçait que le gouvernement dépenserait \$1.3 milliard au cours des cinq prochaines années afin de stimuler la recherche universitaire dans les domaines technologiques et scientifiques.

L'annonce a été généralement bien accueillie par les participants.

Mais au moins un des délégués, M. Georges Hanza, de l'Institut Gamma, a exprimé certaines réserves, reprochant au gouvernement fédéral de mettre tous ses oeufs dans le même panier.

Les centres d'excellence que se propose de créer le gouvernement fédéral, dans le cadre de son nouveau programme, ne devraient pas être réservés aux milieux universitaires, a af-

firmé M. Hanza en entrevue.

«Je reste convaincu qu'on ne peut pas vraiment parler de centres d'excellence sans y faire participer aussi les agents des domaines industriels et gouvernementaux», a déclaré le porte-parole de l'Institut Gamma, qui est basé à Montréal. L'institut est un centre de recherche inter-universitaire.

M. Hanza invite le gouvernement à élargir son discours afin que tous les intervenants puissent participer à la «course à l'innovation».

Il craint cependant que la volonté politique des conservateurs en matière technologique ne soit pas assez puissante pour surmonter les obstacles bureaucratiques.

«On a trop souvent l'impression que le Canada est géré par les fonctionnaires plutôt que par les politiciens.»

Réactions québécoises.

Un haut fonctionnaire du gouvernement québécois, M. Pierre Cou-

lombe, sous-ministre adjoint au ministère du Commerce extérieur et du Développement technologique, a pour sa part qualifié d'excellente l'initiative annoncée par M. Mulroney.

Il a estimé qu'elle s'inscrivait dans la continuité de la politique appliquée par le Québec à ce chapitre.

Une cinquantaine d'équipes de chercheurs spécialisés ont été formées depuis deux ans dans les universités québécoises, a-t-il dit.

M. Coulombe a soutenu que le Québec faisait amplement sa part en matière de recherche et de développement.

Les statistiques les plus récentes indiquent que le Québec était en 1985 la province à dépenser le plus dans ce domaine, a-t-il soutenu. Il a dépensé \$159 millions, contre seulement \$111 par l'Ontario.

Le ministre du Commerce extérieur et du Développement technologique, M. Pierre MacDonald, devait participer à la conférence, mais a dû se désister pour cause de maladie.

Seventh and holding

Let's say that this time what Prime Minister Brian Mulroney promises is what Canadians get. In this case, the federal government will inject 1.3 billion absolutely new dollars into scientific research and technological development in the country over the next five years. The promise was made earlier this week at a national conference on science and technology in Toronto.

Set aside the fact that after being elected in 1984, the Progressive Conservative government promised to double R&D spending by 1990 to 2.5 per cent of gross national product. (It stands at 1.34 per cent.) In Mulroney's words, that would "make up the ground lost through 15 years of (Liberal governments') negligence."

Set aside the fact that since his 1984 promise, Mulroney has cut the budget of the National Research Council, capped the base budgets of the research granting councils and limited tax credits to companies conducting research.

Forget that science, academic, business and economic organizations have been calling for massive injections of R&D funding because they believe it critical to Canada's future capabilities to compete.

Set aside that during this government's term of office Canada has dropped to seventh and last place in research and development spending among the Group of Seven industrialized nations. The other members are Japan, United States, Great Britain, West Germany, France and Italy.

Instead, let's just look at the announcement as a certain infusion of \$260 million a year into a badly needed sector of the economy — the creation of a series of centres of excellence across the country, a national scholarship program and whatever else. And a boost to the long-awaited national conference.

It is welcome. And it still leaves Canada in seventh place.

Manitoba university left out of plans for federal project

WINNIPEG (CP) — Politics will keep a western centre for agriculture from being established at the University of Manitoba, a Winnipeg newspaper said Thursday.

The Winnipeg Free Press, quoting unnamed federal sources, said Prime Minister Brian Mulroney has promised Premier Grant Devine the centre will be established at the University of Saskatchewan, located in Saskatoon.

The fact that Manitoba Premier Howard Pawley is a New Democrat, and often critical of the federal government, is blamed at least partly for the decision.

Only last week Pawley once again lashed out at Mulroney and the federal Conservatives for the 1986 decision to award the CF-18 maintenance contract to Canadair Ltd., of Montreal instead of Bristol Aerospace Ltd. of Winnipeg, which was said to

have submitted a better bid.

Mulroney announced in Toronto Wednesday that the federal government plans to spend \$1.3 billion on science and technology over five years.

Part of that involves spending \$300 million to establish centres of excellence at Canadian universities.

Science Minister Frank Oberle said a panel of experts will decide where the centres should be located.

It's the old shell game for R & D

TORONTO — Prime Minister Brian Mulroney is fond of \$1-billion promises, and as long as they remain imprecise and fade into the distant horizon he can probably make many more. His five-year, \$1.3-billion fund for science and technology is so vague in concept it will be as difficult to trace as that other \$1-billion-plus promise, the Western Diversification Office, one of the more elaborate shell games visited on the public.

Conservatives will immediately protest that the two successive \$1-billion rescues of Canada's grain farmers, rather than being phantoms, are very real and are providing farmers with much-needed help.

Of course this is true. And the alternative to not offering aid would be a wave of farm bankruptcies and hopeless disaffection with Ottawa.

But grants paid as income support and those used as incentives to create new kinds of economic activity are two quite distinct categories. And in the Mulroney incentive programs there always seems to be much more illusion than substance.

It is becoming a rather predictable pattern. Mulroney announces a new fund for some worthy objective. Then the reporters find the responsible ministers strangely unable to offer more than the vaguest details about how the money will be spent.

So it was this week with the science and technology fund.



**Geoff
White**

This fund is to create "centres of excellence" at Canadian universities and finance scholarships for 2,500 students.

That's it. The sum total of the announcement. Not a jot of detail about how the money will be dispensed, what the objectives are, what kind of research the government wants to stimulate, how or whether it will be linked to industrial development or a any number of other matters that can be raised.

It is disappointing that so late in this term the prime minister has not accomplished more in the research and development sphere.

If there was one theme that stood out beyond the platitudes of his speeches, from the moment he became leader until his landslide election victory, it was that Canada needed a stronger research and development base.

If there was one thing that seemed certain the day after that stunning win, it was that Canada would soon have a vigorous, new R & D policy to catch up with the technological advances of other industrial countries.

The record of his government on this front has been abjectly inadequate.

Mulroney promised to double Canadian R & D spending to reach 2.5 per cent of the country's gross national product, the sum of all goods and services a country produces. The figure remains mired at 1.4 per cent, far below that of Canada's industrial competitors.

The government's sharp cuts to the budget of the National Research Council have not been compensated by smaller increases in the funds of federal research granting councils. In practice, high technology development has not been a major priority.

Admittedly there have been financial constraints.

The massive \$3-billion drain of the previous Liberal government's scientific research tax credit (SRTC) only became fully known in the Conservative government's early months.

But the announcement of this week demonstrates there has been little creative thinking done on the subject of an R

& D policy in the last three and a half years. Or if there has, it hasn't been heeded.

Despite the high profile Mulroney gave to his technology and innovation conference here, it is even questionable whether his heart is in the right place.

Is he in fact more interested in the appearance of progress on this front than in the real thing?

Perhaps, to be more charitable, he believes researchers and industry will be spurred on in their efforts just because he, the prime minister, has shown an ardent interest. A kind of leadership by example, in other words.

But, as shown elsewhere, heroic production advances can't be conjured, even though the leader takes his machete to the cane fields.

If any policy is going to truly have any meaning it is going to need a mix of the tried-and-true direct government spending, tax incentives and credits, and specific targets.

This sounds all too conventional, the sort of thing that warms the hearts of Liberals and their purported friends in the civil service.

But of such things are policies are made. And a vague promise of \$1.3 billion, having no clear outline and no apparent direction, is no substitute.

Appel à l'action en matière technologique

♦ La Conférence nationale sur la technologie et l'innovation, qui a pris fin hier midi, réunissait quelque 200 représentants des milieux industriel, universitaire et gouvernementaux.

Le gouvernement fédéral et l'industrie privée se sont mutuellement demandés de passer de la parole aux actes en matière technologique.

À la clôture de la réunion, le premier ministre Brian Mulroney a cependant indiqué que le processus consultatif allait se poursuivre. Il a annoncé que cinq conférences régionales, faisant suite à celle de Toronto, seraient organisées par le gouvernement fédéral en Colombie-Britannique, dans les Prairies, en Ontario, au Québec et dans l'Atlantique.

Il faut de toute urgence que le Canada rattrape le terrain perdu aux mains de ses concurrents occidentaux au plan technologique, ont répété à satiété les participants à la conférence.

Selon le président du Conseil national de recherche du Canada, M. Larkin Kerwin, il faudra compter entre 10 et 15 ans pour combler le fossé.

Sur le plan de la fiscalité, l'un des moyens de combler ce fossé, ont soutenu bon nombre de délégués, serait de rétablir certains avantages fiscaux destinés à favoriser la recherche et le développement.

L'ancien gouvernement libéral avait accordé de tels avantages aux entreprises. Ils ont été supprimés par les conservateurs après que l'on eut appris qu'ils étaient parfois utilisés comme échappatoires fiscales, plutôt que comme de véritables instruments de financement de la recherche scientifique.

M. Mulroney n'a pas exclu la possibilité de réviser la situation. **Signaux contradictoires**

L'industrie reçoit des signaux contradictoires de la part du gouvernement fédéral, a affirmé M. Larkin.

« D'un côté, les entreprises sont encouragées à faire davantage en matière de recherche et de développement. De l'autre, elle sont pénalisées sur le plan fiscal pour les efforts qu'elles déploient dans ce domaine », a dit M. Larkin.

Diverses mesures du ministre des Finances Michael Wilson ont durement frappé la recherche universitaire et celle qui est effectuée dans les laboratoires gouvernementaux.

« Les crédits d'impôt à la recherche scientifique ont été évoqués

avec nostalgie par les petites et moyennes entreprises », a affirmé Mme Rita-Dionne Marsolais, vice-présidente de l'Association nucléaire canadienne.

Les « centres d'excellence », dont la création a été annoncée à l'ouverture de la conférence par M. Mulroney, ont également fait l'objet de certaines critiques.

« Le régionalisme ne doit pas miner cette initiative », a déclaré M. David Hennigar, directeur de la compagnie Burns Fry, qui a dit s'inquiéter de la façon dont elle sera appliquée.

En annonçant la mise sur pied des centres de recherche universitaire, M. Mulroney s'est en effet engagé à respecter un critère d'égalité régionale dans le choix des endroits où ils seront installés.

M. Hennigar a, en outre, fait valoir que le développement technologique du Canada allait exiger davantage de flexibilité de la part des travailleurs et des syndicats.

Fait à noter, les principaux syndicats du pays n'ont pas participé à la conférence, à la suite d'un différend survenu entre Ottawa et la présidente du Congrès du travail du Canada, Mme Shirley Carr.

De façon générale, les délégués ont insisté sur la nécessité pour le Canada de faire un effort énorme en matière d'éducation et de sensibilisation.

À ce titre, le lancement d'une campagne de sensibilisation par le ministre d'État Frank Oberle, au coût de \$10 millions, a été favorablement accueillie par les participants.

La conférence aura, en outre, fait ressortir une insuffisance de collaboration entre l'industrie et le gouvernement, qui n'arrivent toujours pas à concerter leurs efforts en matière de développement technologique. ●

High-calibre rivals

BY JEFFREY SIMPSON

WINNIPEG

Unless the Mulroney government is supremely careful, mark my words, we're in for a first-class bun fight.

The \$250- to \$300-million the government has allocated for the creation of "centres of excellence" at Canadian universities risks becoming, in the finest tradition of our beloved land, the arena for fierce inter-regional and intra-regional fighting.

Universities across Canada are strapped for cash. British Columbia and Alberta universities, for example, have taken fiscal poundings from their provincial governments. The staff at the University of Manitoba is worried about what may hit it when the NDP government announces spending plans in the near future. Ontario universities have been grumbling for the last half-decade about underfunding.

In these circumstances, throw a big chunk of federal cash on the table and watch the buns fly.

A taste of what may lie ahead occurred within minutes of the government's announcement at the Science and Technology conference in Toronto. Unnamed federal officials, quoted by The Winnipeg Free Press, warned that Manitoba would likely get nothing. The paper reported that the Mulroney government is so angry at the NDP government in Winnipeg that no "centre of excellence" will be created at the province's three universities, Manitoba, Winnipeg and Brandon. Instead, the Prime Minister has already assured his buddy, Conservative Premier Grant Devine, that the University of Saskatchewan at Saskatoon will get money for agricultural research.

Future events may disprove the reported comments of these federal officials, but it doesn't take a genius to predict the buns that will fly around Winnipeg if Manitoba is shut out. After all, remember the fierce competi-

tion a few years ago among Prince Edward Island, Nova Scotia and New Brunswick when Ottawa announced that it would finance a veterinary college in the Maritimes.

Inter-provincial or inter-regional rivalries are bad enough, but they will be compounded by rivalries within provinces. Nova Scotia, for example, has an important technical college in Halifax, plus Dalhousie, St. Mary's, Acadia, the college at Cape Breton and St. Francis Xavier (the Prime Minister's alma mater), as well as two quite small colleges. Not all of them have graduate schools, but they all have ambitions.

On the prairies, rivalries abound between the two big universities in each province. The same goes for British Columbia's three universities and for the large ones in Quebec (McGill, l'Université de Montréal, Laval, l'Université du Québec and Sherbrooke). The situation in Ontario, with the largest number of universities in the country, is even worse.

The government insists a panel of international experts will suggest which universities deserve the "centres of excellence," the presumption being that politics or personal preference will not sully the decision.

Such a presumption deserves to be treated with guarded skepticism. Former prime minister Pierre Trudeau, for example, brought together some of the cream of Canada's architectural establishment to recommend the man to design Canada's new embassy in Washington. He then ignored their advice and chose Arthur Erickson of Vancouver, who had not made it onto the short list.

The Mulroney government, faced with a recommendation by 75 experts that Bristol Aerospace of Winnipeg should receive the CF-18 maintenance contract, chose Canadair of Montreal instead.

The buns flew in Manitoba after that decision. They may soon fly again.

Mulroney blasts industry for depending too much on government funding

By Les Whittington
Southam News

TORONTO — Canadians are so reliant on government hand-outs that, without federal funding, things can't happen, Prime Minister Brian Mulroney told a science and technology conference Friday.

"Part of the 'culture' in Canada is that if it doesn't come from a cheque from the federal government, it doesn't exist," he said.

The comment appeared to be an attempt to shift blame for Canada's lagging technological capabilities away from the federal government toward private business.

Mulroney has been criticized at the conference for not doing enough to spur the research and development needed to keep Canada competitive in the world economy.

In the 1984 election campaign, Mulroney promised a Tory government would double the amount of research and development spending in Canada. But the increase has not materialized.

In a wrap-up speech to the 200 delegates at the conference, Mulroney said, "People talk about the comment I made about doubling the commitment to research and development — that's doubling the national commitment — not just government involvement."

He went on to criticize Canadians for being too dependent on government hand-outs.

"All Ottawa's been doing is spending your borrowed money and putting a mortgage on the backs of your kids and their kids," Mulroney said heatedly.

"Real investment comes from the investment of real dollars in real projects, not borrowed money."

The challenge, he said, is to create a climate for increased business spending on technological innovation, rather than relying on the "facile thought" that government spending is going to solve the problem.

Mulroney told the assembled scientists, businessmen and academics he has cleared the decks in his office to take charge of a special national effort to spur increased research and development activity.

Besides the need for private investment, Mulroney also said Canadians, particularly young people, must awake to the importance of science and brain-power as generators of future national wealth.

He also called for a new emphasis on science and engineering in schools, with an emphasis on increasing the percentage of women in high-technology pursuits.

On Wednesday, Mulroney announced an additional \$1.3 billion in federal government spending over the next five years for research and development projects.

PM rejects pleas to boost financing for more R and D

BY LAWRENCE SURTEES
The Globe and Mail

Rejecting business pleas to increase federal Government spending on research and development, Prime Minister Brian Mulroney ended a three-day conference on technology with a promise of more talk.

Mr. Mulroney repeated his earlier refusal to "spend borrowed money" on R and D. But he said he wants to have five regional repetitions of the conference on technology and innovation in British Columbia, the Prairies, Ontario, Quebec and the Maritimes.

Mr. Mulroney made his comments in a closing statement to 200 business and university leaders invited by him to attend the Government-sponsored conference in Toronto. The aim of the conference was to garner advice on developing a new science and technology strategy for Canada.

Although participants paid their own expenses, the conference cost taxpayers more than \$1-million, according to organizers.

The cost of the well-orchestrated event included: an exhibit hall touted as a "celebratory showcase" of domestic high-tech achievements, although most of the exhibitors were federal Government departments; five background reports for participants prepared under contract by private consultants, including a paper with suggested questions for discussion at the workshops; and matching yellow wool sweaters and red ties for attendants.

Participants attended workshops to discuss the conference's three themes, which were directed exclusively at private-sector issues of technological development.

Mr. Mulroney opened the conference on Wednesday with a campaign-style promise to spend an additional \$1.3-billion in the next five years on science and technology. In addition to being vague on the policies that will guide two new programs to finance national centres of excellence and a scholarship fund, the bulk of the new money will only be spent if the Conservative Government is re-elected. (Mr. Mulroney must call a vote by September, 1989).

Despite organizers' attempts to deflect discussion away from Government policies, however, all four speakers yesterday received applause for their criticisms of Ottawa's R and D tax policies and overemphasis on regional development.

Although John Evans, presi-

dent of Allelix Inc. (a genetic engineering company in Mississauga, Ont.) applauded the planned centres of excellence, he said Ottawa's regional development policies must not be allowed "to make a caricature" of the centres.

In his keynote address Dr. Evans criticized the federal Government's tax rules, which he said create "uncertainty and delay."

The three speakers invited to deliver the consensus of each workshop to Mr. Mulroney reaffirmed Dr. Evans' criticisms.

Norman Keevil, chairman of Teck Corp., said Canada needs to adopt a new "culture" that favors technology. But he said participants also want Ottawa to change its procurement policies and tax rules relating to capital equipment.

Rita Dionne-Marsolais, vice-president of the Canadian Nuclear Association, noted that "some participants also recalled the scientific research tax credit program with some nostalgia."

Mr. Mulroney skirted the issue of further tax law changes and said he cannot increase Government R and D spending. And he denied making any promise to double Ottawa's research spending.

In a March, 1984, statement on R and D — six months before he won a landslide election victory — Mr. Mulroney said his Government would "double the collective" spending on R and D as a percentage of gross national product. But R and D spending remains at the 1984 level of 1.3 per cent of Gross Domestic Product.

Reaction to the conference was mixed. David Berger, federal Liberal science critic, said most of the ideas have been heard before at previous Government-run conferences in Ottawa in 1983 and Winnipeg in 1986.

He added that Mr. Mulroney's logic "smacks of Reaganomics." He (Mr. Mulroney) says the Government can cut its R and D spending, but that total spending will still increase. It doesn't add up."

Geraldine Kenney-Wallace, chairman of the Science Council of Canada, believes the conference "is probably a watershed, given the personal enthusiasm and commitment shown by the Prime Minister."

Although Mr. Mulroney and other speakers stressed the need to involve labor leaders fully in any discussions relating to technology, many unions were conspicuously absent.

Ottawa urged to aid high-tech with tax breaks

By Andrea Gordon Toronto Star

Ottawa must alter the tax system so it encourages research and new high-tech ventures, delegates to Prime Minister Brian Mulroney's showcase technology conference have recommended.

In three reports presented to Mulroney yesterday, the 200 delegates complained about new measures in the recent tax reform package, administrative problems with Revenue Canada and a tax system that doesn't adequately reward risk-taking.

Together those "tend to stifle rather than encourage" research and development, said one report, presented by Norman Keevil Sr., chairman of mining giant Teck Corp.

Delegates also called for consistency between government departments to ensure industry isn't getting mixed messages.

For example, the industry department must co-ordinate with Revenue Canada to ensure firms can proceed with viable research "without being harassed by the tax system," said a report presented by Rita Dionne-Marsolais, vice-president of the Canadian Nuclear Association.

A third report presented by David Hennigar, director of investment dealer Burns Fry Ltd., said Canadians must learn to manage risk rather than avoiding it.

"There should be appropriate incentives for risk-taking and recognition that there will be some failures along the road to success."

The messages were among a long list of recommendations delivered to Mulroney as the conference wrapped up.

Reform package

During the three-day event, leaders from industry, government and the scientific community spent much of their time in discussion groups, aimed at trying to reach consensus on a national science and technology strategy for Canada.

Although the suggestions weren't new, many of the delegates said the exercise was still important because the prime minister had promised to listen.

"Now we really have to see the commitment," said John MacDonald, chairman of MacDonald Dettwiler & Associates, a remote sensing firm based in Richmond, B.C.

Mulroney made no specific promises after hearing the reports except to announce a series of regional conferences in Ontario, Quebec, British Columbia, the Prairie provinces and Atlantic Canada to follow up on the suggestions.

"You will not have spent three days in Toronto in vain," he told the delegates after hearing their reports.

"You have come up with some very solid and sensible recommendations."

High-tech and manufacturing organizations were infuriated by certain measures in the tax reform package, including a new cap on the amount companies could claim for research and development.

But yesterday's reports also called for changes in the definitions of what qualifies for credits to ensure high-tech improvements on existing products are eligible, and removal of the administrative burden that forces companies to wait months for credits.

They also called for measures that would funnel more capital into high-tech ventures. Suggestions included relaxation of restrictions on pension fund investment and the creation of plans similar to the Quebec Stock Savings Plan that funnelled capital to new ventures.

One report called for a program similar to the old Scientific Research Tax Credit with stiffer measures to guard against abuse. That program, introduced by the previous Liberal government, was halted by the Conservatives because it was flawed and cost Ottawa billions of dollars, in some cases without any real research being done.



Mulroney

Tax support

As well as calling for a tax system and bureaucracy that supports high-tech development, the reports focused largely on the need to boost public understanding of why science and technology are important.

"Although technology is a powerful tool to generate high quality jobs, wealth and high living standards, Canadians as a whole appear to lack an understanding or even an awareness of this," said Keevil.

"We must develop a culture and society that is excited by science, innovation and technology."

Science Minister Frank Oberle also attempted to address that problem on Thursday night by announcing a \$10 million public awareness campaign to raise the profile of science and high-tech across the country.

Other major recommendations:

- More industry investment in basic pre-competitive research through participation with universities or through research consortia.
- Improved government procurement and contracting out policies to help Canadian high-tech firms.
- More government support programs to assist in exporting and marketing high-tech products.
- Improvements in patent rules and copyright legislation for software to protect new businesses and technology breakthroughs.
- Encouraging universities and big industries to act as "incubators" for new ventures.
- Reshaping the education system to ensure that scientists and engineers become better versed in business management and business students learn about managing technology.

Douche froide sur le rêve de la réussite technologique

Mulroney et les industriels se renvoient la balle

MICHEL VASTEL

TORONTO - La Conférence nationale sur la technologie et l'innovation s'est terminée sur une note de scepticisme: Brian Mulroney et l'élite scientifique du pays se sont renvoyé la balle quant à leurs responsabilités respectives pour le retard technologique du Canada.

Mais convaincu qu'il a en main une bonne carte électorale, le gouvernement n'en a pas moins décidé de répéter l'expérience et organisera cette année cinq conférences régionales, en Colombie-Britannique, dans les Prairies, en Ontario, au Québec et dans les Maritimes, sur le même thème de l'excellence et de la réussite technologique.

Après 48 heures de dithyrambes

sur les promesses de l'excellence, le gratin des sciences et de la technologie a jeté une douche froide sur l'enthousiasme parfois un peu naïf du gouvernement:

- « Lorsque j'ai parlé de doubler les dépenses de recherche et développement au Canada, d'expliquer le premier ministre pour s'excuser de ne pas avoir tenu sa promesse électorale, je ne parlais pas seulement

des contributions fédérales mais tout autant des efforts du secteur privé »;

La réforme fiscale vient reprendre d'une main ce que le gouvernement donne de l'autre, ont cependant répliqué plusieurs participants, précisant que l'abolition des crédits d'impôt par le ministre des Finances, Michael Wilson frappe les petites entreprises à forte intensité technologique: « d'un côté on vante l'excellence et de l'autre on la pénalise, c'est contradictoire », a déploré le président du Conseil national de recherches;

Et le même Larkin Kerwin ajoute que ce sera long: évoquant les « années de négligence », il estime qu'il faudra de quinze à vingt ans au Canada pour rattraper son retard technologique sur le Japon et l'Allemagne qui ont formé une élite scientifique depuis la fin de la guerre, il y a quarante ans.

En général, les 200 et quelques invités du premier ministre à cette Conférence nationale se sont dits satisfaits des efforts du gouvernement pour vanter les mérites du progrès technologique et, comme M. Mulroney mercredi, ils insistent sur la nécessité de convaincre l'opinion publique canadienne et les jeunes en particulier. C'est d'ailleurs pourquoi cette suggestion de tenir cinq conférences régionales sur les mêmes thèmes a été généralement bien reçue.

Les efforts du gouvernement ne seront cependant récompensés que si le secteur privé en fait davantage pour la recherche, en particulier dans les universités. Plusieurs ateliers de travail ont donc suggéré que les grandes entreprises bien établies au Canada jouent un rôle de « grand frère », ou « d'incubateur », pour de petites entreprises qui se chargeraient de développer de nouvelles technologies mises au point dans les grands laboratoires du pays.

On sait que le gouvernement fédéral a sabré dans le budget du CNRC, qui tombait de \$ 520 millions avant la prise de pouvoir des Conservateurs, à \$ 393 millions l'année sui-

vante. Mais Larkin Kerwin précise que son budget sera revenu à \$ 450 millions d'ici la fin de cette année et il s'en dit satisfait. (90 % des recherches entreprises par le CNRC sont directement reliées à des besoins de l'industrie).

• Toutefois, explique encore le président du CNRC, si cette conférence a raison et que le secteur privé se lance vraiment dans le développement technologique, le gouvernement devra accroître ses investissements dans les laboratoires. M. Kerwin explique que le CNRC est une infrastructure industrielle au même titre que les routes ou l'électricité. Il en donne pour exemple l'industrie de la pêche des Maritimes qui a eu recours à son laboratoire de Halifax pour résoudre le problème de l'empoisonnement des mollusques.

Parmi les suggestions des invités de la conférence nationale, l'une réclamait de dédier l'un des Centres d'excellence au développement de techniques de gestion de la technologie. Plusieurs ont en effet souligné que c'est dans l'entreprise que le problème commence, cadres et syndicats ne sachant pas comment tirer profit des avantages de l'avancement des sciences. D'autres ont cité en exemple les politiques du Québec, en particulier le régime d'épargnes-actions qui permettrait d'attirer du capital de risque vers les jeunes entreprises à forte intensité technologique. Enfin, on suggère qu'il faut aussi changer les mentalités des professeurs et des étudiants. Or, rappelle Mme Diane Rita-Marsolais, l'éducation est de responsabilité provinciale: il faut donc que les provinces adhèrent à ce projet national.

Juste après avoir lui-même mis fin à cette première Conférence nationale, le premier ministre se rendait à l'aéroport de Toronto pour y accueillir le premier ministre du Japon. • Nous avons autant de cerveaux que les Japonais, a lancé M. Mulroney, il suffit de savoir s'en servir... Je vais dire à Takeshita: accrochez-vous! »

LA RECHERCHE OUBLIÉE

DOIT-ON vraiment se résigner à voir filer le temps avant que la recherche ne devienne effectivement une priorité majeure dans ce pays ? Cette question désabusée laisse un arrière-goût amer au lendemain de la Conférence nationale sur la technologie et l'innovation qui s'est achevée hier à Toronto. Admettre qu'il faudra attendre une génération avant de voir les chercheurs jouer un rôle de premier plan, voilà qui ne remplit pas d'enthousiasme !

La rencontre de Toronto n'avouait peut-être pas ses couleurs électoralistes ? Le Premier ministre du Canada en a-t-il profité pour tenter de redorer son blason et humer le vent ? Le dialogue entre gouvernants, chercheurs et capitaines d'industrie s'est-il maintenu au niveau des vœux pieux et des grandes déclarations d'intention ? Toutes ces questions mériteraient à elles seules quelques bons paragraphes bien sentis. Le retard accusé par le Canada au chapitre de la recherche et de l'innovation suscite pourtant des considérations autrement plus inquiétantes.

Il s'agit d'une question de mentalité, aurait-on mentionné lors des séances de travail dans la capitale ontarienne, pour rendre compte de ce retard qui handicape déjà notre évolution économique. C'est exactement sous cet angle que l'on doit aborder un problème soulevé plus ou moins périodiquement depuis près de 30 ans.

Il ne faut pas se méprendre, encore moins s'illusionner. La modernité affichée par entrepreneurs et industriels, stimulée sinon récupérée par les gouvernants, n'a pas évacué l'héritage des vastes espaces, des ressources inépuisables. Pourquoi se creuser les méninges, pourquoi investir dans des laboratoires lorsque les matières premières permettent une exploitation facile, des succès immédiats, mais sans lendemain ? On a souvent tendance à associer la recherche aux seuls secteurs de pointe où le laser, la fission nucléaire et la satellisation composent un univers irréel où la science fiction fait ses beaux dimanches. Telle dimension de la recherche ne doit cependant pas voiler un autre aspect plus concret, plus terre-à-terre qui reflète les besoins et les attentes de l'activité économique.

Ainsi, pendant des décennies, on s'est contenté de reculer plus au nord l'exploitation forestière. On se rendait bien compte que les arbres devenaient de plus en plus rabougris, que les coûts de

transport augmentaient de façon disproportionnée. Mais on continuait à faire chantier sans trop de souci de ces considérations. Pendant ce temps, les pays scandinaves, confrontés à des situations analogues, s'engageaient, dès la fin de la guerre, dans une double démarche. D'abord, reboisement systématique, qui porte ses fruits depuis un bon moment déjà. Et puis, mise en oeuvre de programmes de recherches qui ont permis des percées fulgurantes en plusieurs domaines. Citons la pénétration sur tous les marchés du meuble scandinave, la mise au point d'outils de grande précision, le recyclage des déchets du bois...

Inutile de se lancer dans les querelles de chiffres et de statistiques. Un seul fait doit être évoqué : de tous les pays industrialisés, le Canada consacre la plus faible partie de ses ressources financières à l'activité de recherche. À ce rythme-là, le XXI^e siècle ne sera sûrement pas celui du Canada. Nous conservons un record dont personne n'est fier, mais qui constitue notre partage.

Seule une concertation approfondie entre le secteur économique, les divers gouvernements et les chercheurs pourrait nous dégager de cette ornière où un confort relatif tient lieu d'alibi et d'excuse. En sabrant dans le budget du Conseil national de la recherche scientifique, l'an dernier, le gouvernement fédéral n'a pas lancé un signal très clair. Les gouvernements provinciaux pèchent par manque de clairvoyance lorsqu'ils imposent aux universités des compressions financières qui ne font pas le partage des choses.

Faut-il jeter la pierre au secteur économique ? Les progrès ont été bien timides en ce qui concerne les entreprises conjointes où les chercheurs universitaires se verraient épaulés par les industries et autres entreprises. Les grandes promesses n'ont engendré que de grandes illusions, du moins à ce moment-ci.

On s'inquiète à juste titre du gonflement de la dette publique qui hypothèque l'avenir des générations montantes. Il serait temps de songer à la désuétude et à la vétusté de l'appareil de production qui constituera aussi leur héritage. Seuls des investissements massifs et immédiats dans la recherche éviteront de glisser au rang de la sous-traitance internationale et de l'insignifiance technologique.

— PAUL-ANDRÉ COMEAU

A drop in the beaker

Prime Minister Brian Mulroney's new commitment to spend \$1.3 billion on scientific and technological research over the next five years is welcome, but it is a far cry from the assistance he promised during the 1984 election campaign.

Then, Mulroney pledged to double the amount spent on research and development during his first term in office.

At that time, 1.3 per cent of Canada's gross national product — about \$7 billion per year by today's standards — went to research. As Canada rang in 1988, that percentage was virtually unchanged. The latest announcement — amounting to only \$260 million per year — will have little effect on that percentage.

Numbers aside, Ottawa has also made little progress in its stated desire to "improve the linkage" between public and private sector research and to "encourage the diffusion of modern technology and know-how across the country."

Mulroney's vision of Canada as a world leader in research remains unrealized. We continue to lag far behind other western industrial nations in our attempts to find and develop new technology.

La contribution fédérale au même niveau qu'en 1981

Le Canada doit rattraper son retard technologique

Durant plusieurs décennies, le Canada a été occupé à définir sa personnalité propre et toute l'attention a porté de ce côté: des myriades de sociologues, politiciens, constitutionnalistes et autres experts en aménagement politique sont sortis des universités pour occuper tout le champ ouvert. Des théoriciens, oui, des techniciens, si peu.

Or les temps ont changé. Peu a été fait en sciences naturelles et dans leur application concrète, la technologie. Même si le Canada a vécu, et bien vécu malgré tout puisqu'il est encore au septième rang des démocraties industrialisées, de l'exportation des richesses naturelles et de l'importation du «savoir-faire», cela doit changer.

L'impératif est d'autant plus fort que l'apparition prochaine du libre-échange avec les États-Unis contraindra le Canada à être plus compétitif avec la plus inventive des nations. Plus encore que les USA, la compétition s'appelle aussi Japon, Communauté européenne, sud-est asiatique: terribles concurrents qui font consommation insatiable de matière grise qui garantit à terme la croissance économique des prochaines décennies.

Le Canada a eu longtemps le culte du débat sur son avenir; le premier ministre Mulroney propose avec justesse que soit créée «une culture des sciences et de la technologie». Les pays rivaux investissent en masse dans cette culture pour mieux produire: nous devons les rattraper sous peine d'être laissés loin derrière dans une espèce de tiers-monde technologique qui paiera pour le profit des leaders en la matière.

Faites cette semaine, à Toronto lors de la Conférence nationale sur la technologie et l'innovation, les propositions du premier ministre fédéral ne sont pas les plus originales mais il faut les recevoir à leur mérite propre. Ainsi en va-t-il de la création d'un programme national pour l'établissement de centres d'excellence sur les campus universitaires: déjà l'Ontario en possède-t-il six (dont un à l'université d'Ottawa) qui ont été mis sur pied par le gouvernement provincial depuis le début des années 80. Que cet exemple soit multiplié à travers le Canada, soit, mais encore faudra-t-il éviter soigneusement le double emploi: non seulement serait-il coûteux et source de vaine concurrence mais il retarderait le rattrapage qu'il faut faire et qui interdit la perte d'effort et d'énergie (dont les rares et précieux dollars).

Quant au programme de bourses d'études en

sciences, génie et disciplines connexes (\$20 millions), les étudiants l'apprécieront certes quoique leur principale motivation viendra moins de quelques milliers de dollars que de la perspective de pouvoir travailler dans leur champ de compétence au sortir de l'université.

Mais voici que cela épuise les chiffres dévoilés, ces fonds supplémentaires de \$1,3 milliard répartis sur les cinq années à venir... Au fond, \$260 millions additionnels seront versés à la recherche et au développement à partir de la prochaine année fiscale. Ceci maintiendra la contribution fédérale à environ 1.3% du produit national brut (PNB), comme c'était le cas en... 1981. Pour des fins de comparaison, il est utile de savoir que d'authentiques leaders mondiaux (USA, Japon, Allemagne fédérale) consacrent entre 2 et 2.5% de leur PNB à la recherche.

Cette implacable réalité des chiffres montre qu'il faudra encore d'autres annonces gouvernementales des crédits supplémentaires avant que se réalise le vœu formulé par le premier ministre Mulroney de reprendre le temps perdu et de rejoindre le peloton de tête en R et D, là où se joue effectivement la partie.

Le premier ministre Mulroney voudra sans doute poursuivre au fil des mois à venir sa réflexion engagée: ne vient-il pas de remettre à l'heure de ses premiers engagements de mars 1984 les dépenses gouvernementales en recherche et développement qu'il avait alors promis de doubler durant son premier mandat?

Non seulement le gouvernement a-t-il tout loisir de mettre ses efforts dans cet instrument de croissance, mais encore n'en a-t-il pas tellement le choix! Avec l'arrivée du libre-échange, tout doit être mis en oeuvre pour que la recherche faite ici serve au développement économique ici, sinon la dépendance extérieure s'accroîtra. Le Canada risque de voir s'accroître sa caractéristique d'être un simple exportateur de matières premières et un importateur net des produits conçus par la matière grise étrangère.

Le gouvernement Mulroney doit être pour les Canadiens un guide, un modèle exemplaire dans la création, selon les termes du premier ministre, «d'une culture des sciences et de la technologie». Après l'avoir si bien dit, il reste à le faire mieux encore.

Pierre Tremblay

THE CHRONICLE HERALD

Science funding will strengthen research, development — Clark

By CLAIRE McILVEEN
Staff Reporter

The federal government's promise of \$1.3 billion over five years for science and technology will strengthen Canada's research and development effort, Dr. Howard Clark said Friday.

But whether the announced funding is adequate "depends enormously on how it is spent," the president of Dalhousie University said in a telephone interview.

The funding will "substantially increase, if not double" Canada's total research and development effort as a percentage of gross national product, he said.

"As long as the money is spent on the development of appropriate re-

sources, the building up of strong centres of excellence, then yes, loosely speaking, you could say it is enough," he said.

But if resources are spread thin, and "aren't achieving significant results, it will be regarded as not being enough."

Prime Minister Brian Mulroney said this week a jury of experts will recommend establishment of regional centres of excellence on university campuses and scholarships in science and engineering for 2,500 students across the country next year.

Dr. Clark said research suggests Canada is on a par with other countries in terms of basic research, but is behind in funding of applied research and development, particularly long-term research.

Canadians have the same attitude towards basic research as the Japanese, but North American industry, where applied research is centred, "tends to take a fairly short-term perspective," he said.

"If it (industry) can't convert something for a profitable outcome within a relatively short time period, it won't maintain the research," while Japanese industries are willing to do long-term research to ensure success, he said.

In anticipation of the funding announcement, Dalhousie University is looking at several areas for the submission of proposals, which Dr. Clark would not specify.

Dalhousie is also discussing joint projects with other institutions, he said.

Focus on science requires joint effort

TORONTO — Ask most kids what they want to be when they grow up and it's not likely the reply will be "a scientist."

Depending on the age, it's more likely to be policeman or nurse, doctor or lawyer.

We don't make heroes of our scientists so that they become role models for our children to emulate.

Science simply isn't an important part of our culture like it is in the U.S. — where it's driven by space and defence — or in Japan, where the country's lack of natural resources force it to survive on its wits.

By international standards, Canada is a real laggard in science spending.

Only three of every thousand workers are researchers, compared with an average of 6.5 in the U.S. and six in Japan. Our spending in research and development as a proportion of our economy puts us in the last quarter among the two dozen modern Western countries.

Only two per cent of Canadian companies even carry out R and D. And seven per cent of Canadian companies do two-thirds of industrial R and D.

Little wonder that again and again at a national conference on technology and innovation, which wrapped up here Friday, the importance of changing Canadian attitudes toward science and technology was repeated.

The easy days when Canadians could get rich simply selling off resources are behind us. Those resources don't command the same prices they did and today it's the so-called "knowledge-based" industries that are the key to growth.



John Ferguson

Southam News

As Alcan president David Culver put it: "Technology and innovation are deadly serious matters for Canada."

"For Canada, it is survival. If technological innovation as a key competitive tool does not become an integral part of our everyday industrial thinking, we are in danger of slipping backwards in the world scene, and doing so irreversibly."

But to do it will mean a change in attitudes to make science part of our culture. Science can't be seen simply as an esoteric discipline practised in laboratories remote from the real world.

It must be seen as the key to our future economic strength. If this seems obvious to some, a recent survey by the federal science ministry found a majority of Canadians see no link between technology and a stronger economy.

And many still see technology not as an opportunity to create more wealth, but as a threat to job security.

Changing these attitudes is not something that will happen overnight. But you'll certainly be hearing and seeing a lot more about it.

The federal government is launching a public awareness program it com-

pares with the Participaction promotion, so successful in making Canadians aware of the importance of fitness.

The shakeup is going to have to reach every nook and cranny of society.

The educational system will have to rethink the way it promotes science, starting at the primary school level. More women, who now get only 12 per cent of the degrees in engineering and natural science, will have to be encouraged to enter the field.

At the university level, there will have to be closer alliances built with industry to ensure basic research is more focussed and gets translated into marketable products.

Universities are going to have to take a fresh look at what they teach in their business and engineering schools. Managers are going to have to be more technically literate and engineers are going to have to know more about management.

And there will have to be close cooperation with labor to ensure training is carried out effectively. Sadly, most of organized labor boycotted the Toronto conference because of a silly tiff over who from labor would be allowed to speak.

John Evans, the former University of Toronto president, commented that Canadians are going to have to be "un-Canadian" in two important respects.

"They must act, not just talk, and they must act boldly," he said. "Secondly, the actors must work in concert."

Government, labor, the universities and industry will have to co-operate to take maximum advantage of Canada's limited resources.

Mulroney blames business for slump in hi-tech research

By Les Whittington
(Southam News)

TORONTO — Canadians are so reliant on government hand-outs that, without money from Ottawa, things can't happen, Prime Minister Brian Mulroney told a science and technology conference Friday.

"Part of the 'culture' in Canada is that if it doesn't come from a cheque from the federal government, it doesn't exist," he said.

The comment appeared to be an attempt to shift blame for Canada's lagging technological capabilities away from the federal government toward private business.

Mulroney has been criticized at the conference for not doing enough to spur the research and development needed to keep Canada competitive.

In the 1984 election campaign, Mulroney promised a Tory government would double the amount of research and development spending. But the increase has not materialized.

In a wrap-up speech to the 200 delegates at the conference, Mulroney said, "People talk about the comment I made about doubling the commitment to research and development — that's doubling the national commitment — not just government involvement."

He went on to criticize Canadians for being too dependent on government hand-outs.

"All Ottawa's been doing is spending your borrowed money and putting a mortgage on the backs of your kids and their kids," Mulroney said heatedly.

"Real investment comes from the investment of real dollars in real projects, not borrowed money."

The challenge, he said, is to create a climate for increased business spending on technological innovation, rather than relying on the "facile thought" that government spending is going to solve the problem.

Mulroney told the scientists, businessmen and academics he has cleared the decks in his office to take charge of a special national effort to spur increased research and development activity.

On Wednesday, Mulroney announced an additional \$1.3 billion in federal government spending over the next five years for research and development projects.

But some business people say the amount is inadequate and blame restrictive Tory tax policies for the lukewarm research and development investment climate.

Business keen on research — with Ottawa money

By Peter Morton

(Herald staff writer)

TORONTO — Just as everybody talks about the weather, Canadian businessmen spend a lot of time talking about research and development — but no one does anything about it.

For three days last week, some of Canada's top business leaders were at the Conference on Technology and Innovation here to debate and to urge the federal government to come up with new schemes to raise Canadian technology consciousness.

Prime Minister Brian Mulroney made commitments to Canada's technological future, promising great new schemes to encourage academic research.

As part of a \$1.3-billion injection of federal money into new research and development, funds will flow into select Canadian universities.

Called Centres of Excellence, a scholarship program will award \$2,000 to each of 2,500 students. The selection of the universities will be made by an independent panel.

Where the rest of the money goes during the next five years remains to be seen. Neither Mulroney nor the minister of state

VIEW FROM THE EAST

for science and technology, Frank Oberle, seemed to know.

But the government created a new department, Industry, State and Technology, whose first mandate will be to spend \$10 million on educating the Canadian public about the benefits of research and development.

Modelled on the successful Participation health-awareness campaign launched by the Liberals, the Conservative program will go to the airwaves to educate, in the words of one business leader, Canada's "technological illiterate."

About the only thing the Canadian public knows about research and development is that defunct and troubled Liberal scheme, the Scientific Research Tax Credit program.

Perhaps noble in design, the program fell into quick abuse, producing some ludicrous projects and costing Canadian taxpayers billions of dollars.

The rest of Canadian industry has been embarrassingly slow in developing its own research.

"The science and technology record of Canadian corporations

overall is dismal," said John Evans, chairman of Allelix Inc.

In an address Friday, Evans pointed out that only two per cent of Canadian corporations invest in research and development. Of those, a mere seven per cent account for some two-thirds of all research and development.

"But 98 per cent of Canadian companies have little appreciation of the potential of technology in improving the competitiveness of their products, processes and services and very few of them have scientists or engineers on staff," he said.

Evans received a resounding and spontaneous round of applause. The select 200 at the conference (which cost the federal government about \$1 million) approved. That's when the ball came squarely back into the federal court.

As Mulroney listened, giving that reassuring smile, the chairmen of the various committees stood to report that what was needed, in essence, was more government money.

They would like to see a rebuilding of the SRTC program

because tax incentives were so critical.

They would like to see other federal encouragements to research, such as more generous tax writeoffs.

They want the federal government to ease the restrictions on risk-capital funding, especially for pension funds whose vast pool of funding make them a potentially generous ally.

They want more "patient funding" from those who invest in research and development, not just those who are looking for the quick-hit glamor stuff that could turn a fast dollar.

They want more protection for computer software while, at the same time, they want easier access to patents registered in the federal patent office.

In short, they want a lot and they want the federal government do to most of it.

Mulroney has already moved to head off the growing clamor

for more federal aid even though this conference was his own cause célèbre.

He warned that the government wants to help create a climate "where all participants in the sector move up with their commitment, not just the federal government writing a cheque for borrowed money."

In the past, he said, "all Ottawa was doing has been spending your borrowed money and putting a mortgage on your kids and their kids."

Another series of regional conferences is planned, but it's fairly clear that \$1.3 billion over the next five years won't contribute significantly to new research and development in Canada.

Even with Mulroney's promise to almost double research spending to 2.5 per cent of gross national product from 1.3 per cent of gross domestic product, it is still a figure which pales against other Western countries.

Instead, Canada will likely continue to import technology, put a torque on it and call it Canadian, at least until a way is found to work a compromise between increased reliance on the federal government and initiative of the private sector.

Recognizing research

Prime Minister Brian Mulroney has given a strong signal that his government considers research and development important to Canadian economic growth. His announcement of \$1.3 billion of new federal spending in the field over five years should encourage other sponsors of research activity — especially provincial governments and corporations — to join in a gradual, rational and carefully managed expansion of Canada's scientific effort.

Ministers with Mr. Mulroney at the Toronto conference on research and development programs had little to say about the way the money should be spent, which is encouraging. Government is not good at deciding which scientific enterprises to support and which to neglect. Those decisions are best left to others.

Science Minister Frank Oberle hopes a share of the money will be applied to scholarships for science and engineering students with special talents. That may be a useful move, but the matter should not be decided until someone knows what those students will do after their scholarships run out. Canada exports brains already. A new scholarship system unrelated to a fuller policy might simply train Canadian apprentice-scientists a year or two more before sending them abroad to apply their training.

Government is good at splitting up money according to the usual criteria — so much for this region, so much for that; so much for this lobby group, so much for that. Support for scientific effort should include other criteria as well, ones which are not as well understood in government. Someone has to say that one project is good science and another is less good. But what should Canadians regard as good science?

Scientists themselves tend to judge research proposals by their fruitfulness in answering interesting theoretical

questions or by the reputation of the researcher. Conservative policy in recent years has relied on the private sector test: If a company wants to invest money in a research project, it must be good. If no company wants to, it must lack merit. Neither test is adequate by itself. A national research and development policy should support both fundamental and applied work.

Canada's scientific effort is blamed because the share of gross national product spent on research and development is smaller in this country than in most of the industrialized world. Percentage of GNP is one test, but it may not be the most important. Research money can disappear quickly into projects that are inherently expensive. A project that begins with building a nuclear reactor will add greatly to the share of GNP spent on research and development, but it may not answer questions that need answering.

The research and development policy should aim to increase the number of full-time scientists at work in the country. It should aim to keep those scientists in close touch with their colleagues in Canada and abroad. It should aim to give them a stimulating environment. It should give the most productive scientists untrammelled freedom to apply their minds to the projects they find most interesting. It should require articulate scientists to let the public know what they are doing, something Canadian scientists have not usually considered part of their job. It should keep a thick layer of insulating bodies such as the national granting agencies in between the working scientists and their political paymasters.

Money and governmental commitment are necessary ingredients for a strengthened research and development effort in Canada. They are far from sufficient. If the effort depends on governmental leadership, it is likely to remain feeble.

Un programme fédéral de \$10 millions

La technologie ne doit plus du tout faire peur

♦ **TORONTO (PC)** - Le gouvernement fédéral a annoncé cette semaine, dans le domaine des sciences et de la technologie, la mise en œuvre d'une campagne de sensibilisation, calquée sur le modèle du programme Participation.

par **Guy TAILLEFER**

Dans un discours prononcé dans le cadre de la Conférence nationale sur la technologie et l'innovation, qui s'est tenue à Toronto, le ministre d'Etat Frank Oberle a indiqué que \$10 millions seront consacrés à cette campagne au cours des prochaines années.

« Trop nombreux sont les Canadiens qui voient la technologie comme une menace à leur sécurité d'emploi », a déclaré le ministre d'Etat aux Sciences et à la Technologie.

Le gouvernement conservateur aura fait tomber une pluie de millions pendant cette conférence réunissant quelque 200 intervenants des milieux industriels, universitaires et gouvernementaux.

Les principaux syndicats du pays ont boycotté la réunion de trois jours, qui avait été convoquée par le premier ministre Brian Mulroney.

Mercredi, à l'ouverture de la conférence, M. Mulroney annon-

çait que le gouvernement dépenserait \$1.3 milliard au cours des cinq prochaines années afin de stimuler la recherche universitaire dans les domaines technologiques et scientifiques.

L'annonce a été généralement bien accueillie par les participants.

Mais au moins un des délégués, M. Georges Hanza, de l'Institut Gamma, a exprimé certaines réserves, reprochant au gouvernement fédéral de mettre tous ses oeufs dans le même panier.

Les centres d'excellence que se propose de créer le gouvernement fédéral, dans le cadre de son nouveau programme, ne devraient pas être réservés aux milieux universitaires, a affirmé M. Hanza en entrevue.

« Je reste convaincu qu'on ne peut pas vraiment parler de centres d'excellence sans y faire participer aussi les agents des domaines industriels et gouvernementaux », a déclaré le porte-parole de l'institut Gamma, qui est basé à Montréal. L'institut est un centre de recherche inter-universitaire.

M. Hanza invite le gouvernement à élargir son discours afin que tous les intervenants puissent participer à la « course à l'innovation ».

Il craint cependant que la volonté politique des conservateurs en matière technologique ne soit pas assez puissante pour surmonter les obstacles bureaucratiques.

« On a trop souvent l'impression que le Canada est géré par les fonctionnaires plutôt que par les politiciens. »

Réactions québécoises

Un haut fonctionnaire du gouvernement québécois, M. Pierre Coulombe, sous-ministre adjoint au ministère du Commerce extérieur et du Développement technologique, a pour sa part qualifié d'excellente l'initiative annoncée par M. Mulroney.

Il a estimé qu'elle s'inscrivait dans la continuité de la politique appliquée par le Québec à ce chapitre.

Une cinquantaine d'équipes de chercheurs spécialisés ont été formées depuis deux ans dans les universités québécoises, a-t-il dit.

M. Coulombe a soutenu que le Québec faisait amplement sa part en matière de recherche et de développement.

Les statistiques les plus récentes indiquent que le Québec était en 1985 la province à dépenser le plus dans ce domaine, a-t-il soutenu. Il a dépensé \$159 millions, contre seulement \$111 par l'Ontario. ●

Renewing an old promise

It was the kind of pre-election promise that can come back to haunt a politician—and for Prime Minister Brian Mulroney, it has. In 1984 Mulroney vowed to double Canada's commitment to research and development. Instead, the government froze federal research spending and grants, and announced plans to cut back on tax breaks for private firms doing research. Scientists, educators and business leaders roundly condemned Mulroney for failing to deliv-

The criticism centres on the fact that last year's outlays of an estimated \$7.1 billion on research and development by governments and industry in Canada amounted to only 1.3 per cent of the gross domestic product. That was about the same percentage as in 1984, despite Mulroney's promise. By comparison, the United States and Japan devoted 2.8 per cent of their GDP to R and D, and Sweden 2.4 per cent. Indeed, since the Conservatives took office, Mulroney has reduced the govern-

\$408 million in 1987. Whole sections of the research establishment disappeared, including the laboratory that nurtured Nobel Prize-winning chemist John Polanyi. The staff has been cut to 3,000 from 3,270. Many, including Lipsett, 62, have taken early retirement. Lipsett insists that the research council, where scientists developed the first heart pacemaker and the sophisticated system that guides the space shuttle's Canadarm, is "headed for mediocrity."

The government upset private industry by reducing tax incentives for R and D. Last year Finance Minister Michael Wilson announced that the government would allow businesses to deduct research costs up to one half of their federal tax payable, instead of the full amount. After protests, Wilson agreed to set the deduction at three-quarters of research costs.

Government officials acknowledge that funding of science and technology has taken second place to reducing the federal budget deficit. Said one senior bureaucrat: "More money has to be put on the table. There's no doubt about that." But the Conservatives were made wary by the dismal failure of the scientific research tax credit, a complex tax concession introduced by the Liberal government that did little to encourage science, while costing the government more than \$1 billion. The bureaucrat added that government had to clean up its own house before reach-



De Cotret (left); Lipsett: fears that the National Research Council is headed for mediocrity

er on his promises. But this week Mulroney intends to address his critics. Among new promises expected from Mulroney at a government-organized three-day national conference on technology and innovation in Toronto: plans to inject more than \$1 billion during the next five years into science and technology.

At the same time, Regional Industrial Expansion Minister Robert de Cotret will present details of a proposed new ministry of industry, science and technology. It will combine the remnants of his department—whose responsibilities for aiding poorer regions have been largely taken over by new western and Atlantic development agencies—and the ministry of state for science and technology. But simply renewing Mulroney's promises—plans to form the new ministry were announced last August—will not likely silence the critics.

ment's share in research by holding annual federal spending on R and D steady at \$2.5 billion, while private spending has kept pace with inflation and the growing economy. Said Gordon Lloyd, director of technical affairs for the Canadian Manufacturers' Association: "Countries all over the world understand that you have to support research and development or be left behind. This government isn't doing enough."

For retired National Research Council physicist Fred Lipsett, who voted Conservative in 1984, Mulroney's pre-election rhetoric is a bitter memory. Said Lipsett: "I was elated by the Conservatives' promise to increase spending on R and D. I thought it would be good for research and good for the country." Instead, the council, which since 1916 has been the government's research flagship, received a shock. The Ottawa institution's budget dropped from \$502 million in 1984 to

ing out to industry. Said the official: "The old stuff about splashing money around the country makes no sense. We had to reorganize."

As part of that reorganization, the government has set up advisory boards to help select industries and technologies that are worthy of support. The provinces declared their support in a joint national science and technology policy that they signed last March with Ottawa. The administrative groundwork is now in place, de Cotret said, for more effective and intelligent use of funds to support Canada's science and business community. The government's immediate task is to convince skeptics—including about 200 representatives of industry, labor and the academic world invited personally by Mulroney to this week's Toronto conference—that this time it really means business.

—MARC CLARK in Ottawa

PM honors pledges before hitting polls

As Parliament starts 1988 sittings, the decks are being cleared for action.

Prime Minister Brian Mulroney is clearly getting set for an election.

It won't come tomorrow. But if he sees a chance, he can go for it.

One by one, he's ticking off the promises of 1984.

The actions may not be what people expected four years ago or even what Mulroney thought he could do.

But he's working his way through the list so he won't be told on the hustings that he has done nothing about this promise or that.

The latest tick mark is against research and development.

In 1984 he rapped the Liberals because Canada was spending only 1.3 per cent of its gross national expenditure on research and development.

"We're going to double our collective national commitment to research and development within the life of our first government mandate," Mulroney said in a Montreal speech on March 22, 1984.

It hasn't happened. Spending remains at about 1.3 per cent of the national output.

But after last week's conference in Toronto, if Mulroney is challenged about the R and D promise he'll be able to talk about the \$1.3 billion his government plans to spend in the next five years on "centres of excellence."

And this is only the latest in his series of pledges to spend money in the future in areas where he made promises in 1984.

On June 14, 1984, he promised Atlantic Canada "a fair break and a head start..." On June 6, 1987, he announced the Atlantic Canada Opportunities Agency with \$1.1 billion of "new money" over the next five years.

On July 5, 1984, he promised his government would be "a friend, not a threat" to western Canadians. On Aug. 4, 1987, he announced a \$1.2-billion "western diversification fund" to be spent over the next five years.

There's a pattern here.

Each announcement is by the prime minister. Each involves slightly more than \$1 billion in "new money" to be spent over five years. And each announcement has been made outside Ottawa.

This gets maximum political mileage out of a promise to spend about an extra \$200 million a year on something he previously promised.

As he gets close to an election, Mulroney is trying to use his position as prime minister to maximum advantage. An announcement by a



Don McGillivray
Southam News

prime minister has a special flavor of commitment to it. Just by visiting a city other than the national capital, he can generate a bit of excitement.

But there's another side to being prime minister. He walks a fiscal tightrope.

The voters expect him to promise to do things for them, and especially to keep the promises he made in the last election.

But a prime minister knows that promises have a price tag. And sometimes he is careless enough to say so, thus exposing himself to opposition attack.

In the 1984 campaign, Mulroney's campaign booklets quoted a bit of dialogue from the Commons.

As opposition leader, he asked Prime Minister Pierre Trudeau for tax relief for farmers and fishermen.

"I cannot give an answer," said Trudeau, "without looking into the cost of such relief."

Mulroney replied then in the Commons: "Every time there is a request on behalf of farmers and fishermen, there is a price tag or condition attached to it by this government."

But now he sounds like Trudeau.

When the hand-picked delegates to his Toronto technology conference last week suggested tax incentives for research, Mulroney replied that he shared their enthusiasm for tax relief.

Then he added: "But I wish I could afford more of it."

And he went on to blame Canadians for being too dependent on government handouts, for having a "culture" that said: "If it doesn't come from a cheque from the federal government, it doesn't exist."

In 1984, he said the country could afford total tax write-offs "for high-tech investments that will ensure a viable future for our children." Now he describes more government spending as "putting a mortgage on the backs of your kids and their kids."

This suggests he's near the end of the "new money" he has for redeeming 1984 promises.

When it's all gone, watch out.



Brian Mulroney
Clearing away commitments

Scientists want new tax policy

By Tamsin Carlisle

CANADA'S RESEARCH community is waiting to see if Prime Minister Brian Mulroney's much-touted conference on technology last week will produce tax breaks for risk-takers.

More than 200 industry, government and university leaders attended the three-day National Conference on Technology & Innovation in Toronto.

Among their recommendations:

- Ottawa should rethink tax reform proposals cutting back tax deductions for spending on research and development and lengthening the time it takes to get the deductions approved. The government should instead change the tax system to encourage risk taking.

- Improving science and technology education should become a national priority.

- Universities should produce ideas and skilled people, but not technology. Industry should develop technology, with government providing a means for exchanging knowledge and expertise.

- Government and the private sector should look on science and technology spending as investment rather than cost.

The delegates unanimously praised a government initiative to spend \$10 million on a national public awareness campaign stressing the importance of science and technology to Canada.

But a more ambitious program that will add \$1.3 billion to existing federal support for science and technology over the next five years attracted criticism. Part of the money has been earmarked to establish and support "centres of excellence" in five universities across the country, and to set up a federal science scholarship program. But delegates were concerned that federal officials could provide few details on how the program will work.

The direct effect of the cash infusion on national R & D spending will be miniscule, says National Research Council President Larkin Kerwin, raising it to 1.35% of gross domestic product from the 1.3% level maintained since Mulroney's 1984 election. The key question is now whether the federal government can use the money to prompt substantial additional technology investment from industry and the provinces.

Science & Technology Minister Frank Oberle was unable to say how Ottawa might do this. He said, however, that industry had responded rapidly to the previous Liberal government's much-criticized Scientific Research Tax Credit program. He also said the Tories' matching grant program offers research money to universities based on their ability to raise private-sector contributions.

The Canadian Labor Congress boycotted the conference after its president, Shirley Carr, said she was asked to address the gathering but was later bumped from the speakers' list because of her opposition to the Canada-U.S. free trade pact.

Return of scientific research tax credits sought

TORONTO (Staff) — Some Canadian business leaders have called for the return of a controversial scientific research tax credit that government officials admit cost taxpayers at least \$1 billion.

The recommendation is only one in a list of suggestions that 200 delegates at the first national conference on technology and innovation presented to Prime Minister Mulroney last week.

At the end of the three-day conference, industry and education leaders presented measures they feel will strengthen Canada's position in the world of high-technology.

The measures called for increased government research spending and the strengthening of import quotas and Canadian content rules to strengthen domestic industries.

Mulroney told delegates he would consider all recommendations.

The government announced a \$1.3-billion program last week to create centres of excellence at several research-oriented universities as well as a new scholarship program

for science and engineering students.

As well, the government announced a \$10-million public education program to increase awareness in the high-tech industry.

Mulroney said the government plans five additional regional conferences on technology.

Former University of Toronto president John Evans told delegates the federal government's tax reform package "is restrictive and stifles research growth in the country."

Before Finance Minister Michael Wilson's tax reform, industries starting research projects were able to write off the full cost against their corporate taxes.

With recent tax reform, the deduction has been cut to 75 per cent.

Evans, a former high-profile federal Liberal candidate, proposed the government rekindle the Scientific Research Tax Credit program to spur new growth in research development.

"It's vital and needed if Canada is truly going to become competitive

in a world setting," he said.

Initially introduced in 1983 by the Liberal government, the SRTC program was abused by some individuals who set up phoney research projects.

David Hennigar, director of Burns Fry Ltd., also spoke in favor of an SRTC program.

"While the SRTC program may have been poorly designed, leaving

it open to abuse, we believe the concept was sound and warrants reconsideration," Hennigar said. "We ask you not to disregard the possibility of enhancing the tax incentive system."

Researchers optimistic that this time Ottawa means business

TORONTO — It came late, very late in the term of the Mulroney government, this gathering to re-launch a research and development effort in Canada, but this National Conference on Technology and Innovation had a good feeling about it. It was as if new life were stirring and Canada's industrial elite began to make common cause about the urgency of putting research to work.

There have been national conferences on research and development before over the years; quite a few of them. This time, though, something was subtly but fundamentally different. Past conferences had brought bureaucrats, science leaders and a handful of industrialists together to deplore Canada's low science spending and for a few hours grope for ways of getting industry interested in innovation and harvesting its benefits.

Last week, industrial leaders, obviously hand-picked for the occasion but worldly wise about the benefits



Joan Cohen
Ottawa
Editor

of innovation and marketing skills, were full-fledged participants, with their concerns at centre stage.

"The government is challenged to do more," Prime Minister Brian Mulroney told the conference. "We accept that challenge. In turn, I ask what you will do to help establish the new industrial, technological and educational environment and infrastructures required to help Canada to become the world leader we want it to be." The challenge came none too soon.

Indeed, industry's concerns are many and varied and many views were aired:

□ Observers are taking the Mulron-

ey initiatives very seriously. They see his action in chairing the National Advisory Board on Science and Technology, his convening of the conference here and the call to arms in his speech as signalling a turning point in the government's commitment to Canada's research effort.

□ Science Minister Frank Oberle is receiving unusually warm tributes, in Ottawa and here, for his massive effort to canvas the views of the many Canadians concerned about science policy.

□ Brian Mulroney's \$1.3 billion spending plan for targetting centres of excellence and student science scholarships, announced in his opening statement, was clearly focussed on the long-neglected university science effort. But the conference itself was targeted at Canada's industrial research effort.

Observers were delighted that the conference had brought in industrial leaders, not their middle-rank representatives. The challenge now was

grim. At stake, as Alcan Aluminium's David Cuiver warned in a keynote speech, is Canada's survival.

"We are in danger of slipping backwards on the world scene and doing so irreversibly." The challenge used to be put in milder terms. But as the research effort has continued to lag, that is now scarcely an overstatement.

Still, Dr. Larkin Kerwin, National Research Council chairman, chatting between conference sessions, suggested that Canada may now be moving into an era when concerns about our technological progress will rate high among our national values, just as social concerns did beginning with the return of our soldiers after the war and long enough to get our whole social service system in place.

One or two other thoughts for the future:

The amount of \$1.2 billion does not go too far these days, so watch as the

tug-of-war gets under way for "centres of excellence" funding, destined to be distributed across the country.

"There are about 75 universities in Canada," Dr. Kerwin said, "of which about 50 are doing research. You could put a centre of excellence in any one of about 20 universities. I think their intention is to select something like half a dozen."

The competition clearly will be keen. "Oh there will be some pulling and hollering," Memorial University President Leslie Harris acknowledged. "There will be lots," Dr. Kerwin amiably corrected him. Dr. Harris's university, a centre for ocean research, will be very much in the running.

One other question, left dangling after this Toronto conference, was posed by the urbane Dr. Fraser Mustard, a ubiquitous promoter of inter-university networking on major frontier research.

"How far down in the government

do they understand what Mulroney is saying," he asked. "Does the finance department, which killed the investment tax credit? Or revenue Canada, which makes it so difficult for firms claiming deductions for R & D spending?"

"I do not believe half of the government understands what the prime minister is saying" about science effort.

Later, he elaborated: "Look at our country, as seen through the Macdonald Royal Commission, which is only two years old. It does not represent a science-oriented culture. It says R & D may be important for economic growth.

"The Macdonald Royal Commission represents us.

"So now you have a prime minister who stands up and says boldly that science and technology are key to economic growth. He can say that, but he now has to get a staff within his government that is committed to what he says."

Centre touted as lab leader

*Winnipeg technology experiment
called federal research prototype*

By John Douglas

Winnipeg Free Press

TORONTO — A federal experiment to combine industry, university and government research efforts in Winnipeg's National Research Council building has been touted as the prototype for national laboratories.

The \$36-million laboratory on Ellice Avenue, which lay empty for more than 18 months, has become one of the Science and Technology Department's brighter successes, said Frank Oberle, minister responsible for the department.

"You have to see it to believe it," Oberle said in an interview. "It's working very well and I am terribly excited about it.

"We hope it will establish the trend for research and development throughout the country."

The Canadian Institute of Industrial Technology has 24 tenants which occupy almost 60 per cent of the building's office and lab space.

20 projects

In all, there are more than 20 research projects involving smaller firms that otherwise might not be able to conduct research, said council president Larkin Kerwin.

Kerwin said other federal research laboratories in Montreal and St. John's, Nfld., have followed the Manitoba example.

"We believe this is the pattern that will now develop in all government laboratories."

Originally planned as a regional laboratory for the research council under the former Liberal govern-

ment, the plan was scrapped shortly after the Tories were elected in 1984.

More than a year later, the federal government decided to encourage new research by bringing together private industry, government experts and state-of-the-art facilities.

The government has used the centre to initiate research in computer software, robotics, microbiology and aerospace engineering.

Private industry has been lured by cheap rental space and the presence of government experts.

Six institutions, including the University of Winnipeg, University of Manitoba and Red River Community College have offices in the building.

'Great magnet'

"The program is a ground breaker for university participation," U of M president Arnold Naimark said. "It's been a great magnet for attracting young minds to the university.

"The chance to work in research using the very best equipment guided by government and industry experts is a real motivating force for young scientists."

Oberle said he would like to see centres like the one in Winnipeg across the country and hopes a federal research program will help achieve that goal.

Prime Minister Mulroney announced a plan last week to pump \$1.3 billion into selected universities to generate high-tech research.

Oberle refused to comment on reports that Winnipeg universities would be overlooked for political reasons when the grants are handed out.

Mulroney's spotty record on sci-tech

OTTAWA — Before they are old enough to know better, Canadian youngsters daydream about the wonderful things they are going to invent: Robots, miracle drugs, spaceships, wings.

Their sense of infinite possibility rapidly fades. So does their passion for discovery.

It doesn't take them long to sense that Canadian society perceives science as forbidding, boring and marginal to everyday life.

The result is that this nation has the lowest proportion of scientists per capita of any country in the western world.

Canada has 90 scientists for every 100,000 inhabitants. The United States, by contrast, has 280; Japan has 240; West Germany has 150; and Britain has 140.

Changing Canada's anti-science mentality has been one of the enduring themes of Brian Mulroney's career, both as a businessman and as Canada's 24th Prime Minister.

"An agenda that will help us to foster a culture of science and technology is key to securing our prosperity and our quality of life," he repeated last week, as he convened his long-promised National Conference on Technology and Innovation.

Most observers (and a good many of the 200 participants) saw the three-day gathering as little more than a backdrop for a well-



CAROL GOAR
National Affairs

publicized pre-election announcement. Mulroney launched the conference by promising to channel \$1.3 billion into scientific initiatives over the next five years.

But the meeting served a second, equally important, purpose. It marked the completion of Mulroney's science agenda.

The Prime Minister signalled this with a little-noticed remark in his opening speech. "We have put in place all the vital buildings blocks that will ensure solid and interesting progress for Canada," he said.

"We have not made all the progress hoped for. But I believe we have a good record of achievement in science and technology."

With these words, Mulroney invited Canadians to make their own assessments. So let's see how his record stacks up against his ambitious goals and bold promises:

□ As Opposition leader, Mulroney promised to double the percentage of the nation's resources devoted

to research and development, if he became Prime Minister.

Even with last week's \$1.3 billion commitment — which amounts to \$260 million a year — it is unlikely he will reach his objective.

At the moment, Canada spends about 1.3 per cent of its GNP (gross national product: the value of all goods and services) on research and development. That is about half the level of scientific spending done in the United States, Japan and Germany.

The percentage stood at 1.25 per cent when Mulroney was elected. In order to get it up to 2.5 per cent before the end of his mandate, he would have to persuade the provinces, universities and private sector to channel an extra \$7.5 billion a year into research.

The odds of this happening are extremely remote.

□ As president of Iron Ore Company of Canada, Mulroney called for a 20 per cent increase in the budget of the National Research Council, hailing it as "Canada's main research laboratory."

When he came to power, the National Research Council was receiving \$478.2 million from the Liberal government of the day. Its allocation is now \$408.3 million.

This is a drop of 15 per cent.

The Progressive Conservatives have offered two explanations for this apparent about-face. The first

is that money is tight. The second is that they want to shift the focus of scientific research from government laboratories to the private sector and the universities.

□ In his 1986 Throne Speech, Mulroney promised to set up — and personally chair — a National Advisory Board for Industrial Technology. He also pledged to introduce a Federal Science and Technology Strategy. And he said he would convene a National Conference on Technology and Innovation.

He has kept all three promises.

The National Advisory Board, a panel of 40 eminent Canadians from industry, medicine and the academic world, was established nine months ago. It has met four times. According to Dr. Fraser Mustard, who sits on the board, Mulroney comes to these meetings well-briefed, with a good grasp of the issues and interesting suggestions.

The government tabled its science and technology strategy last March. It was long on generalities and distressingly short on specifics.

And last week, Mulroney's long-promised conference on technology and innovation took place in Toronto. Delegates were divided on its value. They acknowledged that the meeting had raised the profile of science and technology, but grumbled that the Prime

Minister seemed more interested in politicking than listening to their views and recommendations.

There are a few more items to add to the ledger.

On the plus side, Mulroney has made science a senior ministry within his cabinet; he has set up a council of federal-provincial science ministers to get Ottawa and the provinces working together and he has put science in the headlines more than any other Prime Minister.

On the minus side, he has emasculated the Science Council, a feisty federal advisory agency; he has ignored pleas to increase the funding of the three federal councils that provide research grants to scientists, engineers and medical experts; he has failed to persuade most industries to join his research crusade and he has denigrated Ontario Premier David Peterson's forward-looking efforts to encourage high technology.

It adds up to a rather mixed record.

For all of Mulroney's good intentions, the signal that is still going out to millions of young people is that science is peripheral to Canadian life.

"Science, technology and innovation have been priorities of this government from the beginning," Mulroney boasted last week.

In words, yes.

In actions, not always.

Comité sur le libre-échange: les propositions du Québec écartées

DENIS LESSARD
du bureau de La Presse

QUÉBEC

Les communications entre Québec et Ottawa ont des ratés

L'année s'est mal engagée au chapitre de la consultation entre les gouvernements Mulroney et Bourassa. Dans deux dossiers, depuis le début janvier, les communications entre Ottawa et Québec ont fait défaut, et débouché sur des décisions fédérales qui ont pris de court les porte-parole politiques québécois.

Sans tambours ni trompettes, Ottawa a carrément écarté la semaine dernière une liste d'hommes d'affaires québécois, recommandés par le gouvernement Bourassa pour siéger sur le comité pan-canadien sur le libre-échange, le «Conseil consultatif sur l'adaptation», présidé par le président d'Entreprises Bell Canada, M. Jean de Grandpré.

A plusieurs reprises le ministre québécois du Commerce international avait souligné que Québec proposerait des hommes d'affaires québécois pour donner le point de vue du Québec au sein du comité de M. de Grandpré. Ces propositions furent faites au gouvernement fédéral juste avant Noël.

Or, le comité formé le 11 janvier dernier, ne compte pas d'autres porte-parole québécois que le président M. de Grandpré.

Le conseil comptera un universitaire albertain, M. Ernest Wagner, un homme d'affaire d'Halifax, M. Gordon Cummings, M. James McCambly, porte-parole de la Fédération canadienne du travail et Mme Jalynn Bennett, une femme d'affaires de Toronto.

«Je suis surpris, on pensait qu'il y aurait deux québécois sur ce comité, M. de Grandpré comme président et un autre pour le Québec», a lancé hier M. Ronald Poupard, porte-parole du premier ministre Robert Bourassa.

Tout comme au cabinet du ministre MacDonald, au bureau du premier ministre on n'était pas au courant qu'Ottawa avait publiquement annoncé la formation de son groupe de travail itinérant.

Après avoir vérifié auprès des fonctionnaires, M. Robert Jolicoeur, attaché de presse du ministre MacDonald, a toutefois indiqué qu'il semble que ce soit M. de Grandpré qui ait expressément demandé de limiter à cinq personnes le nombre des membres

du groupe qui doit faire des propositions à Ottawa quant à la mise en place de programmes de transition pour permettre à l'industrie et aux travailleurs de s'adapter au libre-échange.

Recherche

À ces problèmes de communication entre Ottawa et Québec, il faut ajouter les récentes annonces fédérales quant à un important programme de financement de la recherche universitaire.

Avec grands renforts de publicité, le premier ministre Mulroney a annoncé la semaine dernière, à Toronto, \$1,5 milliard de fonds fédéraux, sur cinq ans, pour financer notamment des «centres d'excellence» dans les universités canadiennes et des

bourses destinées aux étudiants en génie et en sciences appliquées.

Pour décider où iront les centres, Ottawa formera un comité indépendant formé d'experts de renommée internationale.

Or, il semble que le ministre québécois responsable de l'Enseignement supérieur, M. Claude Ryan ait reçu plutôt froidement ces annonces fédérales, faites sans trop de consultations préalables avec les provinces.

De telles discussions «sont toujours préférables avant plutôt qu'après», a laissé tomber publiquement M. Ryan.

Dans ce dossier, Québec attend toujours le texte officiel du projet fédéral dans le champ de l'enseignement supérieur, une compétence traditionnellement provinciale.

High-tech leaders seek to raise science profile

By Andrea Gordon Toronto Star

Canada's high-tech leaders say they hope Prime Minister Brian Mulroney's think-tank last week will raise the profile of science and technology in the country's boardrooms, classrooms and government offices.

The three-day conference didn't break new ground or spark new recommendations. But many of 200 delegates from business, universities and government still came away optimistic.

They cite two reasons.

Mulroney's presence moved high-tech into the spotlight at least for a while. And the conference focused on getting traditional industries into discussions aimed at developing a high-tech strategy.

Roy Woodbridge, president of the Canadian Advanced Technology Association, called it "an exercise in consensus-building and profile-raising.

"What we've really done here is raise the political priority attached to the issue and begun to cement a national consensus," he said.

And he said the importance of that "should not be underestimated."

Critics said the event amounted to a public relations exercise for Mulroney in a year that could see a federal election. But delegates said they were willing to put up

with that if it moves high-tech up on the national agenda.

Mulroney opened the event by pledging \$1.3 billion for several research programs over the next five years. That was welcomed as a good step. But many delegates said it simply amounted to making up for past government cutbacks.

The conference, promised 15 months ago in a government throne speech, brought together some of the top business and scientific minds in Canada for hours of discussions on how Canada should go about remedying a weak record in research and development spending, and how to make Canadian industry start developing and using technology to keep products competitive.

In the end, their major suggestions centred on two major thrusts: altering the tax system so it better supports research and new high-tech ventures; and heightening public awareness of the importance of science and technology.

Past reports, including recent ones from the advanced technology association and the Canadian Manufacturers' Association, have all made the same proposals.

And a similar conference in June, 1986, in Winnipeg covered the same ground and came out with many of the same suggestions.

Still, delegates said the exercise was

valuable in the attempt to get the message across to Canadian businessmen and government bureaucrats.

Now they want both to start acting on what they learned.

Stuart Smith, former chairman of the Science Council of Canada and organizer of the 1986 Winnipeg conference, said continuing discussions are needed to persuade Canada's traditional industries that they must adopt new technologies to survive.

"There's a cultural change that's going to take a long time but I think this meeting helps because people will hear the same messages over and over," he said.

"Now these ideas are at least being talked about as though they are commonplace."

John MacDonald, chairman of MacDonald Dettwiler & Associates, a remote sensing firm based in Richmond, B.C., said the importance of last week's conference was to draw Canadian business and government into the fold.

"Among our community, we've had this consensus for a long time," said MacDonald, an engineer and former university professor.

But he said increasing Canadian development and use of new technologies needs a

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cont'd

High-technology leaders cite a new level of optimism

Continued from page C1

united approach from everyone involved.

Now that the prime minister's highly touted crowd has agreed on suggestions, the next step is to start fixing what can be immediately changed and continuing specific talks on the broader long-term policy changes.

"We have to begin with the things we can do right away, particularly in the tax and investment areas, and then begin in a co-ordi-

nated and persistent way to attack the national policy issues," said Woodbridge of the advanced technology association.

He said federal and provincial budgets and government bureaucracies should start to reflect the consensus reached at the meeting.

Association members are hoping specific changes will start at Revenue Canada, where they want to see a streamlining of the administrative process for companies that want to claim tax credits for re-

search and development.

Small companies in particular have been complaining for 18 months about the lengthy audit process, red tape and restrictions on what kind of research qualifies for tax credits.

They say it can take up to two years to get back credits. The delay can be financially crippling, leaving the firms hardly able to continue operations.

Woodbridge also said some of the provinces, including Ontario,

should stop taxing federal tax credits as income because it is inconsistent with what Ottawa is trying to achieve through the program.

The high-tech industry also hopes that Ottawa will review measures in the recent tax reform package that limit the amount a company can claim for research and development tax credits — a move that the advanced technology association said will remove \$50 million a year of industrial R

and D.

"There's no need to wait around on these things," Woodbridge said.

After that, he said, there should be more targeted discussion on new mechanisms that can be put in place to bring about more research and development in the private sector.

Canada's R and D spending has been the cause of a lot of political heat for Mulroney.

In his 1984 election campaign, Mulroney promised to more than


double Canada's R and D spending to 2.5 per cent of gross domestic product. That would be comparable to that of Canada's major competitors.

But the number hasn't budged from 1.3 per cent.

Doug Barber, president of Gennum Corp. and a board member of the Electrical and Electronic Manufacturers Association of Canada, noted that Ottawa can use

many methods other than direct funding for research.

Darts and laurels

 The Progressive Conservative government. For changing the color of Canada's red maple leaf flag — to Tory blue: — on at least one official government letterhead. The tacky blue pennant appeared on government stationery printed for the \$1 million National Conference on Technology and Innovation last week in Toronto. If the government stops caring how it displays Canada's official flag, what does that tell ordinary Canadians about respect for our symbols? Besides, look what the blue maple leaf has done lately for a certain bedraggled National Hockey League club.

Brenda Thompson, a Nova Scotia single mother on welfare. For taking on Nova Scotia's former social services minister Edmund Morris. Morris released confidential details of Thompson's private life after she wrote a critical article about his conduct as minister. As a result of her private lawsuit (the provincial government refused to prosecute), Morris was convicted of breaching the province's privacy laws. It's a valuable lesson for ministers abusing their positions.

Don't ruin high-tech centres with politics, Ottawa warned

By Andrea Gordon Toronto Star

The Mulroney government's pledge to help fund new national centres for advanced research isn't enough for some members of the high-tech community.

Along with the money, they want another promise from Ottawa — to keep the centres out of politics.

And they say that promise is essential to make the program a success.

Prime Minister Brian Mulroney announced the so-called "centres of excellence" program last week as he kicked off his three-day technology conference in Toronto.

Although details were scarce, he said the number and location of centres, and the amount of money they will receive, will be decided by an independent jury of top international scientists.

The program is aimed at bringing together universities and the private sector to conduct long-term research in technologies viewed as critical to Canada.

It will involve up to \$300 million of government money over five years as well as funds from industry participants.

And at a time when advanced researchers are clamoring for funds, it will no doubt spark fierce competition from across the country.

The winners probably won't be announced until the end of the year but skeptics fear the Mulroney government, gearing up for a federal election that could be this year, may be tempted to use the program as a way of providing regional plums.

Warnings came quickly from several speakers at last week's conference.

"Let us not allow regional or institutional politics to make a caricature of how they are developed," warned John Evans, chairman of biotechnology firm Allelix Inc.

David Hennigar of investment dealer Burns Fry Ltd. told delegates "regionalism must not be allowed to undermine this important initiative."

The Prime Minister's national advisory board on science and technology will be watching closely to try to ensure the centres are judged primarily on scientific merit, member Alex Curran said in an interview this week.

Curran said there will be regional considerations "to some degree" to ensure research strengths throughout the country are in-

See RESEARCH/page C4

Research centres need independence Ottawa told

Continued from page C1

cluded, but scientific value must be the top priority.

Curran, formerly president of SED Systems in Saskatchewan, is now president of the Telecommunications Research Institute of Ontario, one of seven centres of excellence that Ontario set up last year.

Ottawa will get a lot of help because Ontario already has a similar program in place. That program provides provincial funds of \$200 million over five years for seven centres conducting research that ranges from laser and light-wave technology to space and terrestrial science.

It's still too early to determine the success of Ontario's effort, but Curran said some technology worked on at the telecommunications centre has already been transferred from the laboratory over to one of the member companies.

But the Ontario process was long and difficult. Funds started to flow to the centres this month, six months after the winners were announced and after a long process of working out detailed contracts.

Many of those involved with Ontario's program favored a national program and now hope Ottawa will use a similar model.

In Ontario's case, choices of the international jury were subject to review by the Premier's high-tech council and then the provincial cabinet. But then they were made public.

None of the panel's choices was altered in the process.

Geraldine Kenney-Wallace, chairman of the Science Council of Canada and a member of the Premier's council, said putting the choices in the hands of an independent panel is "absolutely essential" to make the national program work effectively.

Fair process

"This is not an exercise in geography, it's an exercise in excellence," she said. "Everybody has to be able to see that the process is fair."

Fraser Mustard, chairman of the Canadian Institute for Advanced Research and the man responsible for setting up Ontario's jury, agreed that the success of the program rests on choosing centres strictly on scientific merit.

The centres of excellence are aimed at bringing together universities and the private sector to share long-term research in technologies such as microelectronics, telecommunications and industrial materials.

Those technologies are viewed as important to helping Canadian industry remain competitive into the next century by helping industry make better products and improve methods of production.

And because world demand for high-tech products is growing so fast, developing key technologies is also important to Canada's trade position.

Both Kenney-Wallace and Mustard warn the issue of location should not be overblown because the centres won't be contained in one building.

Instead they will consist of networks of universities and companies from anywhere around the country that will be collaborating on research projects.

Brain drain

"We're not talking about bricks and mortar; we're really talking about people," said Kenney-Wallace.

She sees the centres as a way to try to reverse the "brain drain" — a sore point for Canada because so many scientists tend to leave the country in search of better research opportunities.

The Ontario program has already generated many inquiries from interested scientists outside Canada, she said.

Other provinces, including British Columbia, are also on the way to setting up similar centres and those will also be eligible to take part in the national program.



Kenney-Wallace involved with Ontario's program favored a national program and now hope Ottawa will use a similar model.

Le Conseil national de la recherche, symbole de la réussite scientifique

Presse canadienne

OTTAWA

■ Vous êtes-vous déjà demandé pourquoi les oiseaux entrent en collision avec des avions, ou pourquoi les gens grandissent dans l'espace?

Une armée de 10 000 chercheurs anonymes tentent pour leur part de répondre à ces questions.

La plupart des ministères fédéraux emploient des équipes scientifiques, ignorées du grand public à moins d'une importante découverte ou d'une crise.

Un peu plus tôt ce mois-ci, même le premier ministre avait oublié leur existence. Aucun chercheur du gouvernement n'avait été invité à la conférence sur la science et la technologie de M. Mulroney à laquelle assistaient 200 personnes, comme l'a reproché leur syndicat.

Ces fonctionnaires n'oeuvrent pas tous dans de confortables petits bureaux. Certains

ramassent des huîtres au bord de l'Atlantique, à la recherche de mollusques intoxiqués. On en retrouve d'autres sur des bateaux, dans des campements de l'Arctique, ou dans des laboratoires répartis à travers le pays.

Dans un laboratoire de recherche alimentaire, par exemple, un chercheur d'Agriculture Canada essaie de découvrir comment produire une meilleure pomme de terre pour les croustilles. Les Canadiens mangent chacun en moyenne 2,5 kg de chips par année, et environ 30 p. cent des pommes de terre canadiennes sont destinées à cette production qui nécessite une patate de haute qualité qui ne noircit pas et ne ramollit pas.

Oiseaux et avions

Il y a également les oiseaux qui, dans leur ensemble, causent pour \$2 millions de dommages aux avions canadiens chaque année. Transport Canada s'intéresse à ce problème depuis des années, essayant de trouver le moyen d'empêcher les oiseaux et les avions de se heurter mutuellement.

Une étude démontre également que les maux de dos dont souffrent les astronautes

sont reliés à l'absence de gravité dans l'espace. Celle-ci fait en sorte que les vertèbres s'éloignent les unes des autres, d'où il découle également que les gens sont alors plus grands.

Un projet du Conseil national de la recherche (CNR) consiste donc à étudier des techniques pour diminuer la douleur au cours des premiers jours passés dans l'atmosphère.

Le conseil est d'ailleurs l'un des plus importants réservoirs de chercheurs au gouvernement. Il compte environ 1 000 ingénieurs, chercheurs et techniciens dans des laboratoires à travers le pays.

Créé en 1916 pour promouvoir la recherche scientifique dans différents domaines, le CNR est toujours considéré comme le symbole de la réussite scientifique au Canada.

C'est d'ailleurs là que travaille le premier récipiendaire canadien d'un prix Nobel, Gerhard Herzberg, qui a été récompensé en 1971 pour ses travaux sur la spectroscopie.

De récentes découvertes en génétique et en biotechnologie permettent aujourd'hui au conseil de continuer à se situer à l'avant-garde de la recherche scientifique.

Off-ignored scientists ponder mysteries of space, soggy chips

By Marlene Orton
The Canadian Press

Ever wonder why birds hang into jets or why people get taller in space?

An army of 10,000 mostly anonymous federal government researchers and engineers is hunting for the answers.

Most federal departments have scientific teams which are usually overlooked by the public except when there is an important discovery or a crisis.

Earlier this month, their own prime minister neglected them. No representative had been invited to Prime Minister Brian Mulroney's science and technology conference along with 200 other participants, their union complained.

You won't always find these public servants at meetings or in nice little offices. They'll be off digging up clams in Atlantic Canada searching for poisoned shellfish. They work on research ships, in

Arctic campsites or in laboratories around the country.

In one food research lab, for example, an Agriculture Canada scientist is investigating how to breed a better potato-chip potato. Canadians eat an average of 2.5 kilograms of chips a year. And about 30 per cent of potatoes in Canada are made into chips.

Getting the munchies is a year-round craving which means chip makers need a high-quality potato that won't turn black or go mushy in storage.

Then there are the birds. These critters — from the humble little robin to whole flocks of migrating Canada geese — cause an estimated \$2 million damage to Canadian aircraft each year. So Transport Canada has been dealing with the problem for years, trying to keep the birds and planes from bumping into each other.

Research shows back problems among astronauts is associated with the absence

of gravity in space. Prolonged zero-G, as it's called, causes vertebrae in the back to spread apart, making people taller in space.

In a project for the National Research Council, scientists are studying techniques to ease the pain most common during the first few days in space. The National Research Council runs the Canadian astronaut program.

The council has one of the government's biggest stables of scientists with about 1,000 engineers, researchers and technicians on staff in labs around the country.

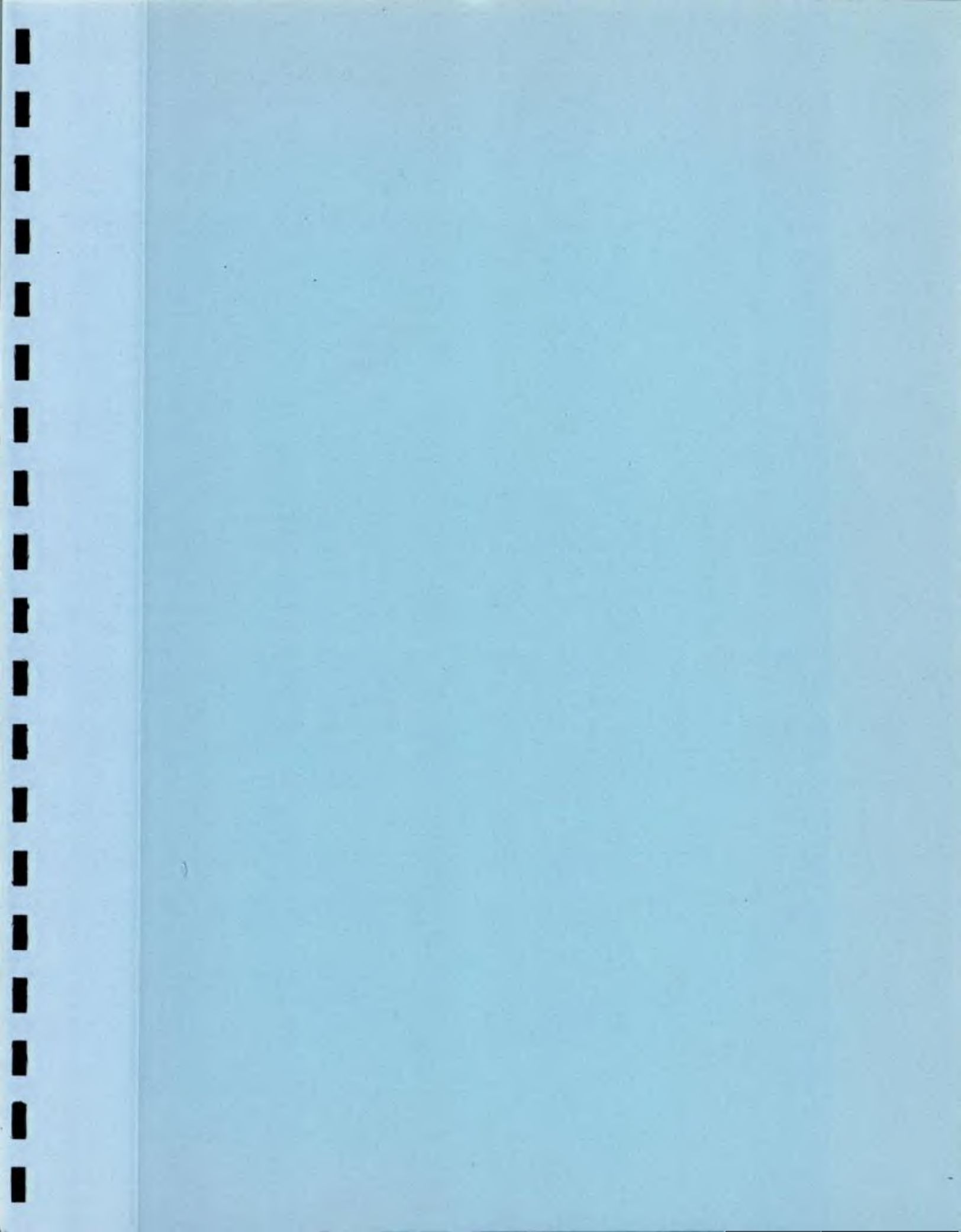
Created in 1916 to promote scientific research in assorted fields, the council is still regarded as the hallmark of scientific achievement in Canada.

It is also home to Canadian Nobel prize winner, Gerhard Herzberg, who took the prize in 1971 for his work in spectroscopy. In spectroscopy, every molecule can be identified and coded by

its unique pattern in the light spectrum.

Other recent achievements include:

- A bomb sniffer more sensitive than a dog's nose to collect and analyze the concentration of certain odors in air samples. Scintrex Ltd. of Toronto sells the device both in North America and overseas.
- A waterjet cutter more commonly used in heavy industry to cut metal or rock has been refined to slice through fur and aluminum siding without ever dulling. The nozzle is made of artificial sapphire with an opening smaller than the diameter of a human hair. Indescor Hydrodynamic Inc. of Concord, Ont., now is producing it.
- An early-warning sensor for lightning. Mounted on an airplane wing, the sensor measures the electrical field inside clouds so pilots can shift course and stay out of trouble. The sensor now is being developed by Canadian Marconi of Montreal.



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PROGRAM: EMISSION:	PAYSAGES POLITIQUES	DATE: DATE:	LE 10 JANVIER 1988
NETWORK / STATION: RESEAU / STATION:	RADIO CANADA/CBOFT	TIME: HEURE:	11H00

DÉVELOPPEMENT CANADIEN DES RECHERCHES SCIENTIFIQUES

CBOFT: Cette semaine, nous allons parler du paysage scientifique canadien. En ces terres de révolution technologique, quelle importance accordons-nous ici au développement scientifique, à la recherche et aux chercheurs? Comment se fait-il qu'il y ait tant de chercheurs qui désirent quitter le Canada? Nous savons par ailleurs, après en avoir déjà parlé à cette émission, que nous importons beaucoup de la technologie des autres. Cela veut-il dire que nous ne soyons pas très innovateurs? Aussi quels sont les domaines scientifiques qui intéressent davantage les Canadiens? Dans lesquels excellent-ils par exemple?

Nous allons traiter de tous ces sujets et d'autres avec notre invité, Madame Veyra Vétice Freeburg(?), vice-président du Conseil des sciences du Canada. Et cette semaine, notre interviewer invité est la journaliste, Dorothée Giroux de Toronto.

Alors bonjour. Madame Freeburg, d'abord le Conseil a un rôle consultatif, n'est-ce pas? un rôle à jouer qu'il joue d'ailleurs depuis 20 ans auprès du gouvernement, des universités

...2

et des industries sur des possibilités de recherches et de développement au Canada, mais aussi on vous retrouve fort intéressée par le développement dans les régions, par les régions elles-même. Est-ce que vous pourriez d'abord nous parler de cet aspect là de votre mandat?

FREEBURG: Bien nous sommes... pour commencer, nous sommes un organisme créé par le gouvernement fédéral et notre mandat a donc été formulé pour parler à propos de la politique scientifique à l'échelle nationale, à l'échelle globale du pays. C'est le premier aspect important dans notre... dans notre mandat tel que formulé dans l'Acte du Parlement qui créait le Conseil. Dans notre approche cependant, en abordant divers problèmes d'intérêt scientifique ou touchant la technologie, nous nous sommes trouvés à soulever des problématiques qui étaient sectorielles et de par ce biais de l'approche sectorielle, très souvent nous avons fait des recommandations qui touchaient directement le développement régional. Même si dans notre mandat en fait, nous n'avons pas abordé la problématique de cette angle là, nos recommandations très souvent avaient des débouchés régionaux(sic).

REPORTER: Justement quand les recommandations étaient régionales, à quel type de recommandations on fait affaire? Qu'est-ce que vous avez recommandé pour certaines régions?

FREEBURG: Bien le type de recommandations que nous faisons s'adresse en fait à toute la gamme des intervenants possibles qui seraient impliqués dans le développement scientifique

ou encore dans les applications technologiques. Cela veut dire d'abord les gouvernements, mais non seulement le gouvernement fédéral mais aussi les gouvernements provinciaux, les gouvernements si vous voulez des municipalités aussi. Nous avons eu des recommandations à ce niveau là. Et par ailleurs, différents acteurs - si vous voulez - sur la scène nationale, donc les grandes compagnies, l'industrie, les chercheurs et ainsi de suite. Le grand public d'ailleurs aussi fait partie de notre mandat. Informer le grand public, le rendre capable de participer de façon éclairée à un débat qui permet de faire des décisions éclairées dans le système démocratique.

REPORTER: Mais quand le Conseil avait des recommandations régionales, de quel type ces recommandations là étaient-elles concrètement là? Ça avait l'air de quoi?

FREEBURG: Ah ça serait de quoi je pourrais vous mentionner un travail récent sur l'érosion de sol. Nous avons abordé la problématique de la perte de productivité que cause l'érosion. Or, l'érosion naturellement touche les régions en fait d'exploitation agricole. C'est la première raison contre les Prairies du Canada, mais de façon surprenante aussi - d'autres régions par exemple, l'Ontario est aussi très touchée par l'érosion. De ce point de vue là, vu que ces secteurs là comportent une composante extrêmement importante pour l'économie d'une région, ces recommandations sont très importantes pour ces régions particulières.

CBOFT: Et vous avez été appelée, j'imagine, à évaluer

les régions dans ce sens là, dans votre étude sectorielle et à comparer aussi des régions. Quelle est la situation région par région ou les comparer les unes avec les autres sur le plan de la recherche, sur le plan du développement scientifique?

FREEBURG: Le Canada, je pense, est très fortunée dans le sens que nous possédons à l'échelle nationale toute une chaîne d'universités qui sont vraiment des universités dans le sens littéral (inaudible) - c'est-à-dire que un Canadien peut obtenir une éducation de niveau universitaire littéralement dans toutes les provinces du pays et cette éducation se compare, de façon très respectable, avec ce qui se fait dans d'autres pays. Ceci dit, dans le secteur de la recherche avancée, évidemment ce sont les grandes universités qui sont à la pointe et sur ce niveau là, il y a des disparités régionales qui sont très importantes et qui font la problématique à laquelle s'adressent les politiques de subventions. Des conseils subventionnaires ont toujours affronté la difficulté qu'ont les petites régions, les petites universités dans les petites provinces, à maintenir un niveau d'essor d'une recherche et ainsi de suite.

REPORTER: Les universités les plus riches, les plus importantes au pays sont situées au centre. Est-ce qu'on peut en conclure que les projets de recherche, ayant le plus d'envergure, les projets les plus intéressants sont aussi au Québec et en Ontario?

FREEBURG: Pas vraiment parce que il y a des secteurs dans

lesquels par exemple Dalhousie à Halifax est à la pointe, la recherche océanographique est très forte sur la Côte-Est du Canada. Il y a d'autres secteurs qui sont extrêmement bien développés dans les universités sur la Côte-Ouest du Canada. Dans les provinces des Prairies aussi, en Alberta en fait - surtout à l'époque évidemment du boum pétrolier - a été capable d'implanter un certain centre de recherche tout à fait impressionnant et de ce point de vue là, s'il y a bien sûr des centres d'excellence dans certaines universités, Dieu merci et non, ces centres ne sont pas tous en Ontario et en Québec. Il y en a ailleurs aussi.

CBOFT: Quand on dit qu'au Canada on tarde à prendre le virage technologique - des économistes et d'autres scientifiques nous l'ont dit à cette émission là - est-ce que ça veut dire que l'ensemble du Canada, le gouvernement fédéral, l'ensemble des provinces, différentes régions tardent à s'adapter à cette révolution technologique? De quoi parle-t-on au juste?

FREEBURG: Mais ça c'est une question extrêmement complexe. Si vous permettez, j'aimerais essayer de l'aborder tranche par tranche...

CBOFT: D'accord.

FREEBURG: ... par différentes tranches parce que c'est difficile de répondre d'un coup. On peut envisager le développement technologique sous différents aspects. Le premier,

le plus simple, ce serait peut-être de regarder la productivité et l'équilibre des importations et des exportations dans un pays. Or, à ce titre, le Canada a quelque chose comme 12 milliards de déficit en terme de équilibre en importations et exportations dans le secteur de la haute technologie. Ce qui se passe, c'est que le Canada est un pays riche, est un pays développé - oui - en terme de niveau de vie, mais ce niveau de vie, cette qualité de vie que nous avons au Canada est due essentiellement à l'exploration et l'exploitation de nos ressources naturelles que le Canada exporte et c'est à ce niveau là que nous retirons notre plus grand revenu.

Ce qui se passe, c'est que d'année en année, nous accusons un retard dans le développement de produits manufacturiers, d'éléments qui comportent un élément technologique dans la production, dans l'invention et dans la distribution et à ce niveau là, les courbes autre que cette... ce retard va en s'accroissant d'année en année et on peut prévoir que dans les années à venir, à moins qu'il n'y ait un changement dans les politiques, ce retard peut devenir tellement grave que notre richesse... la richesse que nous dérivons de nos ressources naturelles ne suffira plus pour maintenir le niveau de vie auquel nous sommes habitués.

D'autres aspects qu'on pourrait envisager, c'est par exemple dans un pays le... le nombre de personnel spécialisé, le nombre d'ingénieurs, de techniciens parmi des populations, parmi l'habitat par exemple. Sur des indexes de ce genre, sur des indices de ce type - et bien malheureusement, le Canada ne fait pas très bonne figure. Et nous avons... par exemple, on constate qu'au Japon ou aux États-Unis, on a quatre ou cinq fois ou dix fois plus de

personnel qualifié dans ...(inaudible)... ou dans les aspects techniques que nous en avons au Canada. Ça veut dire que déjà sur le plan des ressources humaines ou dans la possibilité d'emploi dans ces secteurs là, le Canada n'est pas prêt.

Et finalement, l'élément le plus important, c'est que nous avons au Canada une carence de grandes compagnies qui oeuvrent dans le domaine du développement manufacturier, de la fabrication, de l'utilisation de la haute technologie. Et si on compare la performance du Canada par rapport à un pays comme la Suède qui n'a que quoi? huit et demi million d'habitants, qui est un peu plus petit que le Canada, et si on faisait des extraits(?) de pollution pour s'attendre, pour se dire combien de compagnies multinationales devrions-nous avoir canadiennes au pays? un retard - le Canada est très grave.

REPORTER: Madame Vétice Freeburg, le problème est complexe.

Vous venez de nous en donner un aperçu. Les causes sont-elles toutes aussi complexes? Est-ce que c'est un problème de financement? Est-ce que c'est un problème d'inquiétude? À quoi est dû ce retard là?

FREEBURG: Je pense que le retard est dû surtout au fait que ça traite d'un marché pendant très longtemps avec les stratégies que le pays avait développé. Le Canada s'est créé à base de l'exportation de ressources faites naturelles. Cela a permis de développer le pays et ça a marché très bien. Les pays, je pense ce développement a été accéléré par le fait que nous avons des transports par les grandes voies fluviales et les Grands Lacs,

les voies d'eau donc qui permettaient le transport et les communications. Ensuite le pays, comme Monsieur Barton(?) là dit, a été forgé par la construction des chemins de fer qui a permis donc de transporter les denrées et les gens, d'une part, d'un pays à l'autre. Et pendant très longtemps, cela a suffi, ça a marché très bien.

Or, le monde... et bien le monde a évolué. Il y a un changement et nous avons une révolution post-industrielle qui est en voie de développement en ce moment. Et là, je pense que le Canada a pris un retard.

CBOFT: Pour faire suite à la question fort pertinente de Dorothee, est-ce que une politique par exemple que le Conseil voudrait voir implanter depuis plusieurs années, cette politique de création d'un réseau parallèle de Conseil métropolitain de technologies - est-ce que ça ça n'aiderait pas? Quand on pense qu'il y a 24 régions métropolitaines au Canada, est-ce que la création de conseils parallèles de technologies et les conseils métropolitains ne viendraient pas aider, n'est-ce pas?, à cette... à ce retard, ou combler ce retard?

FREEBURG: Voilà, alors. Le retard est causé par le fait que il n'y a pas d'investissement au Canada, pas d'investissement suffisant dans la création de nouvelles compagnies, de nouvelles compagnies qui utilisent un composant technologique. Les raisons à cela sont multiples. Les nouvelles(?) étant d'avoir l'hésitation des institutions financières canadiennes à s'aventurer, appuyer le capital de risque d'autre part. Il y a des inventions

qui ont été faites au Canada et qui ne peuvent pas être implantées faute de capacité de recevoir dans l'industrie qui se fait. Nous avons une industrie qui est sous-développée, qui manque de secteur, qui est troquée(?) dans son développement et donc même si il se fait, disons, dans une université canadienne une invention intéressante, qui aurait des applications qui pourraient créer des emplois - et bien il y a une difficulté d'implantation parce que les ressources ne sont pas là du côté industriel.

CBOFT: Ce que vous dites en fait, c'est ailleurs qu'on va l'appliquer finalement? ...(inaudible) à l'entrée, mais c'est ailleurs...

FREEBURG: Et voilà. Alors très souvent... trop souvent, on invente des choses au Canada et on les vend aux États-Unis ou au Japon. C'est là-bas que vont se fabriquer des choses et on va les importer, on va les acheter.

CBOFT: Mais parlez-moi plus précisément là de ces conseils métropolitains de technologie que dont... dont vous avez suggéré la création en 1984, si ma mémoire est bonne...

FREEBURG: Oui.

CBOFT: ... et comment est-ce que ça a fonctionné? S'il y a 24 centres au Canada, il y en aurait combien par exemple à l'heure actuelle qui aurait bien compris et mis en

application cette recommandation là de votre Conseil?

FREEBURG: Et bien, peut-être un peu pour expliquer la raison de cette recommandation, l'idée était que dans une région donnée ou disons, en sommes pour métropolitains, ce qui manque souvent, c'est la communication entre les différents secteurs, les différents acteurs du jeu. Ainsi, s'il y a une invention dans une université, il serait bon que l'inventeur, le scientifique soit en contact avec le monde des affaires. Il y a, après tout, des gens au Canada qui sont prêts à prendre des risques, qui sont prêts à investir, à prendre des opportunités avec l'idée que les profits - si ça marche - pourraient être extrêmement importants. De même, il y a quand même des... dans le secteur industriel, des compagnies qui seraient prêtes à diversifier, à entreprendre de nouvelles initiatives et ce qui manque souvent, c'est la communication entre elles. C'est beaucoup plus facile de communiquer Nord-Sud avec... avec les États-Unis où les choses sont déjà très rôdées, très bien en marche. Et pour donner un coup de pouce à... à la communication et aux initiatives locales au Canada, l'idée était que ces conseils métropolitains seraient une espèce de pépinière pour l'ensemble des régions et pour permettre des communications entre eux. Et d'ailleurs à ce sujet, il y a des certains ateliers que le Conseil avait tenu lors de la préparation de son rapport sur la politique industrielle où il y a... nous avons des cas concrets, des gens qui se sont connus pour la première fois, même s'ils habitaient la même région métropolitaine, en cet atelier là, et qui sur place ont commencé à faire des affaires, à en faire des ententes...

CBOFT: OÙ était ce... au juste?

FREEBURG: Oh, à plusieurs endroits. À Lethbridge en Alberta, je pense que dans le Grand-Nord, même à Whitehorse et certaines... certains ateliers que nous avons eu dans les Maritimes, dans bien des endroits. Et bien des villes ont d'ailleurs exprimé le désir de poursuivre ce genre d'initiatives. Malheureusement au Conseil des sciences, nous n'avons pas les ressources pour faire un suivi détaillé des recommandations que nous avons faites. Et de ce fait, je ne peux pas vous dire statistiquement combien de centres métropolitains ont en fait mis en marche...

CBOFT: Quelle est l'ampleur du réseau à l'heure actuelle?

FREEBURG: Malheureusement, nous n'avons pas ces rapports, ces données là.

REPORTER: Mais dans le même sens, le gouvernement de l'Ontario a mis sur pied des centres d'excellence. Il y a six centres d'excellence où on concentre, où on coordonne la recherche et dans chacun... sur chacun des sujets, il y a une quinzaine d'entreprises. Il y a trois ou quatre universités qui travaillent sur des projets comme pour arriver à un maximum de potentiel. Est-ce que ça c'est le genre de solutions auxquelles le Conseil pense aussi pour mieux coordonner la recherche et mettre en marché le produit... la recherche des universités?

FREEBURG: Absolument. C'est tout à fait dans la ligne des recommandations que le Conseil fait depuis nombre d'années et ça me fait très plaisir de voir que il y a des applications qui se font et en général, on pourrait dire que le climat au Canada s'améliore beaucoup en ce qui concerne la Science et la Technologie. Les scientifiques nous diront qu'il y a encore du chemin à faire, beaucoup de chemins à faire, mais il y a quand même un certain virage au moins au niveau de la prise de conscience de l'importance de nous réorienter.

REPORTER: Mais ça pose quand même certains problèmes, ces centres d'excellence. Il y a des scientifiques qui disent que finalement la recherche n'est axée que vers les intérêts commerciaux et les universitaires, eux, c'est ce que les universitaires disent et les entrepreneurs, eux, blâment un peu les universitaires pour leur manque de connaissance en gestion de la recherche. Est-ce qu'il y a des compromis à faire pour plaire aux deux parties? Est-ce qu'il y a moyen de trouver un point commun pour que ça fonctionne au goût de chacun?

FREEBURG: Ah oui, et ça c'est un travail qui est à faire. Il y a bien sûr un apprentissage à faire pour les uns et pour les autres. Et à ce sujet, le Conseil des sciences du Canada vient de terminer une étude sur le lien entre les universités et les entreprises qui comportait des volets différents en terme de regarder le type d'interpasse qu'il y avait entre les chercheurs, la recherche fondamentale et les possibilités d'application, les

entraves possibles qu'il y avait. Au contraire, les atouts de ce type de démarche, comment la favoriser et nous avons trouvé à l'échelle du pays, en fait, un très grand enthousiasme et une très grande volonté de vraiment nous lancer dans ce secteur et aussi une réalisation qu'il faut le faire. Il faut le faire.

CBOFT: Donc vous n'avez pas encore trouvé de formule efficace d'intégration? jusqu'à...

FREEBURG: Et bien au contraire, il y a plusieurs formules - voyez-vous. C'est-à-dire qu'il y a différentes formules et nous en avons regardé plusieurs. Par exemple, c'est dans certaines provinces - ce qu'on veut avoir, c'est les parcs industriels où on va essayer de rassembler, si vous voulez, en quelque sorte dans une... dans un même immeuble parfois différents secteurs de recherche et avec l'appui du gouvernement provincial, ce genre d'initiatives est surtout important pour les petites entreprises ou pour l'éclosion de nouvelles entreprises qui ont besoin d'un appui initial et qui n'ont pas les ressources encore elles-même pour développer des prototypes. Elles ont besoin d'aide pour le marketing, toute sorte d'appuis, qu'il serait très difficile pour eux tout seul de faire, mais qui... qui serait un bon investissement à l'échelle de la province parce que si ils ont du succès, et bien ils vont créer des emplois, ils vont... ils vont générer des produits et ils vont contribuer à la richesse des pays.

REPORTER: C'est une vue(?) très optimiste, mais il y a

quand même des industriels et des scientifiques qui s'inquiètent surtout après le lundi noir en octobre dernier, parce que déjà ceux qui se spécialisent en recherche, ceux qui ont des intentions des recherches ont de la difficulté à trouver du financement. Vous l'avez vous-même mentionné. On craint encore plus les difficultés après. Il y a personne qui va prendre des risques dans la recherche maintenant. Qu'est-ce que le Conseil des sciences peut recommander?

FREEBURG: Ça c'est un problème très difficile parce que dans le système capitaliste, voyez-vous, la chose curieuse c'est que le facteur psychologique de la confiance du public est extrêmement importante. Et je pense que le fameux lundi noir, c'était surtout une crise de confiance de la part du public, son désir d'anticiper et peut-être quelque chose de très sûre. Or, le malheur c'est que dans le développement technologique, il faut prendre des risques. Et on sait très bien de par les statistiques à date, que sur 20 nouvelles entreprises qui vont se lancer dans une nouvelle technologie, il y en a peut-être une qui aura beaucoup de succès et 19 autres qui risquent de ne pas avoir de succès. Et donc, à quelque part, il faut avoir des mécanismes qui permettent d'amortir les risques, qui permettent que l'on se lance dans le nouveau, qu'on prenne des chance, mais qui permettent aussi de... de ménager un peu les dégâts.

CBOFT: Justement Madame Freeburg, est-ce qu'un mécanisme comme la création par le gouvernement fédéral d'un ministère de Développement industriel régional marié à la technologie

et aux sciences peut aider dans ce sens là?

FREEBURG: C'est notre grand espoir. Le Conseil a préconisé ce genre d'initiatives depuis très longtemps et l'idée, c'est que le gouvernement - de toute manière - investit des sommes considérables dans le développement régional. Tant qu'à le faire, il serait bon de le faire d'une manière éclairée, d'une manière qui tienne compte des réalités du monde moderne et aussi des potentialités dans le monde moderne que offre le développement technologique. Et c'est donc marié finalement de créer une passion importante politique dans le pays, tout à fait légitime les aspirations des gens des différentes régions de participer à l'essor économique. Mais en même temps, lui donner des... lui donner des bases plus solides, un peu plus solides et de par le même mécanisme, contribuer à l'avancement du Canada et à rattraper un peu de ce retard que nous avons au plan technologique.

REPORTER: Madame Vétice Freeburg, la Communauté scientifique canadienne a été honorée en début d'année lorsqu'un de ses membres, un chimiste de l'Université de Toronto, Monsieur Polianey(?), a reçu un prix nobel. Mais quand les journalistes ont demandé à Monsieur Polianey qu'est-ce qu'il recommandait à ses collègues? quoi faire pour réussir? Sa réponse a été: et bien, allez travailler à l'extérieur. Est-ce que c'est pas un peu embarrassant pour le Canada des situations comme celles là?

FREEBURG: Un peu gênant, sans doute, oui. Enfin nous espérons

que ça a été un peu gênant.

CBOFT: Est-ce qu'il a raison en tout cas de conseiller de s'en aller, surtout aux États-Unis, j'imagine?

FREEBURG: Si on a de l'ambition.

CBOFT: Mais comment...

FREEBURG: Mais écoutez. C'est un peu relatif, hein?

C'est-à-dire que il y a bien des pays au monde où les chercheurs seraient très contents d'avoir les facilités que nous avons au Canada. C'est sûr. Par contre, si nous comparons ce qui est disponible au Canada avec les États-Unis qui sont tout à côté, et bien alors les comparaisons sont très à notre désavantage. Il y a toute une échelle de possibilités et c'est sûr que le Canada tire la patte derrière les États-Unis. Il n'y a aucun doute.

REPORTER: On affirme souvent que le développement industriel passe par l'innovation technologique. À quel avenir on peut penser pour les pays quand on sait qu'il y a au moins 650 chercheurs qui quittent le pays d'année en année?

FREEBURG: Jusqu'ici, le Canada a survécu en comblant ses lacunes par l'immigration. Mais il faut comprendre que l'immigration dépend justement sur le fait qu'il y a des pays dans le monde où il y a des guerres, où il y a des crises politiques

ou encore le sous-développement économique. Alors à un certain niveau, nous tirons profit des malheurs des autres. Et on se demande si c'est une façon... si on peut indéfiniment penser de continuer de cette sorte là.

CBOFT: Ce qui n'est pas démontré par contre, c'est que les 2,000 chercheurs qui peuvent entrer au pays, au Canada par année, venant de l'étranger sont-ils de la même trompe que les 650 qui sont partis de chez-nous, surtout pour les États-Unis? Je crois savoir que les 650 qui quittent sont parmi nos meilleurs, n'est-ce pas?

FREEBURG: Et ça c'est très dangereux pour un pays parce que si nos meilleurs vont aller chercher ailleurs des conditions meilleures de travail - inévitablement à la longue, le Canada deviendra un pays sous-développé au plan scientifique. Et je pense que un pays qui se respecte et qui quand même a des ressources comme le Canada, ce n'est pas un pays pauvre après tout. C'est quand même dommage que l'on accorde pas plus d'importance à la qualité de la recherche scientifique, à lui donner un meilleur appui.

REPORTER: C'est dommage, mais à quoi peut-on penser comme solution? Il y a certains organismes qui ont pensé que... à formuler une formule de registre pour tenir compte des entrées et des sorties des scientifiques au pays. Est-ce que c'est souhaitable? Est-ce qu'on doit en arriver là pour garder les chercheurs

ici?

FREEBURG: Mais voyez-vous, ce genre de registre serait intéressant sur un point de vue statistique et d'informations. Mais en terme de débouché dans l'action, qu'est-ce que ça pourrait donner? Nous sommes un pays libre, un pays démocratique. Il y a des pays comme l'Union soviétique qui refusent des visas de sortie à leurs scientifiques. En général, dans le monde occidental, on considère... on déplore ce type de restrictions sur le mouvement des personnes. Alors si nous sommes... si nous croyons vraiment à la liberté individuelle, voyez-vous, ce n'est pas là la solution. Il faut, au contraire, rendre les conditions tellement attrayantes que les gens ne voudraient plus partir.

CBOFT: Justement, est-ce qu'on peut croire que le Canada ira résolument dans cette... dans cette veine là, d'autant plus quand on pense qu'ils vont ont couper votre propre budget, n'est-ce pas? de moitié. Depuis quelques années, il n'est plus qu'à 2,700,000 dollars pour un Conseil consultatif, qui a un rôle important à jouer. Quel... quel raisonnement à tirer? Quelle conclusion à tirer?

FREEBURG: Mais moi j'ai regardé un certain chiffre par exemple en terme de l'investissement du Canada à l'échelle nationale où on a investit(?) à notre budget donc comme organisme consultatif, mais à l'organisme qui doit se pencher sur la problématique donc à l'échelle nationale, intersection...sectorielle, inter-

disciplinaire, qui regarde le développement à long terme - ce qui ne se fait pas dans le gouvernement. Vous savez que il n'y a que très récemment, que notre gouvernement s'est créé sur la colline du Parlement un comité sur les sciences et la technologie parmi les députés, parmi les députés fédéraux. Il n'y en avait pas jusqu'ici.

Monsieur Suzuki a signalé récemment dans un article que presque les trois quarts de nos députés, comme formation, ce sont des avocats ou des gens qui viennent du monde des affaires. Il n'y a pas de scientifiques parmi eux. Alors la difficulté qui surgit, c'est que: est-ce que ces gens là sont au courant de ce qui se passe? Est-ce qu'ils sont capables de comprendre les enjeux sur le plan scientifique?

CBOFT: Non seulement c'est les députés, mais aussi dans la Fonction publique fédérale, n'est-ce pas? On retrouve beaucoup de personnes spécialisées par exemple dans la macro-économie mais non pas dans les secteurs technologiques et de sciences.

Écoutez. Tout notre temps est écoulé, Madame Freeburg. Merci de nous avoir bien fait connaître notre paysage scientifique canadien. Je vous remercie, Madame.

FREEBURG: Merci.

CBOFT: Et merci beaucoup à Dorothee Giroux. Là-dessus, nous vous disons donc bien sûr au revoir! à la semaine prochaine.

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GOVERNMENT SPONSORS SCIENCE CONFERENCE

CBOT: R&D, the initials mean research and development.
It's one of those buzz phrases Canadians hear uttered at election time. Politicians are always saying we need more R&D if the Canada of today is going to make it in the world of tomorrow. For those who need new R&D money, in universities, in the public and private sectors, they say they're ignored once the election ballots are counted. This coming week, we're going to hear a lot more about R&D when the Prime Minister chairs a national conference on science and technology.

In a moment, our panel has some thoughts on what to expect, but first our science specialist, Eve Savory has some background.

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If we don't climb out of our resource-based mindset, Canada's in trouble.

FOR ACTION

Evans, M.
Gualtieri, R.
Salley, B.

FOR INFORMATION

Evans, M.
Gualtieri, R.
Salley, B.
Tracy, J.
Belsey, L.
Ree, L.

JOHN ROTH: The people who will suffer are not us. Maybe Northern Telecom my pension will, but it's going to be our children and their children that will suffer.

REPORTER: A few facts. Of the 50,000 small businesses in Canada, about a quarter employ an engineer. Only two percent of Canadian firms have an R&D program. Canada employs one-third as many scientists per capita as the Japanese. Why is all this true?

STUART SMITH: Well business have never needed science in (Science Council of Canada, Ex-Chairman)Canada. If you want it to be a successful paper company in Canada, mostly you need a forest to cut, and just enough equipment to cut it with and just enough science to produce your pulp or your paper.

REPORTER: 1984: Soon-to-be-Prime Minister, Brian Mulroney promised to change it all, to double R&D spending in four years.

BRIAN MULRONEY: This is the only country in the civilized world that in the last 15 years has gone backwards in terms of a contribution of a percentage of GNP to research and development

REPORTER: And still is; the promise, and government-funded science. We're the victim of the battle of the deficit, but now the government is trying to reverse the damage.

It's sponsoring a conference on technology and the economy.

FRANK QBERLE: The idea is to use the new instruments of
(Science Minister) science and technology to overcome historic problems,
to build on our inherent strength, to revitalize our traditional industries
and make them more competitive in world markets.

REPORTER: It won't be easy. First the government's reputation
 was damaged by the cuts to research spending, here
at the National Research Council and elsewhere. This man is the former
Chairman of the Science Council of Canada.

SMITH: It can't keep saying that technology is among
 the most important things on our agenda, and
yet always cut the budget of anybody doing it.

REPORTER: Second, the Canadian Labour Congress, which
 represents many unions is boycotting the
conference because it wasn't invited to be a major speaker.

SHIRLEY CARR: The Office of the President of the Canadian
(Canadian Labour Labour Congress, yes, is insulted, because
Congress) we represent two million workers out there who face
technology changes every day.

REPORTER: Third, there is a complacency among Canadian
 businesses.

JOHN ROTH: It's business leaders, so it's like my bottom
(Northern Telecom) line is doing very well. My company grew
three percent last year. What do you mean I've got a problem? Why do
I have to bring all this technology on board?

REPORTER: And fourth, there is something pervasive in
our culture.

DOUG BARBER: There is a whole mentality or culture in the
country which is resource-dependent, relatively
complacent.

REPORTER: And that will be tough to change.

BARBER: So there's a whole attitudinal change that's
got to take place and one of the biggest ones is
obviously in the government and in the leadership of the country itself.

REPORTER: The conference will get a lot of support from companies
committed to technology and for those who aren't
such as many resource companies, the government will offer a tempting
bone in the form of a major money announcement. But business leaders
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ROTH: That may seem modest, but we're competing in
a world where very subtle changes have very large
impacts. You don't have to be much better than the other fellow to

win the race.

REPORTER: Many of the people coming to the conference
 say they know this is probably an election year and
the Prime Minister will use the conference to help boost his profile.
They also say they don't care as long as he also uses that profile to
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Eve Savory, CBC News, Toronto.

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PANEL: STATE OF SCIENTIFIC RESEARCH IN CANADA

PETER MANSBRIDGE: Alright gentlemen, a substantive issue up for discussion this week and David, I want to start with you. Eve has reminded us of Brian Mulroney's campaign promise in 1984 about R&D. Go into a little more detail for us on what it was and what's happened since.

DAVID HALTON: Well Peter, I suspect it's going to be one of those election promises that come back to haunt the Prime Minister. He pledged at the time that a Conservative Government would double Canada's spending on research and development over a period of four or five years by 1990. Now at the time, Canada was spending about 1.3 of its gross national product on R&D. What do we find three and a half years later spending exactly the same level, 1.3 percent; far from double, as the Prime Minister promised.

MANSBRIDGE: Jeffrey, are we saying then that nothing's changed?

...2

JEFFREY SIMPSON: Well one of the good things the Conservatives did, Peter, was to eliminate the scientific research tax credit. They did that early on in their mandate and that was one of the great boondoggles in the history of Canadian taxation. It leached more than a billion dollars out of the system, and then they made a commitment to get us involved in the US space station, but really for the last, oh I would say, eight to ten months, it's been mostly a series of buréaucratic moves. There's been a conference on post-secondary education in Saskatoon, creation of the National Advisory Board on science and technology, this conference coming up next week, and a new ministry in Ottawa, yet again, this one called the Ministry of Industry, Science and Technology. There hasn't been the cash on the table that I think a lot of people in the scientific community hoped for.

PETER MANSBRIDGE: Well one wonders then what to expect in the next couple of days, because it's a very public forum, this conference. Do we assume that the Prime Minister is going to take the opportunity to deliver in some manner on some of those promises of a couple of years ago, David?

DAVID HALTON: Well that's certainly the word from the Prime Minister's Office, Peter, that Mulroney will use the conference as a platform for a major new spending promise in terms of funds for science and technology; but don't expect him to double R&D to what, a 2.5 percent as he promised back in '84. That's almost impossible. That would mean ten billion dollars being spent on it so don't expect spending of that order, but certainly there'll

be funds to, he hopes, to satisfy the R&D community in Canada.

MANSBRIDGE: What are you hearing Jeffrey?

SIMPSON: Peter, there have to be funds or else the whole Prime Ministerial exercise of the last four years years will look like the naked emperor. The Advisory Council that he set up has produced a series of reports; one of which I've seen. It'll be released next week. It hasn't been so far, and it looked at the question of research and development in the Canadian universities and this committee has recommended that the three granting agencies for medicine, social science and humanities and natural science and engineering, that their base budgets be doubled over the next three years. That's a commitment of about \$600 million over the next three years, and this Advisory Committee also recommends that after that three-year period, the amount of money the government spends on R&D go up by more than the rate of increase in the GNP; so we're talking about some pretty substantial sums being demanded by this Advisory Board.

HALTON: But this depends, Peter, on a lot of money coming through from the business community and I don't think we should make the mistake of pointing the finger blame too much at the government. Private industry in Canada has been very very lacking in terms of the money it's coming through with. I mean, Eve Savory mentioned that incredible statistic in her report that only two percent of Canadian businesses even have an R&D capacity. Another frightening statistic that Frank Oberle, the Science Minister is quite fond of jotting(?) out

is the fact that 80 percent of the equipment we use to process our manufactured goods are in fact imported goods because we don't have the technology to produce them ourselves.

MANSBRIDGE: Okay, but when we do look at the public sector, I'm wondering what is realistic to expect. If there's been a common thread to the mandate of this government it is that times are tough when you're dealing with the public purse. Jeffrey's suggesting hundreds of millions of new dollars are needed and are going to be asked for. What are the odds of them ever getting that kind of money?

SIMPSON: Well they have to come up with some new money, Peter, because as I said, the Prime Minister made such a big thing of this when he was running for the Conservative leadership. Of course, the Finance Minister, Michael Wilson is going to have some problems over this, but David's point about the private sector is an interesting one because when the Conservatives came into office, they said look: We've got the National Research Council and we've got other granting agencies. Let's see if we can get more private money into research and development; and so they devised a system which in essence said: We're going to freeze the budgets of the granting agencies and they can get more if they attract private sector money. This was the so-called matching grants. Well this Advisory Committee's Report suggests that that matching grants policy has been a flop. The private sector hasn't come across with the sums the government hoped for and that therefore the only realistic policy is to increase and

increase substantially the money to these granting agencies.

MANSBRIDGE: Okay now, one of the big pots of gold at the end of the rainbow, if you wish, for the people who work in the science and technology R&D field in this country, is the possibilities that are inherent in the space station, that the Americans want to put up. Our involvement in that assumes many new jobs, a lot of new contracts in this country. What's new in that end of things, on the space station?

HALTON: Well basically Peter, an agreement, a memorandum of understanding has at last been signed between the Canadian and the US Government. On our participation, we'll be spending, what, about \$800 million over the life span of the space station. The hang-up for along time was the Americans saying we may want to use this station for military purposes; Canada and the European partners saying: no way, we're not going to get into the act, if there's any military use of the space station. Finally, that problem seems to have been solved. The Americans are saying: No, they won't use it, so the venture should go ahead pretty shortly.

SIMPSON: It's an important matter, \$800 million. Remember the big kerfuffle(?) what, two and a half years ago in Parliament Peter. Day after day, the opposition latching on to those cuts at the National Research Council. In part, that was explained by the Canadian commitment to participate in the space station, since they were moving the budget out of the NRC for space, and creating it in some new space agency which would oversee a number of policies, including

our participation in the space station. And I might say that there are many people in the scientific community who are dubious about the space station, of course, it has a number of supporters; on the grounds that we're putting too many research eggs in that one basket.

MANSBRIDGE: Alright, we've only got a minute left. One has to assume that given a public forum like this that the Prime Minister will use it to also talk about free trade. Once again, we've seen Ronald Reagan talking about it in his radio address this weekend. Do we assume that he will use this platform to talk about what free trade could mean in the R&D, science and technology area?

HALTON: Well he certainly will, Peter, but it's interesting talking today to some of the people in business and the academic world involved in R&D. They're saying that there's a real danger that Canadians will think of free trade as the ultimate solution to our economic problems. They're saying that areas like developing research and technology are critical strategies that have to be developed to parallel and separate from free trade itself.

MANSBRIDGE: Fifteen seconds on this to you, Jeffrey.

SIMPSON: To the extent that free trade makes foreign ownership in Canada easier, it probably isn't going to help R&D because most of those multinationals don't do

(an awful lot of research and development here, to the extent that it allows Canadian companies to penetrate the US market. It probably will enhance their R&D capacity.

MANSBRIDGE: Alright gentlemen, our time is up on this.

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PROGRAM: EMISSION:	CBO MORNING BUSINESS BRIEFS	DATE: JANUARY 11, 1988 DATE:
NETWORK / STATION: RESEAU / STATION:	CBC/CBO	TIME: HEURE: 6:40 AM

R & D FUNDING

CBC: In this country a committee appointed by the Prime Minister has recommended Ottawa spend an additional 500 million dollars for its three councils that grant money for research. The National Advisory Board on Science also suggests moving much of the government's research into university laboratories.

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PROGRAM: PRESS CONFERENCE EMISSION:	DATE: JANUARY 11, 1988 DATE:
NETWORK / STATION: RESEAU / STATION:	TIME: HEURE:

NATIONAL CONFERENCE ON TECHNOLOGY AND INNOVATION

MODERATOR: All right, this morning we have Minister Robert de Cotret and he'll introduce his officials and have some opening remarks.

DE COTRET: Thank you very much. Ladies and gentlemen, first of all I'd like to introduce the people with me. I've got Bruce Howe, who's the Deputy Minister in the department, and also Bob Richardson, who's the executive director of the conference.

The National Conference on Technology and Innovation in Toronto this week will bring together some of the top corporate, academic, labour and government thinkers, leaders and decisions makers in Canada. The government has asked them to tell us how the private sector can join together with government to make technology and innovation a national priority.

La conférence convoquée par le premier ministre Brian Mulroney constitue une autre étape de la stratégie mise en oeuvre par le gouvernement pour soutenir la croissance économique du Canada, sa capacité de créer des emplois au moyen des sciences et de la

technologie. Parmi les mesures qui ont précédé la conférence, mentionnons la création du Conseil consultatif national des sciences et de la technologie, le CCNST, du Conseil des ministres des sciences et de la technologie, le lancement d'innovation et l'année... et l'annonce de notre intention de créer un ministère de l'Industrie, des Sciences et de la Technologie plus tard au cours de cette année.

There exists a sense of urgency about the themes of this conference that one rarely finds in meetings of this kind. For beyond the question of how well we will adapt to the changes in a highly competitive global economy, are the profound implications of those changes to the average Canadian, and may I say, to Canada's position in the world. This is not hyperbole or economic saber rattling. It is a fact of economic life that Canada must change to a more highly sophisticated, knowledge-based economy, or be threatened with a change in the quality of life and the international role we have long enjoyed. As such the key question for the conference participants, and for Canadians at large, will be as basic as a determination of what kind of country we will have beyond the year 2000.

La mesure dans laquelle nous réussirons à travailler plus intelligemment et de façon plus concurrentielle déterminera notre capacité de préserver les valeurs que nous partageons. Tel que notre sens de justice démontre par les programmes de péréquation, notre volonté d'aider ceux qui sont dans le besoin par l'entremise de programmes sociaux et notre préoccupation à l'égard de l'environnement.

Les Canadiens veulent sauvegarder la souveraineté de leur pays, venir en aide aux moins favorisés dans les pays en

développement et à continuer à progresser pour que le Canada joue un rôle progressif sur la scène internationale. Pour s'épanouir, toutes ces valeurs et priorités nationales ont besoin d'une économie vigoureuse qui ne peut résulter que d'une croissance économique soutenue. Cependant, c'est une économie. Sans une économie vigoureuse, rien de ces objectifs ne peuvent être réalisés.

Canada has historically benefited from a vast storehouse of agriculture, mineral and natural resources to propel its economic success. In the year 2000 it will depend more and more on its own human resources and its brain power to create jobs and expand its economic frontiers. If it does not our children, and their children, may be living in comparative destitution in a country that hardly resemble the one that we know today.

Without the collaboration of the private sector in the development of a national science and tech policy our ambitions will have a limited scope. Although some of Canada's corporations are world leaders in the development of new high tech products, through extensive research, not enough is being done, or has been done, in the past by private enterprise for Canada to remain competitive. And while the government can provide, and has provided, substantial incentives for research and development, it is up to industries and universities to work together with their partners in government to prepare for the changes of a knowledge-based economy.

That brings me to another of the themes of this conference. It has been the hallmark of this government to bring people together, rather than creating confrontation and driving them apart. This conference is another step in the process of national

reconciliation, initiated by the Prime Minister when he first took office. Proof of the interest in this conference has been the strong response and the high calibre of the participants. We have invited Canada's economic and academic leaders to Toronto this week, and they are coming.

Pour le premier ministre, la question de la technologie et de l'innovation est cruciale. Selon le discours du Trône, la conférence vise et je cite: à faire en sorte de mieux orienter l'appui accordé aux sciences, à la technologie et à l'éducation dans l'intérêt national. Monsieur Oberle et moi-même partageons entièrement cette opinion. Cette conférence se veut une rencontre de travail pour permettre aux participants de discuter à fond de la question et de formuler, comme on les en prie, des recommandations précises à l'intention du gouvernement. Des journalistes seront invités à assister aux ateliers dans le cadre desquels la plus large part des discussions substantielles prendra place. Je suis certain que vous trouverez les délibérations des plus stimulantes et des plus intéressantes.

Once the recommendations have been tabled by the conference participants they will be thoroughly studied by my department with a view to their integration into the government's science and tech policy. We will also be watching for the subsequent initiatives of the participants according to their recommendations of what they intend to do to improve Canada's competitive position through scientific advances.

There has been a great deal of preparation to assure this conference is a success. I am confident that the participants

share the government's belief that its overall strategy, and this conference is part of that long term effort, are critical to Canada's social and economic development. This conference is effectively an economic summit, of many of the best and the brightest minds this country has ever produced.

Speaking on the behalf of the Prime Minister and the Minister of State of Science and Tech I look forward to the deliberations and recommendations of the National Conference on Technology and Innovation as a further important step in ensuring Canada's future ability to sustain economic growth and create jobs. Thank you very much, and we'll be very happy to answer any of your questions.

MODERATOR: Any questions? The gentleman here.

Q: Est-ce que cette conférence, Monsieur de Cotret, pour avoir une implication ou jouer un rôle dans la détermination du Centre spatiale - est-ce qu'on en tiendra compte?

DE COTRET: Bien s'il y avait des commentaires bien spécifiques, certainement qu'on va tenir compte des commentaires. Comme vous le savez, on a déjà fait l'annonce qu'on voulait participer à la station spatiale. Il y a eu des difficultés que vous connaissez en ce qui concernait le besoin de spécifier clairement les objectifs non-militaires de la station. Je pense que c'est réglé. C'est derrière nous. On doit retourner ou je dois retourner au Conseil des ministres avec une nouvelle soumission qui tiendra compte d'une

réévaluation des coûts. Je pense qu'on l'a déjà d'ailleurs mentionné dans les médias que c'était pour coûter plus que 800 millions. On est en train de terminer cette réévaluation des coûts. devrait pas prendre beaucoup de temps et puis aussitôt que ça va être fait, à ce moment là, on pourra procéder avec le processus décisionnel normal.

MODERATOR: John Ferguson, Southam.

Q: Minister, what is the status of the Prime Minister's promise or commitment prior to the election to double the commitment to research and development in Canada? The statistics suggest that in fact we may have even dropped back a fraction of a point in terms of proportion of money, proportion of GDP. So what is the status of that promise, or ... is there going to be an attempt to make a big push in the next year to try and get those numbers up?

DE COTRET: I think that everything we've done to date in the area indicates that we are still committed to increasing significantly the ratio of expenditures on research and development to GNP. You're quite right in stating that so far that ratio for all intents and purposes hasn't moved. It's just about where it was. The government is intent on seeing it move. We've had quite rapid GNP growth over the last three years, as you know. We rank first or second in the world, depending on the year in which you look at the GNP statistics, and obviously by just... by increasing significantly our R and D effort in the country we've only managed to keep the ratio about the same. There's no doubt that we are determined to see that

ration increase. I think it's a must for us as we move towards the year 2000 and beyond to see that ratio increase, and we'll be taking the appropriate steps to do just that.

Q: Does that mean that we're likely to see then this year a greater commitment to spending by the government or some commitment to lever more money out of the private sector or universities? What...

DE COTRET: Well, I think it's very important when we're talking about science and tech it can't be a government effort alone. It's got to be an effort that involves all the participants in the economy. It has to involve the provinces, it has to involve the academic community, it has to involve business, it has to involve labour, and that's really one of the big purposes of this conference, is to bring everybody together. First of all, to get their participation in setting forth an agenda for research and development, and a policy for science and tech in this country. And also another great objective that we're pursuing here is to raise the public awareness of the importance of R and D for future generations. And I think that given the calibre of the participants that we have at this conference we should be able to meet both objectives.

MODERATOR: David Halton, CBC News.

Q: Mr. de Cotret, on that issue of spending for R and D, can we expect the Prime Minister to announce at this

conference a major increase in government spending for science and technology.

DE COTRET: Listen, there's going to be more spending for science and tech. There's no question about that. I won't try to scoop my Prime Minister. You'll have to wait for a few days more to know exactly what amount, but certainly we're going to have to devote more resources to research and development. I think that's quite clear and I think most of you in the media have understood that very well, those of you who followed this particular file. We're still living through a difficult budgetary period, so it's not a question of just being able to spend everything that everybody would like to see spent, but certainly new money is involved, and the Prime Minister will be talking about that during the conference.

MODERATOR: Dick Gordon, CBC Radio.

Q: Mr. de Cotret, about a year ago you were talking about the shift from NRC-type research to university-based research. Is that still a main feature of your science policy?

DE COTRET: There are a number of things that we're looking at in terms of our science policy and we've had very good advice from our advisory council, the Prime Minister's advisory council, in a number of areas. We are certainly... if there's one thing that we are putting an awful lot of importance on is this greater

cooperation between business, the academic community, the government labs and government itself. And we've had a number of experiments in this area that are working out very well. I think one that I like to underline, when I'm asked the question, is the biotech lab in Montreal, which is a government lab. It's an NRC lab, but where we have on the board an equal number of representatives from government, from the academic community and from business. And where in terms of the use of the facilities, the facilities are equally available to the business community and here what we find are mainly small and medium-size businesses that can't afford to have a lab of their own, but can afford to share a lab, participating alongside people from academia and people from government, and what you... the net result of all of that is that you build a critical mass of researchers who can talk to each other, exchange ideas, talk about their project, talk about what they've found over the last month, or three months or six months or whatnot, and talk about their problems, and it's working out very, very well. So we're putting an awful lot of emphasis on that kind of joint effort.

Q: I ask you the question because I talked to a researcher who had a lab in the NRC, moved to a university when the cutbacks took place last fall, and says that really he's having a very difficult time keeping up with his research because with the pressures of work in a university he's got to teach, he's got to try and publish, he's got to try and apply for grants, and in his view, that shift to the universities just isn't working. I was wondering...

DE COTRET: Well, I think there's a shift both ways here, and what we're trying to do is to get a better mesh between the various communities interested in research and in the application of research, and I guess what you're really asking and what you're touching on here, is the raison d'être of the new department, and I'll be talking about that at the conference in more specific details. And what we want there is to have a... not a... we don't want to build bridges. We want to create a ribbon, if you like, which starts with pure research. You know, curiosity research at one end of the spectrum, going through academic research, applied research or industrial research, if you like, going through the actual industrial process, all the way through to the marketing, both domestically and internationally. And we want the policies of the government to reflect that major policy thrust of having this integrated so that you can move the research into something that will create jobs, that will improve our competitiveness, that will give us the kind of results that we're looking for. And I firmly believe that by building bridges, or just having links it's not enough. You've got to really have a ribbon between these different areas of activities, and that's what the new department will be all about.

MODERATOR: Michel Vastel.

Q: Monsieur de Cotret, vous avez bien dit que le 800 millions, ça serait beaucoup plus que 800 millions?

DE COTRET: J'ai pas dit beaucoup plus, mais ça va être plus.

Q: Vous avez dit beaucoup plus, mais je voulais que vous vous corrigiez.

DE COTRET: Non, non. Ça va être plus que 800 millions, beaucoup plus là. Écoutez. La dernière estimé a pas été faite. Alors je peux pas vous donner un chiffre. Je vous le donnerai aussitôt que je l'aurai. Mais ça va être plus que 800 millions, ça on le sait.

Q: Maintenant que Monsieur Howe est là, peut-être qu'il peut nous aider à... combien a été dépensé là-dessus et dans quel domaine? Sur la participation canadienne et la station orbitale américaine, depuis trois ans, combien déjà vous avez dépensé et dans quel domaine?

HOWE: The total program, as the Minister has said, will be in excess of 800 million through to the year 2000. I do not have the exact figures in front of me for the space station spending up until now, simply because we are reviewing for the Minister the global numbers and they're changing.

Q: (inaudible)... money, allocated money?

HOWE: That's right.

Q: Now, how much?

HOWE: Well, the budget figure up til now has been 800 million, and that, as the Minister said, is in the process of change because of the discussions and the negotiations that have been under way.

Q: ... you must know how many contracts you have given out already, don't you?

HOWE: I don't have the numbers in front of me, I'm sorry.

Q: ...leave you my phone number and maybe you will.

HOWE: Yes, we'll get the information for you.

MODERATOR: Any other questions? Sir.

Q: ...defence industrial sector of Canadian companies and branch plants in Canada have spent a great deal on R and D and I see that an Illinois Democratic Senator, Alan Dixon, has just introduced a bill in the Senate, another protectionist bill. I wondered if you would comment on that Mr. Minister? (inaudible)... know anything about it?

DE COTRET: No, I'm sorry, I don't. I'm not aware of the bill he's introduced. What is the bill driving at exactly?

Q: Well, it drives at... it's designed to strengthen the U.S. defence industrial defence and reduce dependence on foreign suppliers for vital military parts. It would allow the U.S. government to designate new defence products and systems as emerging technologies vital to the defence of the United States, and such technologies would have to be produced in the United States. Now this is a bill introduced in Congress by Illinois Democratic Senator Alan Dixon.

DE COTRET: Well, all I can say is that that would fall under the standstill provisions of the free trade agreement and they would have to specifically block, or identify Canada in the bill, for the bill to apply to Canada. So I... you know, obviously I think every body knows well my position on protectionism. I'm not a protectionist. I think it's not the way to go and I deplore any protectionist bill that's introduced by any government across the world. I don't think that's the way for the worldwide economic system to progress and to be efficient. So, while I deplore this bill I don't think that... I think it is covered by the standstill agreement that we have with the U.S., and I think that it would fall under the new provisions of the FDA.

MODERATOR: Second round, Michel Vastel.

Q: Hier soir, Monsieur de Cotret, sur le futur propriétaire du all-news channel, on a vu Madame

Shirley Carr qui se sentait insulté par le genre de place que vous étiez prêt à faire au mouvement syndical à la conférence. Est-ce que vous pouvez consul... commenter là-dessus? D'après ce que je comprends, le CTC ne participera pas à la conférence.

DE COTRET: Non, et je trouve ça malheureux. C'est leur décision. Je pense que c'est à eux d'en expliquer les raisons. On avait demandé au départ, à la CTC, de nous faire parvenir une liste de participants. Ils nous ont fait parvenir une liste de 21 participants. On a invité ces 21 personnes à participer à la conférence. La majeure partie ont accepté. On a choisi une de ces personnes là comme conférencier pour faire valoir le point de vue de la CTC. Mais on a choisi dans la liste qu'on nous a donné et puis Madame Carr était pas sur la liste qu'on nous avait donné. Alors on a choisi un de leurs propres candidats et puis apparemment ça aurait créé des difficultés à l'intérieur de la CTC. Mais pour plus de détail -pourquoi la CTC participe pas? Je pense que ça serait à eux à répondre. Je trouve ça malheureux. D'autre part, il va avoir une bonne représentation du mouvement syndical à la conférence. Mais il y a d'autre syndicat évidemment.

Q: Oui. Qui sera là du mouvement syndical?

DE COTRET: La Fédération canadienne du travail, puis des représentants d'une foule de syndicats indépendants.

Q: (inaudible)...

DE COTRET: D'un nombre de syndicats indépendants. Une foule là... je veux dire, je pense que vous avez la liste hein?

Do they... did we not distribute the list of participants?

MODERATOR: ...(inaudible)... don't do that.

DE COTRET: On va vous donner la liste des participants. Alors vous verrez exactement qui...

MODERATOR: Marc (inaudible)...

Q: Monsieur de Cotret, je veux simplement savoir s'il y a un angle environnement à cette conférence qui a lieu à...

DE COTRET: Pas comme tel, mais je pense qu'il faut regarder ce qu'on fait dans le domaine de science et technologie, dans l'ensemble de ce qu'on fait sur le plan économique et puis à ce moment là évidemment, l'environnement est une considération importante. Alors ça me surprendrait pas que le sujet soit soulevé à la conférence, mais comme telle là, il n'est pas identifié séparément de l'autre - non.

Q: Il n'y a pas d'atelier là-dessus?

DE COTRET: Non.

MODERATOR: The gentleman in the back there, identify yourself in the media.

Q: (inaudible)... Radio Canada international. Je voudrais

savoir, Monsieur de Cotret, quelle va être la position du Conseil national de recherche du Canada à l'intérieur du nouveau ministère?

DE COTRET: Oui. Le Conseil national des recherches va toujours continuer à jouer un rôle très important et puis ça va me faire plaisir de vous donner beaucoup plus de détails sur le nouveau ministère, pour sa structure, lors de la conférence. J'ai l'intention, dans mon discours, de parler de ce sujet là et puis à ce moment là, je vais vous dévoiler en plus grands détails comment je vois non seulement l'orientation du nouveau ministère, mais aussi comment je vois la structure du nouveau ministère et puis des différents groupes qui se rapportent.

Q: ...(inaudible)... à cette réorientation au sein du CNRC?

DE COTRET: Pour le moment, j'ai pas de commentaires à ce sujet

là, mais je vois pas de... à l'heure actuelle, je pense que le plus grand défi en établissant le nouveau ministère, c'est de créer le lien essentiel entre le secteur industriel, le secteur des sciences et technologie - ce qui veut dire le secteur académique, le secteur de recherches gouvernementales et le monde corporatif.

MODERATOR: Last question, Dick Gordon.

Q: Mr. Richardson, to you the question... the suggestion has been that politicians haven't been putting enough attention to research and development and implied in that is that business hasn't either. How badly do you feel that business has been fumbling the ball on R and D and why will a conference like this change anything?

RICHARDSON: Well, as many of you know I've been involved in one way or another in research and development, science and technology and innovation for all my working life. We have pockets in this country that are very strong. I'm well aware of them, I've been involved in them. We have many others that are now and so I guess, to answer your question bluntly I don't think in the total spectrum of Canadian business, for whatever the reasons, we have paid the kind of attention to science, technology and innovation, and I stress those words rather than R and D, because this is not a question only of research and development. It is the question of using it and in using it in the matrix of a business enterprise in its planning and its development and in its future. And it's that issue that we want to

talk about in this conference. How can we build the linkages where government support helps, where liaison with universities can do something, or liaison with government labs, or how can we convince business groups, because of the experiences that they will learn here, that this is in fact their future?

MODERATOR: Okay, the opposition parties are here. Do they wish to do together or separately they can work it out, and I thank (inaudible)...

DE COTRET: Okay. Thank you very much.

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PROGRAM:
EMISSION: LE MIDI QUINZE

DATE: LE 11 JANVIER 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: CKAC (MONTRÉAL)

TIME: 12H20
HEURE:

CONFÉRENCE SUR LA RECHERCHE ET LE DÉVELOPPEMENT

CKAC: Le gouvernement conservateur entend profiter de la Conférence nationale sur la technologie et l'innovation, plus tard cette semaine à Toronto, afin de préciser ses engagements financiers futurs face à cet important secteur de l'activité économique. C'est ce qu'a fait savoir, ce matin à Ottawa, le ministre Robert de Cotret, tout en précisant que le gouvernement fédéral allait se concerter avec les provinces et le secteur privé afin d'accroître les efforts canadiens dans la recherche et le développement. Yves Bellavance assistait à cette conférence.

REPORTER: À compter de mercredi, Toronto est l'hôte de la première Conférence nationale sur la technologie et l'innovation. Et pour souligner l'importance de l'événement, le Premier ministre Mulroney suivra sur place toutes les délibérations. Même si plus de 200 intervenants des milieux scientifiques et industriels participeront à la Conférence, plusieurs se demandent s'il ne s'agit

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pas là que d'un vaste spectacle puisque les Conservateurs n'ont pas donné suite à leurs promesses de '84, à l'effet de doubler à 2,5 % du PNB les fonds canadiens pour la recherche et le développement. Le ministre Robert de Cotret affirme que le Premier ministre Mulroney précisera lui-même, lors de la Conférence, les sommes nouvelles qu'Ottawa va débloquer à cette fin. Mais déjà le Néo-démocrate, Michael Cassidy, formule une demande précise.

CASSIDY: ... qu'on doit doubler les dépenses des trois conseils qui octroient pour la recherche et le développement, nous voulons(?) cela.

REPORTER: Nous attendons toujours par ailleurs que le Cabinet fédéral décide de la localisation de l'Agence spatiale canadienne que se disputent Montréal et Ottawa. Auparavant, cependant, le Cabinet devra en approuver le budget qui va dépasser de beaucoup, selon Robert de Cotret, le 800 millions de dollars initialement prévu.

Ici Yves Bellavance, Télémédia à Ottawa.

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PROGRAM: EMISSION:	NEWSHOUR	DATE: DATE:	JANUARY 11, 1988
NETWORK / STATION: RESEAU / STATION:	CKO-FM	TIME: HEURE:	5:30 PM

NEW MINISTRY PLANNED FOR RESEARCH AND DEVELOPMENT

CKO: A new federal ministry is about to be created.
News man, Bob Quinn reports the Prime Minister will also announce plans to spend more money on research during a conference this week in Toronto.

REPORTER: At a conference bringing all sectors of the economy together in Toronto this week, the Prime Minister will announce the creation of the Department of Industry, Science and Technology and the allocation of new money for research and development. Industry Minister, Robert de Cotret says the government is committed to keeping Canada at the cutting edge of R&D.

ROBERT
DE COTRET:
(Industry
Minister) And we want the policies of the government to reflect that major policy thrust of having this integrated so that you can move the research into

something that will create jobs.

REPORTER: Ottawa says the blended approach, close co-operation with the universities, industry, labour and government is the way to go.

Bob Quinn, News Radio, Ottawa.

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PROGRAM:
EMISSION: NEWSHOUR

DATE:
DATE: JANUARY 11, 1988

NETWORK / STATION: CKO-FM
RESEAU / STATION:

TIME: 5:30 PM
HEURE:

ROMPKEY URGES CUTS IN DEFENCE SPENDING TO RESEARCH AND DEVELOPMENT

CKO: Liberal MP, Bill Rompkey says Ottawa may have to reduce spending on defence and special aid programs if it wants to be able to increase R&D spending. Rompkey claims federal research and development grants should more than double the \$10 billion.

BILL ROMPKEY: You've got to make choices. You've talked about (Liberal MP) defence spending. There has been farm aid for Western Canada. There has been aid for other parts of the country. I think we've got to make some choices. If we're serious about creating jobs, those jobs, I'm convinced, are going to be there in the private sector and particularly in small business.

CKO: The opposition's accusing the federal government of passing the buck to the private sector when it comes to supporting research and development.

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PROGRAM:
EMISSION: NEWSHOUR

DATE:
DATE: JANUARY 11, 1988

NETWORK / STATION:
RESEAU / STATION: CKO-FM

TIME:
HEURE: 5:30 PM

CRISPO COMMENT: RESEARCH AND DEVELOPMENT

CKO: Professor John Crispo is a political economist and regular contributor to the CKO National Newshour. Well John, all parties seem to agree the government should be funding research and development more than they are currently, but where's the money going to come from? Is Bill Rompkey right? Should it come from defence spending?

JOHN CRISPO: Well it's easy to say that, I mean, it is true.
(Political
Economist) We have to make trade options and this will. My problem on R&D is that I'm just full of (inaudible) I'm odd man out. I mean what they've said all sounds fine. We're going to have a super ministry. We're going to have more money, as has been implied. Where are we going to get the money? What are we going to do with it? I mean, these are perennial Canadian problems. You'd think if you just throw money at something, it solves the problem. I disagree with that, but I'm not sure they're even

dealing with the fundamental issue.

CKO: Okay, what is the fundamental issue?

CRISPO: Well you see, there's a lot of evidence
 around that, while R&D, research and development,
are important, even more important is the rapid adoption and
diffusion of the latest technology no matter where it's being invented.
Now I'm not going to deny the importance of basic R&D. As a university
professor I couldn't do that, but it may well be that it's even more
important today to make sure you know what's going on everywhere
and that your people, your entrepreneurs are in a position to adopt
and diffuse the latest technology, as I said, no matter where it's
coming from, as fast as anybody else. Now I wouldn't cut back on
R&D itself, but I'm not sure I wouldn't put more emphasis in the
future on helping our entrepreneurs keep abreast of what's going
on everywhere and making sure they get licensed to use it as fast
as anybody does. We can't be first in everything in R&D. We'd
be lucky if we can be first in a few things, and R&D is important
across the board and that's why I'd put more emphasis on monitoring
and helping our people make sure they get the latest technology and
have access to it as fast as anybody else.

CKO: So it's great to have the technology, but you've
 got to have the manual to know how to use it.

CRISPO: Exactly, and you can invent all you want.
If you're not first in using it, you're nowhere.

CKO: Okay, what about the private sector? Where does
it fit in here? Should it contribute more towards
R&D?

CRISPO: Well, again a little bit of heresy. I'm not
sure I wouldn't put more emphasis on tax breaks
for the private sector so that entrepreneurs who think they
really got something will risk their money getting part of it back
through tax breaks and it won't be bureaucrats in Ottawa saying:
Here's a winning sector. Let's do more research there. Here's
a losing sector. Let's not do research there. I'd have more faith
in the private sector. Maybe it also gives them some incentive to,
further tax incentives to assist universities on a co-operative basis
with their ventures, but I'd have more faith in entrepreneurs with
a little bit of tax assistance deciding these things than the government
doing it.

CKO: John, Prime Minister Mulroney, before he was
Prime Minister, made a big deal out of R&D and he
was going to provide more funding. What if he doesn't before
the next election? Could it backfire on him?

CRISPO: Well I mean there's so many things going
to be involved in the next election. The opposition

until recently has said the whole thing's going to be about free trade. That's one of the problems. Everybody has a different axe to grind in an election and I guess R&D people will see this as the first issue. I'm not sure that many other Canadians would share that. There's so many other issues to choose from.

CKO: John, thanks for your time.

CRISPO: Okay, Betty.

CKO: Professor John Crispo is a political economist and regular contributor to the CKO National Newshour.

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PROGRAM: NEWS EMISSION:	DATE: JANUARY 11, 1988 DATE:
NETWORK / STATION: RESEAU / STATION: CKBY FM	TIME: HEURE: 6:00 PM

R & D ANNOUNCEMENT TO BE MADE

CKBY: Despite 1984 election promises the Mulroney government's budget for research and development has remained the same over the past four years. But now with another election in the wind the Prime Minister plans to announce the creation of a new ministry and more research money. The word will come out of a Toronto conference later in the week.

REPORTER: ...conference bringing all sectors of the economy together in Toronto this week the Prime Minister will announce the creation of the Department of Industry, Science and Technology and the allocation of new money for research and development. Industry Minister Robert de Cotret says the government is committed to keeping Canada at the cutting edge of R & D.

DE COTRET: And we want the policies of the government to reflect that major policy thrust of having this integrated so that you can move the research into something that will create jobs...

REPORTER: Ottawa says the blended approach, close cooperation with universities, industry, labour and government is the way to go. Bob Quinn, Newsradio, Ottawa.

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PROGRAM: EMISSION:	6:30 NATIONAL	DATE: DATE:	JANUARY 11, 1988
NETWORK / STATION: RESEAU / STATION:	GLOBAL/CIII	TIME: HEURE:	6:30 PM

DE COTRET FUNDING FOR RESEARCH AND DEVELOPMENT

GLOBAL: Canada's Industry Minister warned today that unless Canada makes more technological advances, our standard of living will drop. Robert de Cotret hopes his warning is heeded at a three-day conference on research and development set to begin Wednesday in Toronto, but critics charge that Mr. de Cotret is warning the wrong people. They say the Mulroney government made a number of promises to increase R&D funding, promises it hasn't kept. Carl Hanlon reports.

REPORTER: The impact of government funding is felt most in labs like this one at the University of Ottawa. It has one of the few mass spectrometers in the region. The device analyzes chemicals and scientists in Halifax recently used a newer version of this machine to identify the toxin found in tainted mussels, but researchers here say their aging machine probably couldn't identify the mussel toxin and it can't do many

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other tests. They have little hope of getting government money for a new one.

JOHN HOLMES: You're getting a cue and you are recommended
(Chemist) for funding even. The chance of you getting it in the fiscal year in which you apply may be only perhaps a chance of one in four.

REPORTER: Mr. Holmes says the funding shortages mean new scientists aren't trained properly and Canada falls behind other countries. Scientists like Mr. Holmes thought things would get better in 1984 when Brian Mulroney pledged on the campaign trail that a Tory government would increase Canadian spending on science and technology to \$2.5 percent of the gross domestic product; but spending has remained static at about 1.3 percent or \$7 billion.

Although the government has committed more than \$800 million for participation in the US space station program, last year it slashed the budget of the National Research Council by five percent. Today, the Industry Minister admitted funding has fallen short and he said unless Canada can soon base its economy on technology instead of resources, the consequences will be severe.

ROBERT
DE COTRET: If it does not, our children and their children may be living in comparative destitution in a country that highly resembles the one that we know today.

REPORTER: A special science and technology board convened by the Prime Minister is calling on him to give an extra \$500 million to universities for research. The Industry Minister today hinted a major funding announcement could be made soon.

DE COTRET: But certainly we're going to have to devote more resources to research and development.

REPORTER: The Prime Minister will use this week's conference in Toronto to announce some new funding and try and improve his government's record on research and development. But he is also expected to lean hard on industry to live up to its commitment to put more money into the future of Canadian science and technology.

Carl Hanlon, Global News, Ottawa.

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PROGRAM: AS IT HAPPENS
EMISSION:

DATE: JANUARY 11, 1988
DATE:

NETWORK / STATION: CBC/CBO
RESEAU / STATION:

TIME: 6:30 PM
HEURE:

STUART SMITH ON RESEARCH AND DEVELOPMENT

CBC(1): When Brian Mulroney campaigned in the last federal election, he promised to double the government's spending on research and development. Almost three and a half years later that still hasn't happened. Instead, Ottawa has barely held the line on science spending. Now the federal government is taking a new initiative. This week it sponsors a national conference on technology and innovation. Stuart Smith is former Chairman of the Science Council of Canada.

CBC(2): Dr. Smith, what are you expecting to come from the Prime Minister at this conference?

STUART SMITH: Well I think most of us expect that he'll make an announcement of some kind for increased spending in the field of technology.

CBC(2): Do you think that announcement will come anywhere close to achieving the promise from the '84 election; that is doubling the spending on research and development as a percentage of the GNP?

SMITH: Oh no. It can't do that, but that was not a realistic promise. The fact is that for the government alone to do all the spending to increase the research proportion of our economy would be ludicrous. It would be billions and billions of extra dollars spent by the government and without much payoff. What has to happen is that the industries of Canada have to take much more interest in research and development and then the government has to move to help them with their plans.

CBC(2): Let's look at the last three years. How much has research and development fallen behind do you think in Canada?

SMITH: Well we have simply stayed where we were. We were at about 1.3 percent of the gross national product being spent by all parties put together; that's universities, industries and the government. A very large proportion of that is actually spent by the government. That proportion is higher than in most other countries because the industry portion is so low in Canada. Most other countries have industries that are doing two and three times the amount of R&D that Canadian companies do.

CBC(2): What's the problem with Canadian companies?

 Is it that they don't want to put the money back into their own company? Are they just too timid or what?

SMITH: I think the truth is that you do the R&D you think you need and so many of these companies have never felt that their survival depended on research development or the latest technology. There are two very big reasons for this. A lot of our companies are branch plants and consequently they get their technology from back home, so to speak. They don't have to develop it here and even if they did develop it here, nothing much would come of it because they have no mandate to export in most instances.

 The second problem is that many of our companies are shippers of bulk commodities. These are usually primary products of the forest or the sea or the land and as a rule, when you have a bit of science to enable you to cut a tree better or to mine and smelt a little better, a little science goes a long way. You don't have to be up to date the way you would let's say in telecommunications or the computer industry where today's product will be obsolete six months from now.

CBC(2): And in those two industries that you mentioned, we're doing fairly well, I take it, in terms of research.

SMITH: We're not bad in the high technology field, but we have very few players. In the field of high

technology industry, Canada is hardly in the game. When we do get in the game, we're pretty good at it, but most of our economy is still dependent on either the primary products or the branch plants and neither of those have had a high demand for R&D and that's why our figures are so low.

CBC(2): You said that in over the past three years, we've basically stood still. Isn't that the same in this kind of a race as falling behind?

SMITH: Absolutely. Everybody else has moved ahead.

 In Sweden, where they moved up to well over two percent of GNP and two and a half, their Prime Minister has made a speech in Parliament and brought in new policies to make sure that they get up to three percent; but in Sweden it's the industries who do most of the R&D. The government gets in there and supports them, but it's still basically the industry that takes the initiative. Canadian industry has simply not been doing enough. There are three things that I hope will come out of this conference this week, but time will tell. One is that the bulk commodity people should start putting out specialty products that are a little more sophisticated than just the plain cheap bulk stuff that they put out now.

CBC(2): Give me an example of bulk commodity people.

SMITH: Well if you're putting out lumber, that's a bulk commodity. If you're putting out furniture you're getting into an advanced product or even if you're putting out specially treated lumber that can be used in certain situations it's more advanced. If you're in steel, stainless steel is a specialty product. If you're in paper, special kinds of paper for particular scientific purposes. If you're in chemicals, you can put out a bulk chemical by the ton or you can put out the most sophisticated advanced chemical to be used in human health for example, which costs thousands of dollars an ounce. That's what they have to do. They have to get into the fancier upscale products if you know what I mean and the second thing that has to happen is these companies have to adopt technology to become more competitive. The third thing that has to happen is we need these new high technology companies to start up pretty well from scratch.

CBC(2): Dr. Smith, thank you for being with us tonight.

SMITH: It's been a pleasure.

CBC(2): Good-bye.

SMITH: Bye bye.

CBC(1): Stuart Smith is former Chairman of the Science Council of Canada. He spoke with us from Ottawa.

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PROGRAM: EMISSION:	CTV NATIONAL NEWS	DATE: DATE:	JANUARY 11, 1988
NETWORK / STATION: RESEAU / STATION:	CTV/CJOH	TIME: HEURE:	11:00 PM

FEDERAL SPENDING ON RESEARCH AND DEVELOPMENT TO INCREASE

CJOH: CTV News has learned that the federal government intends to spend \$1.3 billion to boost research and development in Canada. As Mark Sikstrom reports, the announcement of the plan is expected to be made later this week by the Prime Minister.

REPORTER: In 1984 Brian Mulroney promised to double government spending on research and development during his first term in office. Although there have been some increases, science spending has a percentage of gross national production. It's exactly the same as it was four years ago. Scientists and businessmen agree that more must be spent on research and development. Canadian industries are to remain competitive.

ROY
WOODBIDGE: So that the areas of emerging economic opportunity (Canadian Advanced Technology Association) are coming in areas not where we've had traditionally economic strength, but where we have present

economic weakness.

REPORTER: This Wednesday, the federal government will host a major science and technology conference in Toronto. CTV News has learned the Prime Minister will announce a government plan to spend an additional \$1.3 billion on R&D over the next five years. Most of the money will go towards establishing five centres of excellence across the country. These pools of expertise will be build around universities or private labs and concentrate on developing technologies useful to industry.

Some of the \$1.3 billion will also be channelled into science and engineering scholarships. The Canadian Chamber of Commerce likes the centres of excellence idea.

ROGER HAMEL: We are spread very thinly in this country in (Canadian Chamber of Commerce) everything that we do; so that if we can concentrate our efforts and specialize and find a niche for the kinds of things that we can do; whether it's in aeronautics or in communications or in transportation or in power generation, all of which are areas that, you know, we have a good leg up right now.

REPORTER: One point three billion dollars doesn't come close to doubling government spending on science and technology, but it does partially fulfill a campaign promise. Failure

to do so might well have become an issue in the next election.

Mark Sikstrom, CTV News, Ottawa.

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PROGRAM:
EMISSION: LES NOUVELLES TVA

DATE:
DATE: 11 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: TVA/CHOT

TIME:
HEURE: 23H00

LES SCIENTIFIQUES DEMANDENT PLUS D'ARGENT AU GOUVERNEMENT FÉDÉRAL

CHOT: Les scientifiques canadiens pressent le gouvernement fédéral de doubler d'ici trois ans les subventions à la recherche universitaire. Le Premier ministre Mulroney dévoilera les engagements financiers de son gouvernement dans ce secteur mercredi à Toronto.

REPORTER: Lors du discours du trône d'octobre 1986, le gouvernement conservateur annonçait son intention de tenir une conférence nationale sur la technologie et l'innovation. Elle aura lieu cette semaine à Toronto à compter de mercredi et regroupera sous l'oeil attentif du Premier ministre Mulroney quelques 200 dissidents venant des milieux industriels et académiques. Mais, le gouvernement n'a pas de quoi pavoiser, puisque les Conservateurs n'ont pas donné suite à leur promesse de doubler à une hauteur de 2,5% du PNB soit quelques 8 milliards de dollars par année, l'effort canadien dans le domaine de la recherche industrielle. En fait, le ministre de Cotret en est encore à définir les objectifs du futur ministère de l'Industrie, de la Science et de la Technologie.

ROBERT DE
COTRET:

À l'heure actuelle, je pense que le plus grand défi en établissant le nouveau ministère c'est de créer le lien essentiel entre le secteur industriel, le secteur des sciences et technologie, ce qui veut dire le secteur académique le secteur de la recherche gouvernementale et le monde corporatif.

REPORTER:

Le ministre devait souligner que le volet de la recherche spatiale canadienne dépassera largement d'ici l'an 2000, les 800 millions de dollars initialement prévus. À cette fin, le Cabinet fédéral doit réévaluer l'effort de l'État dans ce secteur et arrêter le lieu de l'emplacement de la future agence spatiale canadienne, quelque part sur la Montréal-Ottawa.

DE COTRET:

On est en train de terminer cette réévaluation des coûts, alors ça devrait pas prendre beaucoup de temps, puis aussitôt que ça être fait, à ce moment là on pourra procéder avec le processus décisionnel normal.

Ici Michel Guénard à Ottawa

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PROGRAM: NIGHTLINE EMISSION:	DATE: JANUARY 11, 1988 DATE:
NETWORK / STATION: RESEAU / STATION: CTV/CJOH	TIME: HEURE: 11:20 PM

R & D FUNDING TO BE UNVEILED

CTV: The federal government is promising more money for research and development programs. Industry Minister Robert de Cotret says Prime Minister Mulroney will outline plans for increased funding for science and technology at a conference to be held in Toronto this week. A committee appointed by Mulroney recommends Ottawa double funding to its three councils that grant money for research, and spend an extra 500 million dollars over the next three years.

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PROGRAM: EMISSION:	DIMENSIONS	DATE: 12 JANVIER 1988 DATE:
NETWORK / STATION: RESEAU / STATION:	TÉLÉMEDIA/CKCH	TIME: HEURE: 7H45

RECHERCE ET DEVELOPPEMENT

CKCH: Ottawa entend dépenser 1,3\$ milliards de dollars sur cinq ans dans la recherche et le développement scientifique. Selon des informations obtenues par le réseau CTV c'est le premier ministre Mulroney lui-même qui annoncerait cette décision demain lors de l'ouverture de la Conférence nationale sur la technologie et l'innovation à Toronto.

Justement, les grandes centrales syndicales québécoises et canadiennes ont décidé de boycotter cette conférence. Les syndicats veulent ainsi protester contre la décision du gouvernement de retirer la présidente du Congrès du Canada, Shirley Carr, de la liste des conférenciers. Selon le CTC, le Cabinet du premier ministre Mulroney aurait imposé un veto à la présence de Madame Carr à cause de son opposition au libre échange.

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PROGRAM: CANADA AM
EMISSION:

DATE: JANUARY 12, 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: CTV/CJOH

TIME:
HEURE: 8:09 AM

CONFERENCE ON INNOVATION AND TECHNOLOGY

CTV: Some 200 people from labour, industry and government will gather later this week for a national conference on technology and innovation. As CTV reported last night, the government's poised to offer 1.3 billion dollars as part of its increased spending in research and development. Joining us this morning to look at the government's role in supporting the scientific community is Roy Woodbridge. He's president of the Canadian Advanced Technology Association. Good morning.

WOODBIDGE: Good morning Nancy.

CTV: Well, let's look at that 1.3 billion dollar figure. Is it enough?

WOODBIDGE: Oh, what a question. It's very difficult to know what is enough in this area.

CTV: Better than nothing, but nonetheless.

WOODBIDGE: Certainly better than nothing. I mean, I have no confirmation of the numbers, and we don't know what it's being spent for, so very, very difficult to answer the question of whether it's enough. Certainly the starting point for any kind of an intelligent discussion on this question of enough is to recognize that at the present time Canada is spending about half of what its international competitors are spending on research effort. That's the foundations for future economic growth, for future national competitiveness. It's a very serious shortfall, a great deficiency, and to be blunt about it, 1.3 billion... was it over five years you were talking about?

CTV: Right.

WOODBIDGE: To some extent, unfortunately, that amount of money is going to be simply replacing the funding that has been removed from support for research in the country over the past several years.

CTV: So we're not that much farther ahead, if we compare what might be injected into R and D spending, as opposed to, as you say, several years ago?

WOODBIDGE: We really haven't made any progress on the national scale in the last number of years.

CTV: That begs the question, of course, have you got a dollar amount? What would be a health injection of R

and D spending on the part of the government?

WOODBIDGE: Premier Peterson, at the recent first ministers' conference echoed an industry call for moving towards a 2.5 percent target. That's the share of gross domestic expenditure spent on research and development.

CTV: Translated into dollars what...

WOODBIDGE: Translated into dollars you're talking about moving from about a total national expenditure in the neighbourhood of seven billion dollars at the present time, to about 18 billion dollars by 1995. Pretty scary figures when you look at the magnitude of effort that would be required to put Canada on a comparable footing to our international competitors.

CTV: How do you rate the government leadership today in the whole area of supporting the scientific community? Do you sense that the government is pulling away? There have always been rumours that the government wants to leave this to the private sector.

WOODBIDGE: You certainly have that implication... that sense that the government in the context of fiscal restraint and everything else is very hesitant to make a large commitment to science and technology, and thus by implication the private sector... well, over to you private sector. On the other hand the government's response in the science and technology area is very, very confusing,

very difficult to read, because you have individuals like the Minister of State for Science and Technology, Mr. Oberle, the Prime Minister himself, who are very ardent supporters. They really do understand the imperative that Canada get on with this. Yet the program...

CTV: But, there's a but coming...

WOODBIDGE: Yes, there is a but. The but is that during their administration the actual dollar expenditures have been pared down. Most recently in Mr. Wilson's tax reform package where the direct tax support for research and development has been weakened. On the other hand you have, with the Prime Minister's involvement in this conference this week, you really get the sense finally for the first time in this administration, that the issue is beginning to be addressed aggressively, honestly, openly, and with the possibility of some success. I'm quite encouraged despite the...

CTV: All right, if you have the Prime Minister's ear at this conference, what will you tell him, what will the message be from the scientific community?

WOODBIDGE: That there are no short term quick-fix solutions to this problem.

CTV: That's probably something he would say to the scientific community, is it not? In terms of trying to explain why it is the government's taking its time in supporting whatever endeavours are out there.

WOODBIDGE: Part of the problem is that the... we've gotten involved in a rather sterile debate about, you know, shares. What... should industry be responsible for 50 percent of the total effort, or what is the appropriate balance. The reality is that we have different kinds of responsibilities. People are going to be our most valuable, natural asset in the future, because knowledge is the source of economic opportunity.

CTV: And briefly, this is linked to free trade?

WOODBIDGE: Well, the point I was making was that that whole educational area, the training, the development of the people skills, to support a knowledge-based economy is really a government responsibility. The problem of commercializing products, bringing them to market, is an industry responsibility. There's a requirement there for a lot of collaboration, cooperation. Certainly linked to free trade. I'm sorry?

CTV: No, I must cut in and get you to end there, but with any luck at all we can resume the discussion after the conference. Thanks for joining us this morning.

WOODBIDGE: My pleasure, thank you.

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PROGRAM:
EMISSION: PRÉSENT

DATE:
DATE: LE 12 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: RADIO CANADA/CBOF

TIME:
HEURE: 12H40

FONDS POUR LA RECHERCHE ET LE DÉVELOPPEMENT

CBOF: Davantage d'argent pour la recherche scientifique -
c'est ce que recommande un Conseil consultatif.
C'est ce que promet le Premier ministre Brian Mulroney, selon Le
Devoir de ce matin. Un milliard de plus, dit-on, moins que les
deux et demi pourcent du produit national brut promis en 1984,
mais quand même, la Communauté scientifique se réjouit. Léo Calinda(?)
a interrogé Maurice Labbé(?), président du Conseil de la science
et de la technologie du Québec - l'ancien directeur général du
Conseil des sciences du Canada.

LABBE: Oui, bien sûr. Quand... des fois on s'ajoute à
la recherche, c'est bien sûr. Sauf que les rumeurs,
il y a quelques temps, annonçaient plutôt 3 milliards. Et là,
on nous annonçait 1 milliard. Tout dépend, évidemment, de la façon
dont ce... cet argent sera distribué. S'il s'agit véritablement
d'argent neuf parce qu'il peut y avoir des transferts d'anciens
programmes de sorte que il faut connaître les détails pour réagir

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d'une façon un peu plus pertinente.

REPORTER: Mais c'est assez incompréhensible parce que en même temps qu'on a l'impression que le gouvernement fédéral veut prendre le leadership dans la recherche, on a l'impression aussi que le même gouvernement veut se débarrasser de ses responsabilités sur les provinces et les provinces n'ont pas d'argent, disent-elles. Pourquoi?

LABBE: Oui. Bien sûr, les provinces n'ont jamais beaucoup investi en recherche. Je dis: n'ont jamais, dans le passé, sauf le Québec qui l'avait fait assez... d'une façon assez singulière et maintenant, c'est l'Ontario qui investit très sérieusement.

REPORTER: On a l'impression que l'Ontario aura justement la part du lion. Est-ce que c'est juste?

LABBE: L'Ontario est déjà le leader actuellement au Canada au niveau de la politique technologique, qu'il est... qu'il recueille beaucoup d'argent de ce qui se passe... de ce qui sera donné à Ottawa ne surprendrait personne. Parce que ses universités sont plus en avance. Son industrie est plus en avance, etc.

REPORTER: Il est question également de faire profiter le secteur privé de cette manne fédérale. On dit que ce secteur privé au Canada est le moins généreux du monde. Est-

ce que c'est juste? Et pourquoi?

LABBE: Bien c'est... il y a des raisons historiques qui expliquent que l'industrie n'a jamais beaucoup investi en recherche au Canada. C'est que le Canada avait eu une (inaudible) facile à cause de ses ressources naturelles et à cause aussi du fait que beaucoup d'industries sont des filiales d'industries américaines. Tout ceci a contribué au fait que l'industrie n'investit pas suffisamment en R&D, en recherche. Du fait que c'est juste qu'il faut que l'industrie le fasse davantage parce que l'avenir n'est pas aux ressources naturelles, mais à la matière grise évidemment. Et c'est... c'est avec cette arme là qu'on pourra concurrencer les autres pays et justement travailler au niveau américain d'une façon équitable pour le Canada.

REPORTER: Qu'est-ce que ça change vraiment que le gouvernement fédéral mette plus d'argent? Est-ce que ça va donner plus de volonté de recherche aux gens?

LABBE: Prémûément, vous savez l'annonce est tellement peu développée - il y a aucun détail connu. On parle d'un milliard de dollar, mais comme je disais tout à l'heure - est-ce que ça ira aux conseils subventionnés qui en ont drôlement besoin parce que la recherche universitaire, la recherche fondamentale au Canada est celle qui est la plus délaissée actuellement. Or, la plupart des grands pays industriels veulent davantage y investir dans ce secteur là parce qu'ils savent que c'est leurs sources,

leurs approvisionnements en quelque sorte pour le développement technologique. Le Canada a été très très déficient de ce côté là là. Alors il est possible que... qu'une bonne partie du média soit, je l'espère en tous les cas, utilisée pour le financement accru de la recherche universitaire. Il y aura sans doute aussi d'autres moyens d'aider indirectement l'industrie. On parle souvent de la façon d'aider l'industrie par des recherches coopératives ou par des contributions, un partage des dépenses sur des projets spécifiques. Tout ça serait très bienvenue, c'est bien sûr.

REPORTER: Mais qu'est-ce que ce sera le modèle? Le CNRS, le Centre national de la recherche scientifique de France ou le modèle japonais? Qu'est-ce que ce serait le modèle idéal pour les Canadiens?

LABBE: Oh vous savez, les modèles - il y en a partout et les gens changent de modèle à tous les deux ou trois ans. Ce qui est beaucoup plus important que les modèles, c'est des personnes décidées, des personnes convaincues qui ne... qui ne parlent pas tout simplement, mais qui agissent. C'est... à peu près n'importe quel modèle peut fonctionner avec des hommes déterminés. Bien sûr que parfois, un modèle peut servir davantage et celui que le gouvernement fédéral veut se donner, de réunir la technologie et la science avec l'industrie de commerce, est probablement le meilleur dans les... par les temps qui courent.

REPORTER: Maurice Labbé, je vous remercie.

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PROGRAM:
EMISSION: NEWS

DATE: JANUARY 12, 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: CKGM (MONTREAL)

TIME: 5:00 PM
HEURE:

CONFERENCE ON TECHNOLOGY IN TORONTO.

CKGM: The Mulroney government is poised. It wants to show the world it is serious about making Canada a world leader in technology, with a three day conference planned. Here's Roger Ward.

REPORTER: In 1984, Brian Mulroney promised to double Canada's commitment to research and development. Instead, there have been heavy cutbacks. At the conference tomorrow in Toronto, 200 of Canada's leaders in technology will begin formulating recommendations on what Canada needs to be a technological leader. But although Mulroney called the conference, he might have a hard time convincing the participants of his sincerity. Still conference organizer, Dr. Robert Richardson, asserts government participation is only part of it.

ROBERT RICHARDSON: What makes it work is our private sector, university effort. Our national effort...of which government is only a part.

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REPORTER:

And tomorrow Mulroney is expected to announce \$1 billion in new government spending. Roger Ward,

Toronto.

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EMISSION:

LES INFORMATIONS

DATE:

DATE: 12 JANVIER 1988

NETWORK / STATION:

RESEAU / STATION:

RADIO CANADA/CBOF

TIME:

HEURE: 17H30

LE GOUVERNEMENT CRITIQUÉ POUR NE PAS AVOIR DOUBLÉ LES CRÉDITS À LA RECHERCHE

CBOF: C'est demain que s'ouvre à Toronto la Conférence nationale sur la technologie et l'innovation convoquée par le Premier ministre Mulroney. Mais, il y a déjà une ombre au tableau, les grandes centrales syndicales québécoises et canadiennes entendent boycotter cette conférence estimant que les organisateurs ont agi de façon cavalière à l'endroit de la présidente du Congrès du travail du Canada Sherley Carr. Cette dernière aurait été écartée comme conférencière en raison de son opposition au libre-échange ce que nie le gouvernement. Ottawa affirme que le nom de madame Carr n'apparaissait pas sur la liste des participants soumise par le CTC. Mais au delà de cet accrochage, le gouvernement Mulroney a été critiqué pour ne pas avoir respecté sa promesse de doubler les crédits affectés à la recherche au Canada. Selon le directeur de la conférence, le gouvernement n'est cependant pas le seul à blâmer.

REPORTER: Alors que les pays développés consacrent de plus en plus de ressources à la recherche et au développement technologique, le Canada traîne dangereusement la patte. En 84,

Brian Mulroney promettait de doubler en 4 ans les investissements dans ce secteur stratégique. Quatre ans plus tard toutefois, la proportion de notre produit national brut consacré à ce domaine, demeure inchangée à un et un tiers pour cent. Demain, le Premier ministre Mulroney va profiter de la Conférence nationale sur la technologie et l'innovatin pour annoncer des investissements gouvernementaux qui promettent d'être substantiels mais qui risquent d'être insuffisants pour atteindre l'objectif promis. Toutefois, selon Robert Huchitson, le directeur de la conférence, il ne faut pas seulement blâmer le gouvernement, l'industrie n'a pas fait sa part.

ROBERT HUTCHISON: Les compagnies qui comme Northern Télécom ou Alcan Noranda etc. qui a leur laboratoires, il y a beaucoup des autres qui fait rien.

REPORTER: Enfin à peine 2% des compagnies canadiennes ont des budgets de recherche. À Ottawa, on estime que l'industrie canadienne devra prendre part à la révolution technologique sur les marchés mondiaux.

Pierre Tanguay à Toronto

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PROGRAM: EMISSION:	THE WORLD AT SIX	DATE: DATE:	JANUARY 12, 1988
NETWORK / STATION: RESEAU / STATION:	CBC/CBO	TIME: HEURE:	6:00 PM

GOVERNMENT RECORD ON R & D NOT STRONG.

CBO: In Toronto tomorrow, Prime Minister Mulroney is expected to announce new government spending on research and development. The Prime Minister will open a three-day conference that has been described as a summit of the best and the brightest. The conference is supposed to draw attention to the government's commitment to scientific research. But as we hear in this report from Dick Gordon, the record is not a strong one.

FRANK OBERLE: The fact is, the NRC is undergoing a process of rationalization...

REPORTER: A little over a year ago, the Tories weren't winning any points with the scientific community. What Science Minister Frank Oberle was calling rationalization, was really the swinging of his budget axe at the National Research Council...\$20 million, 250 jobs and dozens of research projects were cut.

OBERLE: You know, we are in a new age, new priorities have to be established, and painful decisions have to be made from time to time.

REPORTER: To make matters worse, the cuts were announced just as a Toronto scientist won the Nobel Prize for Chemistry.

Q: Mr. Oberle wasn't it a little bit unfortunate as far as the government was concerned. You've cut \$20 million from NRC on the same day that Polanyi wins the Nobel Prize. I mean that's ...

OBERLE: Well, I'd say...I'd agree with you that's tough luck.

REPORTER: If the government has it's way, tomorrow's conference on technology and innovation will turn its image around.

DE COTRET: This conference is effectively and economic summit of many of the best and the brightest minds this country has ever produced.

REPORTER: The new Minister of Science, is Robert de Cotret. In fact, he's now in charge of a new Ministry, called Industry, Science and Technology. De Cotret says the real answer to boosting research and development is in drawing together universities, business and government.

DE COTRET: We want to create a ribbon, if you like, which starts with pure research, you know, curiosity research at one end of the spectrum, going through academic research, applied research or industrial research, if you like; going through the actual industrial process all the way through to the marketing.

REPORTER: The Tories are going to have to work hard to convince some members of the scientific community that all this good news is worth notice. Let's look at the case of one scientist. This man still depends on the government for money, and he wouldn't like his name used, so we'll call him Mr. Smith. Smith used to do his research at a government lab. When the cuts were announced, he considered himself lucky, he was able to move his work to a university, and he's still working. But now the university expects him to teach, to mark papers, to hire and train graduate students and to maintain his academic profile by writing. As well, he's busy applying for various grants to keep his lab running. So the pace of his own research, he says, has slowed to a crawl. The Conservatives are now poised to use tomorrow's convention as a platform to show a brand new commitment to science. The research jewel in this election year will come when Prime Minister Brian Mulroney unveils new money to boost research at tomorrow's conference. His Science Minister, de Cotret, says we'll just have to wait for the specifics.

DE COTRET: I won't try to scoop my Prime Minister, but certainly we're going to have to devote more resources to research and development.

REPORTER: When de Cotret announced plans for this conference, he released an impressive list of participants, including the presidents of universities and large corporations. These people are supposed to help raise public awareness of the new plan to bring government, schools and businesses together and if, along the way, this government's image is enhanced, well, who'll complain about that. Dick Gordon, CBC News, Ottawa.

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PROGRAM:
EMISSION: LE TÉLÉJOURNAL

DATE:
DATE: LE 12 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: RADIO CANADA/CBOFT

TIME:
HEURE: 22H00

CONFÉRENCE SUR LA TECHNOLOGIE ET L'INNOVATION

CBOFT: Le Premier ministre qui sera demain à Toronto pour la Conférence nationale sur l'Innovation et la Technologie. Le Canada est un des pays industrialisés qui dépense le moins pour la recherche scientifique et on s'attend à ce qu'Ottawa annonce demain qu'il veuille y consacrer des sommes importantes. Julie Miville-Deschênes(?), du reste, a constaté que les retards du Canada sont énormes dans le domaine de la recherche.

REPORTER: Ces diskettes de silicone, bourrées de micro-processeur, sont fabriquées par une petite compagnie ontarienne, Genum. Contrairement à la plupart des entreprises canadiennes, Genum dépense 20 % de ses revenus en recherche - un investissement qui permet à la compagnie de faire face à la compétition.

DOUGLAS BARBER: And we're a growing company because we reinvest (Président, Genum) what we earned in our own development and growth.

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REPORTER: Gennum est une exception, car au Canada - à peine 2 % des entreprises font des dépenses en recherche. Les trois quarts des petites compagnies n'ont même pas un ingénieur à leur emploi. Résultat - 80 % de la technologie que nous utilisons est importée. Au dire des spécialistes, nous ne pourrions pas rester compétitifs bien longtemps si l'industrie ne coupe pas sur ses produits pour se lancer dans la recherche et l'innovation.

JOHN ROTH: A Canadian industry has to take money out of (Vice-prés., Northern Telecom) profits and put it into research and development.

REPORTER: C'est un peu le but que s'est fixée la Conférence nationale sur la technologie et l'innovation qui s'ouvre demain à Toronto. Mais il y a un autre aspect dans l'équation - les dépenses gouvernementales. Et dans ce domaine, industriels et scientifiques disent qu'Ottawa ne dépense pas assez.

FRASER MUSTARD: For a developed country, a base in R&D is weak. (Institut can. des recherches avancées) There's got to be a lot more public support...

REPORTER: C'est que Brian Mulroney avait promis, en campagne électorale, de doubler ses dépenses en recherche. Or, rien n'a encore été fait. Demain, le Premier ministre profitera de la tribune de la conférence pour annoncer qu'il débloque de nouveaux fonds. Certains parlent de 1 milliard de dollars.

MULRONEY: Et j'aurai une intervention, je pense, «importante»

à faire demain...

REPORTER: Mais bien des scientifiques disent déjà que ce n'est pas 1 milliard qu'il faudrait injecter, mais bien 3-4 milliards pour que le Canada rattrape les autres pays en matière de recherches scientifiques. Les milieux scientifiques sont conscients du caractère très politique qu'aura cette conférence. C'est Brian Mulroney qui a convoqué les partis et il se servira de cette tribune pour distribuer de l'argent. Mais on espère quand même que ce forum permettra au chef de fil de l'industrie et à Ottawa de développer une stratégie commune pour rattraper le retard immense du Canada en matière de recherches scientifiques.

Julie Miville-Deschênes à Toronto.

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PROGRAM:
EMISSION: LES INFORMATIONS

DATE: LE 13 JANVIER 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: RADIO CANADA/CBOF

TIME: 7H00
HEURE:

CONFÉRENCE SUR LES SCIENCES À TORONTO

CBOF: Le Premier ministre Brian Mulroney doit annoncer de nouveaux engagements de 1 milliard de dollar pour la recherche et le développement aujourd'hui à Toronto. Trois ans après avoir promis de doubler les budgets dans ce secteur, il s'apprête maintenant à délier les cordons de la bourse.

REPORTER: Après avoir lancé 1988 avec la signature de l'accord de libre échange avec les États-Unis, le Premier ministre Mulroney enchaîne avec la Conférence nationale sur la technologie et l'innovation - une conférence pour commencer à remplir des engagements électoraux négligés jusqu'à maintenant ou plutôt, dans les mots du ministre Robert de Cotret qui la préside...

DE COTRET: La conférence vise et je cite à faire en sorte de mieux orienter l'appui accordé aux sciences, à la technologie et à l'éducation dans l'intérêt national.

REPORTER: C'est le premier de deux événements cette semaine susceptible de donner une idée du ton économique que le gouvernement veut faire prendre au Canada sous le régime du libre échange avec les États-Unis. Immédiatement après la conférence, Brian Mulroney reçoit le tout nouveau Premier ministre du Japon, Noboru Takeshita(?). Le libre échange aura une place de choix dans leurs entretiens pour rassurer Tokyo parce que le Japon a tendance à craindre que l'entente ne constitue le premier rempart d'une éventuelle forteresse commerciale Nord-américaine à notre deuxième partenaire commercial. Brian Mulroney veut plutôt la présenter comme un modèle à suivre pour libéraliser le commerce international.

Chantal Hébert à Ottawa.

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PROGRAM: EMISSION:	CANADA AM	DATE: DATE:	JANUARY 13, 1988
NETWORK / STATION: RESEAU / STATION:	CTV/CJOH	TIME: HEURE:	7:25 AM

CANADA'S POOR RECORD ON R & D

CTV: You know, just about all Canadians agree that the keys to our future prosperity are being competitive, being innovative, being flexible and developing the facilities for producing low cost, excellent weathering products or in services. Well, the question then is if everybody is agreed on these points, how is it that Canada spends less on researching new products than any other industrialized country? The Conference on Technology and Innovation that's now going on in Toronto has brought together a star-studded group of business people, government bureaucrats and politicians, all of whom are concerned that Canada spends less than any other G-7 countries. And now the point is, we all have a responsibility to do more about technology.

I'm Dian Cohen.

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PROGRAM: NEWS
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CFGO
RESEAU / STATION:

TIME: 5:00 PM
HEURE:

RESEARCH AND DEVELOPMENT FUNDING

CFGO: The Prime Minister is promising another \$1.3 billion for high-tech research and development over the next five years. Brian Mulroney announced the figures as he opened a three-day science and technology conference in Toronto. This follows up a 1984 election promise which the opposition parties have accused the federal government of turning its back on. They also contend the Toronto high-tech conferences are a little more than costly PR stunts.

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PROGRAM: NEWS
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CKGM (MONTREAL)
RESEAU / STATION:

TIME: 5:00 PM
HEURE:

ONE POINT THREE BILLION FOR SCIENCE AND TECHNOLOGY

CKGM: The Prime Minister has unveiled two major items relating to Canada's future in science and technology.

REPORTER: At a conference in Toronto, Brian Mulroney unveiled a plan to spend a lot more money.

MULRONEY: New federal funding of one point three billion dollars for new federal science and technology initiatives over the next five years.

REPORTER: That money will be allocated to new programs ranging from education to research. He also announced a new Department of Industry, Science and Technology. Mulroney was speaking to about two hundred leaders of technology at the conference he initiated. He admitted Canada has not been performing as well as major competitors in the world but he pinned the lack of competition on decades of neglect not his government. The Conservatives have been blamed for cutting back on funding but Mulroney says Science

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and Technology have been a priority from the beginning but he noted the government has first tackled unemployment and free trade.

Roger Ward, Toronto.

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PROGRAM: THE WORLD TODAY EMISSION:	DATE: JANUARY 13, 1988 DATE:
NETWORK / STATION: CJAD (MONTREAL) RESEAU / STATION:	TIME: 5:05 PM HEURE:

MONEY FOR SCIENCE AND TECHNOLOGY

CJAD: The federal government has announced one point three billion dollars worth of initiatives for science and technology and the announcement came from the Prime Minister himself as he opened a national conference on technology in Toronto.

REPORTER: Prime Minister Mulroney read ten pages of speech outlining his government's achievements, the failures of previous governments and the benefits of free trade before announcing the one point three billion dollars to be spent over five years on initiatives such as a national program of centres of excellence and scholarships in science and engineering. Mulroney says we should recognize the importance of ensuring our children can meet the challenges of the twenty-first century.

MULRONEY: This requires the world class educational system who's cornerstone are the teachers.

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REPORTER: This announcement falls short of Mulroney's 1984 election promise to double the percentage of gross national product currently spent on research and development to two point five per cent.

In Toronto, Austin Delaney reporting.

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PROGRAM: NEWS HOUR
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CKO-FM
RESEAU / STATION:

TIME: 5:30 PM
HEURE:

INTERVIEW WITH CHRIS TRUMP OF SPAR AEROSPACE

CKO: Chris Trump is the Vice-President for Corporate Affairs of Spar Aerospace. Mr. Trump, your company has been spectacularly successful in the R&D field. Do you think that Canada is now heading in the right direction?

CHRIS TRUMP: I would say so. I think that the principal part of getting to where one wants to get is to focus attention on it; in other words, to lay out a map and then say: Alright, these are the steps in the journey that we'll have to take to get there and this involves everyone, not just Spar, but I think, to a large extent, the programs that we're involved in in space involves all Canadians. It's taxpayers' dollars and I think that, well, getting people's attention is a principal part of it.

CKO: I think the Prime Minister may have gotten our attention with \$1.3 billion, but do you think that's enough?

TRUMP: Oh it's hard to assess you know. I mean we've talked to colleagues here and they would tell you: No, it's not enough. And you come up with three and they would say: That's still not enough. I'd say that is a very good start in terms of, you know and it's not so much the amount of money. It's how it's applied.

CKO: This may be throwing a curve at you, Mr. Trump, but I wonder if you could tell me apart from the aerospace industry, where do you think Canada should be concentrating its research and development?

TRUMP: Oh I think we have strong suits in communications. That is an area where Canada's second to none and of course, a lot of that is here, you know, a national need. In biomedicine: that is a Canadian strong suit and I'm not excluding others in that, but these are areas where we really, medical research, would be one that I would rate very highly is where we have the brain power and we have the capability, certainly the record, the discovery of insulin for Canadian right, I mean; so that those would be two areas that come to mind.

CKO: Does Spar get federal funding, Mr. Trump?

TRUMP: Yes we do.

CKO: To the tune of what?

TRUMP: Well if you consider that the space program, you know, whether it's the Canada Arm or the Space Station, that is that those are all federally funded and I would say of our annual revenues, \$200 million, I would say that 40 percent of that is federal funding.

CKO: Do you think Spar needs more?

TRUMP: Oh in terms of the research and development, yes. I think there is a, particularly our area of interest, is artificial intelligence and robotics and that certainly can use more funding; but I am not about to say at this point, having heard, you know, the good news: Hey it still isn't enough. You know, we feel that the indicators are go and they're pointed in the right direction and we're very happy for that.

CKO: Thank you sir.

TRUMP: Nice to be with you Dennis.

CKO: Chris Trump, the Vice-President for Corporate Affairs of Spar Aerospace.

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PROGRAM: NEWSHOUR
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CKO-FM
RESEAU / STATION:

TIME: 5:30 PM
HEURE:

PRIME MINISTER PLEDGES \$1.3 BILLION FOR REGIONAL CENTRES OF EXCELLENCE

CKO: Prime Minister Brian Mulroney has committed \$1.3 billion in federal funding over the next five years to promote science and technology. Mulroney made the announcement at the opening of the national conference on technology and innovation in Toronto. Sean Murray reports.

REPORTER: The bulk of the funding will be aimed at universities; centres of excellence similar to those launched by the Province of Ontario will be set up across the country with an independent panel of experts deciding where the money should go, and Mulroney says, a new scholarship program for science and engineering students will help ensure Canada is better prepared for the future.

BRIAN MULRONEY: All of the policies and programs in the world will get us nowhere or certainly won't get us very far, if our people are not properly trained to carry them out.

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REPORTER: Mulroney wrapped up a campaign-style speech
saying Ottawa will discuss the implementation
of the new spending with the provinces and territories as well as
the private sector.

Sean Murray, News Radio, Toronto.

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PROGRAM:
EMISSION: FIRST NEWS

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: GLOBAL/CIII

TIME: 5:30 PM
HEURE:

SCIENCE AND TECHNOLOGY RECEIVES FINANCIAL AID

GLOBAL: Prime Minister Brian Mulroney today pledged help for science and technology in Canada. He said over the next five years, Ottawa will spend \$1.3 billion to create regional centres of excellence at universities. The Prime Minister also said a new Ministry of Industry, Science and Technology will be set up. Mr. Mulroney said the new program is designed to keep Canada competitive in world-class research.

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PROGRAM: EMISSION:	LES INFORMATIONS	DATE: DATE:	13 JANVIER 1988
NETWORK / STATION: RESEAU / STATION:	RADIO CANADA/CBOF	TIME: HEURE:	17H30

AUGMENTATION DES CRÉDITS POUR LA RECHERCHE

CBOF: Le Premier ministre du Canada Brian Mulroney a donné les détails de son plan de relance de la recherche et du développement au Canada. Il comporte la mise sur pied de 5 centres d'excellence dans les universités canadiennes et un programme de bourses en sciences et en génie. Tout cela pour la somme d'un milliard 300 millions de dollars sur 5 ans.

REPORTER: En matière de recherche et de développement, le Canada est à l'heure du rattrapage, il traîne la patte derrière les autres pays industrialisés et aujourd'hui, devant le gratin du monde scientifique et industriel et universitaire le Premier ministre Mulroney déclare que c'est la faute de tout le monde qu'au Canada gouvernement et industries négligent leur devoir en matière de recherche et de développement et qu'il faut que ça cesse.

BRIAN MULRONEY: Il faut absolument que tous les Canadiens participent à l'effort national d'accroître notre compétitivité sur les marchés internationaux qui ne cessent d'évoluer.

REPORTER: Un effort national qui verra Ottawa consacrer ces millions à créer un réseau de chercheurs dans les universités du pays et inviter l'industrie à dépenser pour s'en servir. Un bon début dit la communauté scientifique et des dollars qui sont bienvenus surenchérieraient les universitaires. Pierre Bélanger de McGill.

PIERRE BÉLANGER: On peut pas régler un problème comme celui-là (McGill) du jour au lendemain. Il faut évoluer vers une solution et on peut pas tout mettre le paquet en même temps, je veux dire ça serait vraiment pas souhaitable.

REPORTER: À vrai dire aujourd'hui, personne ne voulait faire la grimace sur les millions du gouvernement, des millions réclamés par les universités depuis longtemps. Mais cela n'a pas empêché plusieurs des invités de Brian Mulroney de faire leurs calculs, de dire qu'avec 270 millions de dollars de plus par année, le gouvernement est encore loin de réaliser sa promesse vieille de trois ans de doubler la part qu'il consacre à la recherche et au développement.

Chantal Hébert à Toronto.

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PROGRAM:
EMISSION: THE WORLD AT SIX

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: CBC/CBO

TIME:
HEURE: 6:00 PM

MULRONEY ANNOUNCES GOVERNMENT R&D SPENDING.

CBO: The Prime Minister has announced plans to spend \$1.3 billion on education and technology. And, with that promise, Mulroney expects some commitments in return from Canadian business. The Prime Minister made the announcement this afternoon at a technology conference in Toronto. The meeting marks the beginning of what could become another election theme for the Conservatives. Here's Dick Gordon.

REPORTER: The sound blares out of television monitors at the technology conference. John Bowes is technical officer with the Canadian Plastics Institute. Today he's straightening up the pamphlets under a bank of flashing lights and purple cardboard.

JOHN BOWES: We want to catch the eye of all the people going by, both government, outside people, and of course our own supporters.

REPORTER: This is more than the average trade show for Bowes. Today he'll meet the Prime Minister, and he's hoping for some good news in his area of research.

ONLY FOR USE AND INTERPRETATION

BRIAN MULRONEY: I want to welcome all of you to Toronto and to this national conference on technology and innovation.

REPORTER: Upstairs in a large ballroom, the Prime Minister delivers his good news.

MULRONEY: I am announcing today additional new federal funding of \$1.3 billion for new federal science and technology initiatives over the next five years...

REPORTER: Mulroney told the roomful of corporate executives and university people he wants some of that money spent on what he calls centres of excellence...specialized research groups set up at selected Canadian universities. He'll also be handing out 2,500 new scholarships each year in the next five years in science and engineering. Pierre Belanger is dean of Engineering at McGill University. He says the money will help, because it is being directed to students and the new research centres.

PIERRE BELANGER: There certainly will be something, for example, in these budgets, for travel, for exchange, perhaps for video transmission, so that a student at say the University of Montreal can attend a seminar at UBC live, not necessarily in colour, but you know, these linkages I think will make a difference and will have an impact.

REPORTER: Belanger admits however, that today's announcement won't do anything for the growing dilemma at Canadian

universities for overall funding. Howard McCurdie is an NDP MP who is also a college professor. He says the Tories have missed the mark.

HOWARD MCCURDIE: ...and this government has not come up with a single initiative that is going to improve the general quality of either secondary education, high school education, or the university system. And unless that is done, there will be no significant improvement in the research and development in this country...

REPORTER: Downstairs at the Plastics booth, John Bowes is delighted. Not only did he meet the Prime Minister, but he's happy with the news. He thinks the Conservatives are listening to the people, and he agrees with the Prime Minister with the role of business.

BOWES: Industry is going to have to do more, and I think industry is aware of that. They just wanted to have the guidelines defined as to how they participate with the government and the universities in the development of new products. Without new products, we'll fall behind...we being Canada. Because the free trade will just come the other way and we'll be swamped.

REPORTER: Prime Minister Mulroney couldn't have put that better in his own words. He denies that even in what's likely an election year, he's tossing around money to win votes.

He says technology is the edge that will make his free trade deal work. Today's announcement of scholarships and centres of excellence he says, is just the start. Dick Gordon, CBC News, Toronto.

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PROGRAM: NEWSDAY
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CBC/CBOT
RESEAU / STATION:

TIME: 6:00 PM
HEURE:

RESEARCH AND DEVELOPMENT FUNDING ANNOUNCED

CBOT: Prime Minister Mulroney has a \$1.3 billion answer for critics who say his government is ignoring research and development. The Prime Minister is committing the money over the next five years to science and technology. David Halton has this report from Toronto.

REPORTER: The Prime Minister made the announcement today at a national conference on science and technology in Toronto. Mulroney said Canada still lags behind most other industrial countries in the research and development that's so vital for economic expansion. Today's commitment he said will help close that technological gap.

BRIAN MULRONEY: I am announcing today additional new federal funding of \$1.3 billion for new federal science

...2

and technology initiatives over the next five years.

REPORTER: Mulroney said the federal funds will be spent on two major initiatives. A program to develop so-called centres of excellence for new technologies, such as microelectronics and biotechnology and a program that will offer scholarships for 2,500 science and engineering students each year.

MULRONEY: The fact is that nobody's going to help us. We're all Canadians. We're all in this together and we have got to do it together in an increasingly competitive world.

REPORTER: Mulroney's announcement was welcomed by representatives here from the science and business communities.

UNIDENTIFIED: I think this announcement is a step in the right direction. It's a step to encouraging Canadians first of all to think about science and technology.

REPORTER: But Howard McCurdy, NDP Science Critic said Mulroney has failed miserably to fulfill his '84 election promise to double Canada's spending on research and development.

HOWARD MCCURDY: Well I think a lot of people thought that they were going to get an earthquake in the area of

science and technology policy from the government. We got a tremor. The mountain brought forth a pebble.

REPORTER: Government officials concede that today's commitment does fall far short of what Mulroney promised in the '84 election campaign, but they say no previous Canadian government has given such a high profile to Canada's science and technology needs.

David Halton, CBC News, Toronto.

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PROGRAM: EMISSION:	NEWSLINE	DATE: DATE:	JANUARY 13, 1988
NETWORK / STATION: RESEAU / STATION:	CTV/CJOH	TIME: HEURE:	6:00 PM

RESEARCH AND DEVELOPMENT FUNDING

CJOH: Prime Minister Mulroney has unveiled a \$1.3 billion grant to help promote research and development in Canada. The money will fund new university programs, scholarships and other technological ventures.

REPORTER: In the broad field of research and development, Canada's record pales in comparison to many other industrialized countries. Among the Big-7 economic nations, Canada spends the lowest percentage of its gross national product on R&D so leaders from business, labour and education have gathered in Toronto to discuss and find ways to improve Canada's standing. As expected, Prime Minister, Brian Mulroney opened the conference announcing an extra \$1.3 billion will be spent on R&D over the next five years.

BRIAN MULRONEY: The government is challenged to do more and we accept that challenge and we welcome it.

In turn, I ask what you're going to do. This is a pretty impressive group of people.

REPORTER: Part of the money will fund centres of excellence programs at universities where scientists can conduct research and 2,500 scholarships will be given out each year to university students taking science and engineering courses. Mulroney has been criticized for not keeping his 1984 election promise to give research a larger share of the GNP. The former head of Canada's Science Council says the new money won't raise that percentage very much, but he adds that it's a start.

STUART SMITH: Well it certainly doesn't go anywhere near making Canada somewhat similar to all the other advanced countries. They spend much more on research than we do. This is a start.

DAVID PETERSON: ...and as I said that may be charitable. Better (Ontario Premier) late than never.

REPORTER: The Prime Minister will return to the technology conference on Friday to hear where the experts think Canada should head in this important field.

Leon Korbee, CJOH News, Toronto.

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PROGRAM: EMISSION:	NEWS	DATE: DATE:	JANUARY 13, 1988
NETWORK / STATION: RESEAU / STATION:	CHCH (HAMILTON)	TIME: HEURE:	6:00 PM

SCIENCE AND TECHNOLOGY CONFERENCE

CHCH: Prime Minister Mulroney has announced that more than a billion dollars will be spent over the next five years on science and technology in Canada. As Dwight Ryan reports from Toronto, much of the money will go to training scientists and researchers for the future.

REPORTER: The federal government admits that except for the Aerospace industry Canada is losing its competitive edge when it comes to research and development. Today in Toronto, Prime Minister Mulroney says it's time Canada realized its own potential for excellence in this field. He offered federal funding to help.

MULRONEY: I am announcing today additional, new federal funding of one point three billion dollars for new federal science and technology initiatives over the next five years. Funding that recognizes the regional realities of Canada.

REPORTER: The lion's share of the money will go to Canada's universities creating centres of excellence.

MULRONEY: The broad purpose of the program is to establish networks of researchers and scientists across the country to conduct worldclass research in areas crucial to Canada's long-term competitiveness.

REPORTER: As well, twenty-five science and engineering scholarships a year will be created. Now, most of the audience at the National Conference on Technology and Innovation and Dr. Stuart Smith, a former chairman of the Science Council of Canada now an Ottawa consultant, Smith says the funding is a step in the right direction.

SMITH: Well, this is a little over two hundred and fifty million dollars a year and that's certainly not to be sneezed at.

REPORTER: Windsor, Ontario New Democrat, Howard McCurdy, says the money is a hypocrite stand and at the same time it's misdirected.

MCCURDY: Twenty-five hundred new merit scholars are going to go into a university system that is crumbling from the lack of adequate funding to do inadequately funded research.

REPORTER: McCurdy believes university funding should be doubled.

In the meantime, a national panel will be set up to determine who will get the money and how much.

In Toronto, Dwight Ryan, CB Eleven Newsroom.

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PROGRAM:
EMISSION: NEWSDAY

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CBC/CBOT
RESEAU / STATION:

TIME: 6:00 PM
HEURE:

HIGH-TECH COMMUNITY THRILLED WITH GOVERNMENT ANNOUNCEMENT

CBOT: And you can bet Ottawa's high-tech community will be after some of that federal money. Industry people say if politics aren't involved, Ottawa will be a sure winner. Trisha MacDonald reports.

REPORTER: Ottawa prides itself on being the high-tech capital of Canada. More than 20,000 people are employed in research and development and that doesn't include the massive amount of government work. Ottawa's high-tech community is thrilled that the federal government will spend \$1.3 billion on scientific research and development.

UNIDENTIFIED: This is one bit of federal money we're going after. You're darn (inaudible).

REPORTER: If Ottawa is to get any of that money, it will have to be chosen as a centre of excellence in some field; such as microelectronics. Gerry Turcotte, an industry spokesman

says all this money into research will pay off in a few years.

GERRY TURCOTTE: I think what we'll see will be, as I say, eight (Ottawa-Carleton Research) to ten years out, it'll be an increase in the flow of bright young people into our industries to keep them competitive.

REPORTER: Gerry Turcotte says there's every reason to believe that Ottawa will receive a chunk of this federal money, as long as the decision is made fairly. He says if politics get in the way, this area could lose out because there's a perception out there that Ottawa is already getting too much from the public purse.

Trisha MacDonald, CBC News, Ottawa.

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PROGRAM:
EMISSION: CHOT VOUS INFORME

DATE: 13 JANVIER 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: TVA/CHOT

TIME: 18H00
HEURE:

UN MILLIARD TROIS CENTS MILLIONS DANS LA RECHERCHE

CHOT: Le gouvernement fédéral investira un milliard trois cents millions de dollars dans la secteur de la recherche et du développement. C'est le premier ministre Mulroney qui a annoncé la nouvelle aujourd'hui à Toronto, lors de l'ouverture d'une conférence nationale sur la science et la technologie. L'Opposition a souvent reproché au gouvernement de ne pas tenir ses promesses électorales dans ce domaine.

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PROGRAM: EVENING EDITION
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: GLOBAL/CIII
RESEAU / STATION:

TIME: 6:00 PM
HEURE:

PRIME MINISTER ANNOUNCES \$1.3 BILLION FOR RESEARCH AND DEVELOPMENT

GLOBAL: Prime Minister Brian Mulroney announced in Toronto today that the federal government will put more than a billion dollars towards science and technology over the next five years. The funding is intended to establish scientific networks to conduct world-class research. ... (inaudible) ...

A poor Canadian performance on R&D on decades of neglect rather than what some say is neglect by his own government.

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PROGRAM: NEWS
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CITY (TORONTO)
RESEAU / STATION:

TIME: 6:00 PM
HEURE:

SCIENCE AND TECHNOLOGY CONFERENCE

CITY: A major boost today for science and technology.
While opening a conference on the subject, Prime Minister Brian Mulroney announced the federal government will spend an additional one point three billion dollars on technology advancement over the next five years. He also announced a new Department of Industry, Science and Technology.

MULRONEY: Canadians are aware that our future prosperity lies and depends on our ability as a nation to use science and technology to our advantage. They know that we've got to maximize the strengths of a resource based economy and must, as a national priority, develop new industries, produce new goods and offer new services and the way you do that, and there are not a half a dozen different ways, is through a concerted national effort in science and technology.

REPORTER: The Prime Minister spoke to two hundred leaders of technology at the conference. Mulroney will

spend the rest of the week here in Toronto. Friday, he welcomes Japanese Prime Minister, Hocashepa(?) to Metro.

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PROGRAM: 6:30 NATIONAL
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: GLOBAL/CIII
RESEAU / STATION:

TIME: 6:30 PM
HEURE:

PRIME MINISTER PLEDGES \$1.3 BILLION

GLOBAL: Canada's science and technology community got a \$1.3 billion boost today from Prime Minister Brian Mulroney. The federal money to be doled out over five years will be used to keep Canadian research competitive. Most of the money will go toward establishing centres of excellence on university campuses. Leslie Jones reports.

REPORTER: With words of praise for Canada's scientists, the Prime Minister toured an exhibit celebrating the country's past technological advances. A future for innovation is less certain. Canada is still technology-poor. The country imports \$7 billion more than it exports in high technology. The federal government says to ensure future prosperity. That must change. It will spend \$1.3 billion over the next five years on science scholarships for 2,500 university students a year and to establish centres of excellence on university campuses.

BRIAN MULRONEY: The broad purpose of the program is to establish networks of researchers and scientists across the country to conduct world-class research in areas crucial to Canada's long-term competitiveness.

REPORTER: The funding announcement falls far short of the promises Brian Mulroney made during the 1984 election campaign to double research and development spending. Although he admits Canada hasn't been performing as well as the US, Great Britain, Japan and West Germany, Mulroney says his government is not to blame.

MULRONEY: This is a reflection of a lackadaisical attitude that we have adopted in respect of science and technology over decades.

REPORTER: The opposition though says the announcement is more show than substance.

HOWARD MCCURDY: We're going to have something like 2,500 new merit scholars and we're going to establish centres of excellence. On \$200 million a year?
(New Democratic Party MP)

REPORTER: But Canada's scientific community is generally pleased. It says industry now has to do its part.

STUART SMITH: It's up to the industries of Canada to realize
(Science
Council of that we can't forever just cut down the trees
Canada) and dig up the minerals. We have to get into
these high value-added sophisticated products.

REPORTER: That's a theme the Prime Minister took up in
his speech. He'll find out exactly what industry
intends to do to ensure advances in research and technology when he
meets with conference delegates again on Friday.

Leslie Jones, Global News, Toronto.

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PROGRAM: AS IT HAPPENS
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CBC/CBO
RESEAU / STATION:

TIME: 6:30 PM
HEURE:

INDUSTRY MINISTER, ROBERT DE COTRET COMMENTS

CBC(1): After three years of holding the line,
 Ottawa is putting new money into science
and technology. Prime Minister Mulroney told a national conference
today that his government will spend \$1.3 billion over the next
five years on research and development. Some of that money
will go into a series of proposed centres of excellence across the country.
Industry Minister, Robert de Cotret is in charge of the new program.

CBC(2): Mr. de Cotret, the Prime Minister has acknowledged
 today that Canada hasn't been performing well; as
well as its competitors in terms of science and technology. Is the
\$1.3 billion going to close the gap?

ROBERT
DE COTRET: Close the gap, I wouldn't go that far. It's
 going to make a major contribution in terms
of moving towards closing that gap, but I don't think the \$1.3 can close

the gap totally. I think what we're indicating here following a series of initiatives that we've taken over the last three years again our seriousness in our intent on improving our science and technology effort in this country to make ourselves more competitive in world markets and keep the edge that we have in the markets in which we are already excelling.

CBC(2): Now this is a promise of money of course
 over five years. How many dollars will you
actually be spending this year?

DE COTRET: Well if you're talking about this current
 fiscal year ending in March, we're going to
be spending the budgets that have already been allocated the new money. We'll start in the next fiscal year and run for five years. We've, the Prime Minister has talked about the centres of excellence, which essentially means the regrouping of some of our best minds and some of our best researchers and some of our best human resources with some of our best research facilities across the country to give us an edge and also about the scholarship program and there will be more programs to be announced within that \$1.3 billion envelope over the next few months and that will be spread over the next five years.

CBC(2): What do you mean by regrouping? Are you
 going to set up these centres of excellence
as they're called, or are they going to be built around the

university or moving people out? How's it going to work?

DE COTRET: No regrouping in the sense that we feel
 very strongly that you need a better working
relationship between for example, the government labs, private
labs, industry and the university labs. You've got to get the community
and if you're talking about biotechnology, if you're talking about
information technology, if you're talking about some of the new
technologies that we're looking at trying to build a critical mass
because we've got to remember we are from a population point of view,
a fairly small country in that we've got tremendous capacities but if
we parcel them out and have three or four researchers here and three
or four there, we're not going to get the same kind of benefits than
if we build centres of excellence.

CBC(2): But aren't you in a sense though going to
 be setting up a whole series of potential conflicts
regional conflicts with these areas vying for the development money,
vying for the scientists and the expertise.

DE COTRET: No because we're going to be building out strength
 and I talked about excellence and when you
look at every region of the country, you do have strength and
knowledge in certain specific areas and you do have excellence. It's
just the question of making sure that the networks are in place to

ensure that we get the full benefit of them. If you're talking about, for example, marine biology, we're not going to be talking about marine biology in central Canada. If you talk about manufacturing, if you're talking about other areas, it may be the centre of Canada. If you're talking about the West, they've got an industrial base there that gives them a unique opportunity to do research and a whole host of agricultural areas and if you're talking about BC, it's the same thing. I think all regions will find their niche in this concept of centres of excellence.

CBC(2): Mr. de Cotret, is the idea of the government that you're going to use public money in order to prime the pump to get the private industry to do more?

DE COTRET: Private industry certainly and the provinces. I think it has to be a partnership and in a very real way, this is what this conference is all about. First of all, obviously raising the public awareness about the issue and the topic and the importance of meeting our goals if we're going to be competitive in the next century in world markets and secondly getting the other partners on side and getting them; not only on side in terms of getting them to agree with us, but in terms of really getting them into a dialogue where we can jointly elaborate a science policy for the country.

CBC(2): Mr. de Cotret, thank you for being with us tonight.

DE COTRET: You're very welcome.

CBC(2): Good-by.

DE COTRET: Bye bye.

CBC(1): Industry Minister, Robert de Cotret spoke to
 us from Toronto.

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PROGRAM:
EMISSION: AS IT HAPPENS

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: CBC/CBO

TIME: 6:30 PM
HEURE:

UNIVERSITY OF WATERLOO PRESIDENT COMMENTS ON RESEARCH AND DEVELOPMENT

CBC(1): Among the people in the audience when Prime Minister Mulroney made his announcement today was Douglas Wright, President of the University of Waterloo.

CBC(2): Well Dr. Wright, how much of a difference is the \$1.3 billion over five years going to make?

DOUGLAS WRIGHT: Quite substantial I expect.

CBC(2): In what areas? How is it going to help?

WRIGHT: Well, as I heard Mr. Mulroney's announcement, it is for a substantial increase in research on some network basis focused at universities in co-operation as M. de Cotret has indicated with other performers and some reasonable share of that money and it's not clear how much will be for the

centres of excellence because there are other programs that may have to be announced would nonetheless make a very sizeable impact to increase our budgets for research.

CBC(2): Let's look at this idea of the so-called centres of excellence. Will they in fact work or as we tried to talk to Mr. de Cotret about it, will it set up a series of regional jealousies and pulls on the various things being offered?

WRIGHT: Oh I don't think that the idea of the centres would exacerbate any regional problems. We do have a concern in Canada. Many programs in the past have tried to the same thing everywhere. Some years ago, there was a program for microelectronic centres and I'm sure that by the time they had finished there were 15 of them, each being funded with peanuts and obviously none of them could amount to anything. I think that the sense here is to have different roles and functions and if it's done properly with adequate resources to do whatever is the challenge to each centre.

CBC(2): But it can't be done without the private sector getting involved. Why is it so low to invest money in research and development?

WRIGHT: Well, I would have to say that as

I understood the centres of excellence, it would have to be primarily government money. The kind of research done in universities generally doesn't produce commercial returns within three or four years and to my knowledge that in general business requires a return on investment on that kind of time span. In every country, you're going to find that industry pays very little of the share of research done in universities. In even the major universities in the US that have very close relationship with industry places like Stanford and MIP(?), the amount of their research budget that comes from industry is, as I understand it, only six percent at Stanford, nine percent at MIP and MIP is quite extraordinary.

We already have in American firms, quite reasonable financial contributions from Canadian industry for university research. The point is that a reasonable number's only about five percent because the payoffs are not short enough for industry. The function of the university is to explore the frontiers and to produce people. The real investment of industry is after that initial work is done in doing the subsequent development and taking it to market.

CBC(2): Dr. Wright, up until this afternoon,

the Prime Minister has admitted that Canada has not been performing well in this area. Up till today, how would you have rated the government's efforts in this area?

WRIGHT: Well, there are two or three elements. Most reports over a long period of time have said that Canadian federal government have done far too much inhouse proportionately and that is within government labs, and that industry is not done enough in its own regard and the universities which depend on government have been underfunded. That's been a pattern that has prevailed for 15 or more years in Canada.

CBC(2): Briefly Dr. Wright, what should we be doing next?

WRIGHT: Well I think this conference is intended to produce a climate and changed attitudes that will lead everyone to be more concerned. The issue isn't so much doing R&D. The issue is being competitive, having healthy industries that produce employment and profits. To be competitive you've got to serve markets. To serve markets you have to be innovative. To be innovativ you've got to have access to research and do it. And it's that kind of chain reaction.

The biggest problem in fact, would be if we just pumped money into research without thinking of the rest of that chain, because then we could end up with just unproductive work. You have to think always from the market.

CBC(2): Dr. Wright, thank you very much for being with us tonight.

WRIGHT: Thank you.

CBC(2): Good night.

CBC(1): Douglas Wright is President of the University
of Waterloo. He spoke with us from Toronto.

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PROGRAM: NEWS
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CFTO (TORONTO)
RESEAU / STATION:

TIME: 6:30 PM
HEURE:

SCIENCE AND TECHNOLOGY CONFERENCE

CFTO: The federal government has plans to spend one point three billion dollars more on research and development in Canada over the next five years. Prime Minister Mulroney made the announcement today at a gathering of some of the top leaders in the science and technology industry. National editor, Tom Clark, has details.

REPORTER: At present Canada spends a total of about seven billion dollars on R & D. More than half of that is government money. But it represents only one point three per cent of this country's gross national product. In the last election campaign, the Tories promised to double that amount. Today's announcement fell well short of that, an increase of about twenty-five per cent but Mulroney made no apology.

MULRONEY: It may seem appealing to some to simply commit more funds to the task, borrowed funds to the task. But Canadians, I think, have learned that you can't spend what you

have not earned.

REPORTER: The new money will be used primarily for university based research and university scholarship programs.

FRANK KRUPY(?): I feel somewhat betrayed.

REPORTER: Frank Krupy was hoping to see something more. Since 1980 he has been working on a new technology for repaving roads. This process, he claims, can resurface highways for half the cost of traditional methods. His machine is now working, contracts are pending and he's about to go broke.

KRUPY: We're very close. We're about two weeks away now and when I say two weeks away, we're...I'm scrambling right now looking for funding.

REPORTER: Krupy has tried to get R & D money from Ottawa for the past three years with no luck and now with the government emphasis on research instead of development, he may have to sell out to an American firm. Others here sympathize but felt that some money for basic research is better than no money at all. While this announcement may be three years overdue and only one quarter of what was promised, it has served to recognize and to an extent remedy a growing crisis in scientific and industrial research of this country. It also puts in place a vital plank at the Conservative election platform clearing yet another hurdle's worth of possible federal votes later this year. Tom Clark, CFTO News.

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PROGRAM: INSIGHT
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CJAD (MONTREAL)
RESEAU / STATION:

TIME: 6:50 PM
HEURE:

RESEARCH AND DEVELOPMENT

CJAD: The Prime Minister is going to hand out more money for research and development in this country, something that is sorely needed. R & D in Canada currently stands at about one point three four per cent of GNP, about half of what the US and Japan each spend. To find out more about research and development we have Dr. Richard Crewe(?), dean of the faculty of medicine at McGill and Dr. Bitton-Stewart(?), the university's associate-dean of research. A question to you both. Are you happy to see these new grants from the government?

STEWART: Yes, the initial reaction would have to be one of contentment. However, I must immediately say that I have not seen the details of the proposals so my enthusiasm must be tempered until I have had a chance to review all the details and conditions.

CJAD: How has the government been so far? I understand they made some election promises about research

and development and I address this to either of you, how have they reacted so far? Have they lived up to the promise?

CREWE: Why don't I start that?

CJAD: Okay.

CREWE: I think that the answer is that they have had a series of initiatives which were designed to try and live up to their promises but in the field of medical research they were very disappointing. They instituted a matching grants program in which they tried to implicate the private sector into medical research and that program didn't work. It really hasn't put more real money into medical research. They have instituted some initiatives where they tried to make a closer link between the industrial complex and the research establishment in hopes, obviously, of building up a stronger industrial base. It's a little early to say whether those are going to work or not but they have not been major programs and there hasn't been a lot of money put into those areas. So, that they...all in all, I think that the research...the medical research community is very disappointed and feels that thus far they haven't lived up to their commitments. Bitton, have you got...

STEWART: Yeah, I would include that and I would say that not only the Medical Research Council but also the other two major councils that are funding research in Canada have been fairing equally unfortunate after the matching grants scheme

which again was announced in general terms, sounding very promising and then when you really analyzed it in detail it was clear that it really wasn't going to entuse any additional funds into our fundamental research which is so badly in need of support in Canada. We are far below what we should be based on being an industrialized nation the way we are.

CJAD: Well, maybe we should look at research and development and both of you can explain what the most important aspect of it is and why it's so important both for universities and for corporations. Dr. Crewe?

CREWE: That's, of course, a very large subject and we could spend hours and hours on it. There are several components to medical research. I think that the research establishment has always felt that non-targeted resources are the most effective way mostly because we're so bad at predicting what areas are going to be...are going to lead to developments which are going to both benefit mankind and have commercial...aspects which can be developed commercially for the welfare of the economy of the country. You know, if we were good at predicting then I think we would all say, yes, you can devise strategies which will say, alright, put so much money into such and such a field and we can expect in four or five or ten or twenty years that there be this much spinoff. Those predictions have almost always been wide of the mark and for that reason we feel that funding the research establishment adequately and letting the significant discoveries bubble up through is the best way in terms of fundamental research. You certainly

can put in resources, tax credits, no matter how you want to go about it such as the Japanese approach which will stimulate the development of discoveries, the industrial development. And we had very little of that in Canada up until this present government's initiatives.

CJAD: Should there be...should one look at what kind of research is being done and find out who it benefits more before the money is given. In other words, if the research seems to help a university but not industry, should that be investigated before the money is granted or should it not matter, is all research good?

STEWART: No. No, not all research is good but I would say that there has to be a large amount of fundamental research that can bring out new discoveries and there has to be a lot of them in order to have anything to transfer either to the bedside or to useful products any other way usual to mankind. And what Dean Crewe was saying before is so true in the sense that unless we had a big pot of ideas and good chances of serendipity and sustained support for investigators that are bright and by bright I mean by deemed by their peers to do very effective and good research. These are the people that should be funded but unless we have a large pool of these ideas, we won't have anything to transfer anyway to industry in the years to come and we won't have any new trained man power to conceive any other ideas. Research is not something that happens overnight or even in a year or two years. It takes many years of sustained investigation to provide

anything useful.

CJAD: Is that something that is difficult for a politician to understand? And is that why in this country we don't see research as being as important as say, other countries?

STEWART: I think so. I think it's difficult for politicians and I think it's difficult for maybe Canadians also... then somebody said that maybe Canada doesn't have a science...how did they express it? A cultural...science culture the way that maybe we should have.

CJAD: In medical research which I guess all things that both of you feel, seems to be research we can understand because it does affect all of us. And that's where at least most of us in the media seem to focus, is on medical research because we hope to clear up some of the diseases. Is there enough money in that pot right now? Should there be more? And is this where some of the other money is going to go?

CREWE: Oh, I think we're very short of resources for medical research. I haven't seen the proposal for probably very good reasons, because Mr. Mulroney hasn't announced it yet, but the write-up in the Montreal papers were not very precise. So, I think we still don't know quite how much is going to go into medical research and if it goes to medical research, what avenues the government is going to choose for its distribution. So, we

can't be very precise. But we certainly can say that there are are two lacks in medical research. And the first, the pot itself is too small and so we have not been able to build up a critical pool of investigators that is large enough. But there's another problem which is peculiar to Canada, particularly because we're so close to the United States. Within the research establishment, we have chosen to spread the money a little more thinly than I think we would like to have, and it is very difficult for an investigator who is making significant discoveries to assemble enough money to compete with the big research factories in the United States, so we will have promising young investigators who will get up to a certain size and a certain stage in their careers and they either are forced to tail off, because they're passed by the competition to the south, or in fact they go join that competition because they can double or triple their research funding. And that's one of the real serious consequences of the present state of funding.

CJAD: Dr. Stewart if somebody say at McGill who was
 a researcher and wasn't as yet lured away by the
money and the research grants in the US and they won a Nobel Prize,
would that attract more money to universities as a result? Is that
something politicians can understand?

STEWART: Well, I'm sure that that would attract some money,
 but it would be sad that it would be after the Nobel
Prize. I think that there should be enough understanding of our
priority and all the needs and all the things that beg to be investigated

thave can justify expenses before somebody has already won the Nobel Prize.

CJAD: Dr. Crewe, how can you work up more interest, at least among the public, who can then lobby their Members of Parliament and say research is important, I think you should give our universities more money?

CREWE: Well, I think it really is going to require sustained lobbying efforts, and the efforts are going to have to be ongoing and they're going to have to be aimed at both the public and the politicians. This is what's happened in the United States where the research establishment in conjunction with a lot of organizations has maintained a permanent office in Washington and has an educated group of legislators who I think have been very wise in how they handled research funding. We tend to shy away from lobbying in Canada and there are some attractive aspects about a society that doesn't lobby. Unfortunately, some of the prices we pay perhaps are unfortunate too.

CJAD: Thank you both.

STEWART: Thank you.

CREWE: Thanks.

CJAD: Goodbye. Dr. Richard Crewe is the Dean of the
Faculty of Medicine at McGill University and Dr.
Bitton-Stewart is the University's Associate Dean of Research.

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PROGRAM: EMISSION:	THE NATIONAL	DATE: DATE:	JANUARY 13, 1988
NETWORK / STATION: RESEAU / STATION:	CBC/CBOT	TIME: HEURE:	10:00 PM

MORE ON ANNOUNCEMENT OF RESEARCH AND DEVELOPMENT FUNDING

CBOT: Prime Minister Brian Mulroney says his government is committed to pumping life back into R&D in this country. That's short for research and development, and that's what helps industry and science make new technological advances. Today Mulroney pledged new money for science and technology, \$1.3 billion over the next five years. Our Chief Political Correspondent, David Halton reports.

REPORTER: The Prime Minister had a tailor-made platform for his announcement today. This national conference on science and technology was convened to examine how Canada can catch up to its major competitors in science and technology.

BRIAN
MULRONEY: I am announcing today additional new federal funding of \$1.3 billion for new federal science and technology initiatives over the next five years.

REPORTER: Mulroney said those funds will be used for scholarships for 2,500 science and engineering students each year and for so-called centres of excellence at universities to develop such new technologies as microelectronics and biotechnology.

MULRONEY: We haven't made all of the progress hoped for, but we have put in place all of the vital building blocks that will ensure solid and I think unrelenting progress for Canada in this important area.

REPORTER: Representatives of the science community said they welcomed Mulroney's announcement as far as it goes.

G. KENNEDY
WALLACE: It's a good step in the right direction,
(Science Council of Canada) but it's a small step.

REPORTER: It's not enough for you?

WALLACE: It's not enough but you've got to start somewhere.

REPORTER: Mulroney who also toured a science and industry exhibition here campaigned in the last election on the promise that he would double the level of spending on research and development. Today, opposition MPs noted that the level of

(spending hasn't changed in three years and they claim that today's announcement won't make much difference.

HOWARD

MCCURDY:
(NDP Science
critic)

Well I think a lot of people thought that they were going to get an earthquake in the area of science and technology policy from the government. We got a tremor. The mountain brought forth a pebble.

DAVID BERGER:
(Liberal Science
Spokesperson)

Now the talk has been impressive, but again, what is missing is the steps and the strategy and the actions which will take us in that direction.

REPORTER:

Mulroney is obviously sensitive to the charge that he hasn't fulfilled his old promise to double the level of spending on research and development. Asked about that issue later today, he said it's successful programs that count; not spending borrowed money on artificial targets.

David Halton, CBC News, Toronto.

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PROGRAM: EMISSION: LE TÉLÉJOURNAL	DATE: DATE: 13 JANVIER 1988
NETWORK / STATION: RESEAU / STATION: RADIO CANADA/CBOFT	TIME: HEURE: 22H00

UN MILLIARD TROIS CENTS MILLIONS POUR LA RECHERCHE

CBOFT: Bonsoir mesdames et messieurs. Le gouvernement fédéral s'engage à consacrer un milliard trois cents millions en argent nouveau au cours des 5 prochaines années à la recherche scientifique et à la formation. Mais, les milieux scientifiques pensent qu'il faudra beaucoup encore, ce qu'avait du reste promis le Premier ministre Mulroney pour rattraper le retard technologique énorme du Canada. Julie Mivilles-Dêchesnes explique.

REPORTER: Brian Mulroney semblait en campagne électorale aujourd'hui à Toronto. Il est venu inaugurer sa conférence sur la technologie, en demandant à tous et en particulier à l'industrie et aux provinces d'augmenter leurs efforts de recherche.

BRIAN MULRONEY: Il faut absolument que tous les Canadiens participent à l'effort national d'accroître notre compétitivité sur les marchés internationaux...

...2

REPORTER: Mais Brian Mulroney avait surtout une bonne nouvelle à annoncer: Ottawa injectera 1 300 000 000 d'argent neuf en 5 ans, en recherche et dans un programme de bourses d'études en sciences. L'idée est de créer des centres d'excellence pour la recherche dans les universités, mais on a pas encore décidé quelle province y aura droit. Les universités qui crient au secours depuis des années voient là un pas dans la bonne direction.

STUART SMITH: C'est un début, c'est quand même un début mais (Cons.can. sciences) ça ne règle pas le problème complètement bien sûr.

REPORTER: En fait, même avec ces nouveaux crédits, le gouvernement Mulroney est très loin de respecter sa promesse électorale de doubler les fonds alloués à la recherche.

PIERRE LORTIE: (Prés. Bourse de Montréal) Les statistiques vont rester à un niveau où elles sont maintenant jusqu'à temps que les entreprises commencent à changer leur moyen de concurrencer dans le monde.

REPORTER: L'industrie, qui n'aime pas se faire faire la leçon est prompte à rappeler la faiblesse des dépenses gouvernementales en recherche.

NON-IDENTIFIÉ: Lorsqu'on regarde en termes réels la contribution gouvernementale on s'aperçoit qu'en 1987 c'est inférieur à ce que c'était en 1970.

consistera principalement en séances de travail à l'issue desquelles les participants soumettront au gouvernement une série de recommandations devant permettre au Canada d'être plus concurrentiel à l'aube du 21e siècle.

Catherine Aubert à Toronto.

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PROGRAM:
EMISSION: LE GRAND JOURNAL

DATE:
DATE: 13 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: TQS/CFGS

TIME:
HEURE: 22H30

1 300 000 000 POUR LA RECHERCHE

CFGS: Le secteur de la recherche et du développement au Canada bénéficiera de l'injection d'une somme de 1 3 000 000 000 de dollars au cours des 5 prochaines années. Le Premier ministre Brian Mulroney en a fait l'annonce aujourd'hui à Toronto à l'ouverture de la Conférence nationale sur la technologie et l'innovation. Le Premier ministre avait l'annonce en août 87 de la création d'un super ministère de l'Industrie des Sciences et de la Technologie.

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PROGRAM:
EMISSION: LES NOUVELLES TVA

DATE:
DATE: 13 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: TVA/CHOT

TIME:
HEURE: 23H00

I MILLIARD 300 MILLIONS POUR LA RECHERCHE

CHOT: Le gouvernement fédéral investira 1 300 000 000 de dollars au cours des 5 prochaines années dans le secteur des sciences et de la technologie. Le Premier ministre Mulroney a fait part de ce projet à l'ouverture de la Conférence nationale sur la technologie et l'innovation à Toronto.

REPORTER: Il y a plus de 3 ans déjà, Brian Mulroney promettait que si son gouvernement était élu il doublerait les fonds alloués à la recherche et à la technologie. Il répétait cette promesse dans son dernier discours du trône. C'est maintenant réalité.

BRIAN MULRONEY: J'annonce aujourd'hui que le gouvernement fédéral affectera au cours des 5 prochaines années des fonds supplémentaires de 1,3 milliards de dollars au financement de diverses initiatives fédérales dans le domaine des sciences et de la technologie.

REPORTER: Ces sommes presque exclusivement réservées aux universités seront réparties entre un programme national de centre d'excellence sur les campus universitaires et un programme de bourses d'études en sciences, génie et disciplines connexes. Les réactions à cette annonce sont partagées. Si on admettait seulement que 1,3 milliards de dollars est un bon début, les universitaires estiment qu'il ne s'agit là que de 260 millions par année à partager entre plusieurs d'entre-eux. Ils sont toutefois encouragés par les possibilités qui s'offrent à eux.

PIERRE BÉLANGER: On peut avoir des partenariats qui vont faire (Univ.McGill) la distance du Canada. On pourrait avoir l'Est de Montréal avec le BC par exemple, ou encore Toronto avec je sais pas moi avec l'Université de Nova Scotia alors c'est et même plus que deux universités.

REPORTER: Le Premier ministre qui s'adressait à 200 personnalités canadiennes des secteurs privés, de l'éducation et du travail a aussi profité de l'occasion pour parler du libre-échange.

MULRONEY: En nous garantissant un meilleur accès au plus riche marché du monde, la libéralisation des échanges va multiplier les occasions de mettre au point de nouveaux produits de haute technologie.

REPORTER: La conférence qui se poursuit jusqu'à vendredi

REPORTER: On le voit bien, on est encore loin d'un
 consensus entre l'industrie et le gouvernement.

Un consensus pourtant nécessaire pour que le Canada rattrape
son retard technologique sur les autres grands pays industrialisés.
Car, pour rattraper ce retard, il faudrait que le Canada dépense
8 milliards de plus en 10 ans et là-dessus le fédéral est très
clair, il ne paiera pas la note tout seul.

Julie Mivilles-Dêchesnes à Toronto

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PROGRAM: CTV NATIONAL NEWS
EMISSION:

DATE: JANUARY 13, 1988
DATE:

NETWORK / STATION: CTV/CJOH
RESEAU / STATION:

TIME: 11:12 PM
HEURE:

GOVERNMENT TO SPEND \$1.3 BILLION ON SCIENCE

CJOH: As we told you on Monday, the federal government plans to spend \$1.3 billion over the next five years on research and development. Well, Prime Minister Mulroney made the official announcement today at a science and technology conference in Toronto. As Mark Sikstrom reports, the prospect of greater funding was welcomed by scientists and businessmen alike.

REPORTER: The telephone, the communication satellite, a paint roller and baby pablum, each one a Canadian invention, but today, Canada lags behind most industrialized countries when it comes to funding science and technology. During the 1984 campaign, Brian Mulroney promised to double government spending on R&D, but now he advocates a more restrained approach.

BRIAN
MULRONEY: It may seem appealing to some to simply commit more funds to the task, borrowed funds to the

task, but Canadians I think have learned that you can't spend what you have not earned.

REPORTER: But Mulroney didn't come to this science conference empty-handed. The government is going to spend an additional \$1.3 billion on science over the next five years; most of it going to establish new research facilities centred around universities. As well, there will be 2,500 additional science and engineering scholarships each year.

DR. STUART SMITH: It's not going to turn the country around overnight, but doubling the R&D would be very nice, but the Prime Minister can't do that by passing a law about it or by throwing money at it.

RITA DIONNE MARSOLAIS: I think this is fabulous. This is excellent because it will concentrate our efforts where the assets are.

HOWARD MCCURDY: (NDP Critic) And that really is trivial even in terms of what he wants to accomplish and what he wants to accomplish is so little. The mountain brought forth a pebble in this nonsense(?).

REPORTER: An extra \$1.3 billion really only represents about a six and a half percent rise in the

government's annual science budget, though not a dramatic increase, it's welcome new money for a chronically underfunded scientific community.

Mark Sikstrom, CTV News, Toronto.

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PROGRAM: WORLD REPORT EMISSION:	DATE: JANUARY 14, 1988 DATE:
NETWORK / STATION: RESEAU / STATION: CBC/CBO	TIME: HEURE: 6:00 AM

MULRONEY MAKES R&D ANNOUNCEMENT

CBC: Prime Minister Mulroney is getting full marks for yesterday's announcement of more money for research and development. Mulroney promises 1.3 billion dollars over the next five years. In Vancouver the vice-president for research at the University of British Columbia says the money will boost Canadian science. Dr. Peter Larkin said it's needed badly. Pamela Post reports.

REPORTER: Larkin was elated to hear Mulroney's announcement that science and research will receive an extra 250 million dollars a year in Canada. The money will pay for regional centers of excellence on university campuses around the country. The Prime Minister says the goal of the program is to ensure Canada's long term competitiveness by funding world class research. Larkin says that's something Canada has been long overdue for.

LARKIN: Over the last few years Canada has slipped back in the sort of technological Olympics. We're not doing as well as we should by comparison with other countries. We're in a

league with countries like Iceland and Brazil and Denmark and countries like this, when you know, we aspire to be one of the big five or the big seven. With this sort of investment, over the next five years, our statistics are going to look an awful lot better, and that's exactly what we should be doing.

REPORTER: The decision on where to locate the centers of excellence will be made by an independent jury of international experts. Larkin expects the competition between universities will be fierce, but he says the process is a good one in ensuring the best and the brightest receive the funding. Larkin believes an initiative like this one will go a long way to giving Canada the scientific legup it needs to compete with the top countries in the world. Pamela Post, CBC News, Vancouver.

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PROGRAM: LOCAL NEWS EMISSION:	DATE: JANUARY 14, 1988 DATE:
NETWORK / STATION: RESEAU / STATION: CBC/CBO	TIME: HEURE: 6:30 AM

FEDERAL FUNDS FOR R & D

CBC: A spokesman for the Ottawa-Carleton Research Institute is pleased with an announcement made by Prime Minister Mulroney yesterday. The government will spend 1.3 billion dollars over the next five years to fund regional Centers of Excellence on university campuses. Gerry Turcott(?) says he'll be working with the two local universities and the private sector to get some of that federal funding. David McKay has the story.

REPORTER: A portion of the 1.3 billion dollars will be spent on so-called Centers of Excellence. They'll be run out of universities. Now it's up to the two universities in Ottawa, and private sector companies like Northern Telecom, to work together in developing a proposal for federal funding. Under the criteria the proposals have to be for research projects of a world class nature. Engineers in the Ottawa-Carleton region, for instance, have been developing an expertise in telecommunications and micro-electronics. Gerry Turcott says the proposals for federal funding will likely be an outgrowth of those two areas. Turcott is president of the

(Ottawa-Carleton Research Institute. It'll be responsible for overseeing the proposal.

TURCOTT: I think that the fundamental role of the feds in this particular environment is to put the necessary resources at the... make them available to the technology community. I think it's up then to the technology community to prove their case.

REPORTER: Although there's no deadline for the proposal's submission, Turcott says the universities and private sector will be working immediately to put something together. David McKay, CBC News, Ottawa.

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PROGRAM: EMISSION:	CBO MORNING BUSINESS BRIEFS	DATE: DATE:	JANUARY 14, 1988
NETWORK / STATION: RESEAU / STATION:	CBC/CBO	TIME: HEURE:	6:40 AM

FUNDS FOR R & D

CBC: And repeating the top news story in our local news
 the federal government plans to spend an additional 1.3
billion dollars on science and technology over the next five years.
That was announced by the Prime Minister yesterday. He said the first
two projects to receive the financial support will be a series of
Centers of Excellence, to be established in universities across the
country, along with a national scholarship program. Frank Oberle, the
Minister of State for Science and Technology could provide neither the
details of how many centers would be established, nor the specific
criteria for naming an institution as a Center of Excellence. That
seems to leave open the possibility that the locations of the specific
centers may be announced during an election campaign.

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PROGRAM: EMISSION: LES MATINS DE JEAN COURNOYER	DATE: DATE: 14 JANVIER 1988
NETWORK / STATION: RESEAU / STATION: CKVL/MONTRÉAL	TIME: HEURE: 07H05

LES INVESTISSEMENTS DANS LA RECHERCHE

CKVL: Mais le milliard 300 millions pour la recherche en technologie qu'est-ce que vous en pensez-vous? C'est de l'argent un milliard 300 millions. Moi, dès que tu me parles de recherche et de technologie par un gouvernement, j'ai de la misère à me mettre ça dans la tête.

REPORTER: Par le gouvernement mais si le gouvernement (chevauchement).

CKVL: Je te dis avant de m'embarquer dans des histoires comme celles-là, avant de dire ce que je pense de ça, il faudrait que je voie qu'est-ce qu'ils vont faire avec ça. Parce qu'un nommé Lalonde Marc de son prénom qui a à un moment donné institué quelque chose de scientifique, on veut des grosses déductions d'impôt pour des programmes de recherche scientifique. Les programmes de recherche scientifique ça a été le scandale, le grand scandale du gouvernement libéral ça a été ça. Puis on en on a jamais parlé parce que ça nous dépassait, ça dépassait notre

entendement en tout cas le mien. Pourquoi? Parce que j'ai pas compris au point de départ comment c'est qu'on pouvait fourrer le gouvernement comme ça. Mais il y a des gens qui ont mis 25 000 piastres qui ont eu des déductions d'impôt de 5 millions.

REPORTER: C'est merveilleux.

CKVL: C'est des affaires de même. Il y a des gens apparemment pour la recherche scientifique l'argent elle te sortait par les oreilles du monde.

REPORTER: Puis ils faisaient pas de recherche scientifique avec ça.

CKVL: J'ai vu ça dans un journal, je vais te le montrer, remarque je sais pas quelle place là comme je t'ai dis ma sénilité est là. Je sais que je l'ai vu mais je sais pas où.

REPORTER: Mais il y a quelqu'un sûrement qui a fait de la recherche scientifique de grands canadiens et ça venait d'où?

CKVL: Tu sais ce genre de recherche là ça me fait rien moi. Il y a quelqu'un qui a un besoin à quelque part, puis là tu dis il y a une entreprise qui s'appelle j'imagine Canadian Marconi ou encore RCA Victor qui eux-autres ont un contrat de l'armée américaine ou de la NASA, ils disent vous autres

comme votre participation à notre programme à nous autres de façon à ce que vous sortiez la technologie que vous utiliser chez vous, vous allez payer vous autres pour développer le bras. Vous développez le bras effectivement parce que vous avez l'expertise pour le faire, vous aviez pas un papier pour le faire ça (inaudible) l'expertise pour le faire.

REPORTER: Oublions le bras, prenons la technologie en médecine ça c'est....

CKVL: Ils te charchent....

REPORTER: La médecine ils ont des subventions sûrement?

CKVL: Bon, bien montre-moi donc ta subvention médicale là-dedans là, toi?

REPORTER: Bien là j'ai pas eu au (inaudible)....

CKVL: Non, mais t'as dis dans quel domaine là, tu me l'as dis tout-à-l'heure?

REPORTER: et bien l'effort industriel qui payait en favorisant la recherche, mais la recherche en quoi?

CKVL: C'est ça, la recherche (inaudible)....(chevauchement). c'est ça ce que j'ai compris moi là, ça être dans les ordinateurs, t'aime ça d'abord c'était ton dada. Je le

sais que t'aime les ordinateurs pour en faire une maladie.

REPORTER: C'est-à-dire quand c'est pour le bien oui.

CKVL: Mais c'est toujours le bien.

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PROGRAM:
EMISSION: LES INFORMATIONS

DATE:
DATE: LE 14 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: RADIO CANADA/CBOF

TIME:
HEURE: 8H00

FONDS POUR LA RECHERCHE ET LE DÉVELOPPEMENT

CBOF: Le gouvernement fédéral souhaite une participation financière accrue de la part de l'industrie à la recherche dans les universités canadiennes. À l'occasion de la Conférence nationale sur la Technologie, le Premier ministre - Brian Mulroney - a annoncé l'octroi de 1,300,000,000 de dollars aux universités pour stimuler la recherche au cours des cinq prochaines années.

REPORTER: L'industrie a bien réagi aux annonces du gouvernement, mais maintenant, ces représentants ont compris que la balle est dans leur camp. Aguita Dionne Marcelet(?) de l'Association nucléaire canadienne.

MARCELET: ... Défi a été lancé à l'industrie en se demandant quel va être maintenant à vous? Quel va être votre part?

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REPORTER: Parce qu'au Canada, la part de l'industrie à la recherche scientifique est minime - 3 % des budgets de recherche universitaire seulement. Et beaucoup d'entreprises ne s'en mêlent pas du tout. Quatre compagnies seulement sont responsables d'un tiers des dépenses industrielles en recherche et développement au pays. Pour l'ancien président du Conseil des sciences, Stuart Smith, c'est un changement de mentalité qui s'impose chez les chefs d'entreprises.

SMITH: C'est quelque chose sur laquelle ils ne sont pas convaincus jusqu'au moment... Cette réunion va aider un peu à créer un changement culturel dans leurs attitudes..

REPORTER: C'est un peu pour cela qu'aujourd'hui les rôles sont renversés, que ce sont les PDG qui sont sur la sellette et le Premier ministre qui les écoute.

Chantal Hébert à Toronto.

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PROGRAM: EMISSION: PRÉSENT	DATE: DATE: LE 14 JANVIER 1988
NETWORK / STATION: RESEAU / STATION: RADIO CANADA/CBOF	TIME: HEURE: 8H10

RÉACTIONS À L'ANNONCE DES FONDS POUR LA RECHERCHE ET LE DÉVELOPPEMENT

CBOF: Ce matin, Sciences et Technologie - 1 milliard de plus d'Ottawa, mais combien de l'entreprise privée?

Notre invité, Robert H. Marchesseault(?), vice-président à la recherche chez Xerox et aussi titulaire de la chaire Xerox à McGill, que nous retrouvons à Toronto. Monsieur Marchesseault, bonjour.

MARCHESSEAULT: Bonjour Monsieur Maisonneuve.

CBOF: Monsieur Marchesseault, vous êtes dans l'entreprise privée. Vous êtes à l'université. Vous avez participé aux travaux du comité consultatif du gouvernement sur la Science et la Technologie. Vous conviendrez avec moi que 1,300,000,000 - ça veut à peu près rien dire ou tout dire pour nous. Alors qu'est-ce que ça représente véritablement?

MARCHESSEAULT: Bien on voit que c'est surtout une somme qui

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sera consacrée à augmenter la recherche dans l'université. Si on considère les conseils de recherche, ils ont un budget de l'ordre de 600 millions et 1.3 milliards plutôt sur cinq ans, ça veut dire une augmentation de l'ordre de 35 % dans leur budget.

CBOF: Mais est-ce que ça va plus loin qu'une promesse électorale ou qu'un slogan? Si on tient compte du fait qu'avant la dernière élection, on avait promis de doubler les fonds pour la recherche et puis il semble qu'il y a... rien n'a été fait.

MARCHESSEULT: Ah, mais les promesses de politiciens, on connaît ça. Ça vient petit à petit et je pense que finalement Monsieur Mulroney espérait que l'industrie allait tout faire et c'est évident que il doit faire sa part. Et je pense que c'est... c'est réaliste ce qu'il propose.

CBOF: Mais que l'industrie allait tout faire et que le gouvernement fasse sa part. Écoutez. L'industrie fait pas grand chose actuellement si on se fie aux statistiques qui ont été publiées.

MARCHESSEULT: Non. En fait, l'industrie canadienne pourrait toujours faire mieux. Mais c'est tout de même impressionnant de voir que il y a eu une augmentation considérable au cours des cinq dernières années du côté industriel. Le Canada

a une situation particulière. Ça sera jamais comme les États-Unis ou le Japon. Mais...

CBOF: Mais pourquoi ça ne sera jamais comme ça?

MARCHESSEAUULT: Bien à cause, je pense, de la structure de notre économie. L'industrie minière par exemple, c'est une industrie qui ne fait pas une grande recherche, mais tout de même qui s'occupe d'acheter des équipements qui sont en fait de la haute technologie.

CBOF: Mais... mais on semble reprocher à l'entreprise privée, ou du moins à la situation actuelle, le fait que le Canada ait dû acheter pour plus, je pense, de 7 milliards de produits de haute technologie, mais produit ailleurs?

MARCHESSEAUULT: Oui, mais par contre, on vend du blé. On vend... on vend du papier, etc., et si vous rentrez dans une usine de papier, vous voyez la machine qui produit le papier - 5,000 pieds/minute - c'est tout de même de la haute technologie ça.

CBOF: Mais actuellement, ce qu'on semble - Monsieur Marchesseault - demander aux universités, on semble leur demander de travailler au profit de l'entreprise privée.

MARCHESSEAUULT: En collaboration, hein? Il faut... il faut regarder

la situation au Japon. Le Japon a réussi parce qu'effectivement ils ont bien fait la recherche appliquée. Ils ont copié, mais ils l'ont beaucoup mieux fait que... que nous. L'automobile, c'est une chose à regarder.

CBOF: Mais est-ce que vous voulez dire qu'au Japon, ça c'est fait de concertation entre le milieu universitaire et le milieu de l'industrie?

MARCHESSEAUULT: On veut cette concertation, on veut cette collaboration et on veut peut-être faire des choses qui sont un peu routinières, mais très bien les faire.

CBOF: Mais... mais ici, qu'est-ce qu'on veut des universités? On semble vouloir demander au milieu universitaire de se spécialiser par rapport à l'indépendance traditionnelle de l'université.

MARCHESSEAUULT: Je pense que c'est une étape auquel il faut penser carrément. Je... le Canada, c'est pas le pays qui va développer des home run comme la géographie, etc., ou le laser constamment. Je pense que si on se contente de très bien faire et de très bien faire fonctionner les sociétés qu'on a, on arrivera très bien.

CBOF: Mais Monsieur Marchesseault, de façon très concrète, et c'est écrit noir sur blanc. Prenons le cas des

conseils de recherche - on veut que les conseils de recherche soient maintenant aux services de l'industrie et même de la défense.

MARCHESSEAUULT: Service - c'est pas le bon mot. Collaboration.

Par exemple, chez Xerox, on a trouvé un moyen d'assurer notre recherche long terme en ayant une bonne recherche in-house et pouvant donc dialoguer avec les universitaires, faisant des projets conjoints et nous autres, on leur assure une certaine partie du projet. Eux assurent une autre partie et ensemble, on est trois ou quatre fois plus forts qu'on le serait normalement.

CBOF: Mais à ce 1,300,000,000 de dollars en cinq ans, est-ce qu'on peut s'attendre à ce qu'il y ait 1,300,000,000 qui viennent de l'entreprise privée par un changement de mentalité?

MARCHESSEAUULT: Sûrement. Sûrement et je pense que c'est carrément ce qui se produit déjà.

CBOF: Est-ce que vous pensez que ce sera suffisant pour répondre aux besoins?

MARCHESSEAUULT: Oui, oui. Bien ça sera jamais suffisant. Je pense que c'est une étape à franchir et il faut aller de l'avant constamment.

CBOF: Et bien Robert H. Marchesseault, de Xerox et

de l'Université McGill à Montréal, merci beaucoup pour cette
entrevue de Toronto.

MARCHESSEAU: C'est bien Monsieur Maisonneuve. Au revoir!

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PROGRAM:
EMISSION: ONTARIO TRENTÉ

DATE:
DATE: LE 14 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: RADIO CANADA/CBOF

TIME:
HEURE: 9H15

CONFÉRENCE SUR LES TECHNOLOGIES ET INNOVATIONS

CBOF: Début hier, à Toronto, de la Conférence nationale sur la Technologie et l'Innovation. La conférence réunit industriels, gens d'affaires et universitaires pour élaborer une stratégie nationale de développement technologique. La conférence, c'est en fait le résultat d'une promesse de Brian Mulroney, fait en 1986. Mais même en retard, ce dernier n'a pas manqué l'occasion de faire des annonces - une grosse annonce, en fait. 1,300,000,000 de dollars répartis sur cinq ans, consacrés à l'innovation technologique dans des centres d'excellence. S'agit-il là d'une pâle copie de ce qui se fait déjà en Ontario? Geneviève Rossier(?) pose la question au Docteur Stuart Smith, ancien président du Conseil des sciences du Canada. Le Docteur Smith est aujourd'hui président d'une compagnie d'experts conseils en haute technologie.

REPORTER: J'aimerais commencer, Monsieur Smith, par vous demander quelles sont vos réactions à ce qui a été

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annoncé aujourd'hui de la part du Premier ministre Mulroney?

SMITH: Je suis en faveur des initiatives qu'il a annoncé.
Je pense que le Premier ministre, d'un côté, il commence à prendre sérieusement la question de technologie et de sciences en général, la recherche et le développement et c'est très bon de voir que nous avons un Premier ministre qui, au moins, s'intéresse dans le sujet. Naturellement, on va pas faire une très grande différence dans l'avenir du Canada simplement avec les subventions qu'il a mentionné aujourd'hui, mais c'est un bon départ, c'est dans la bonne direction. Et ça va donner un signal aux Canadiens en général que c'est un sujet qu'on doit prendre sérieusement.

REPORTER: Est-ce que ça vient trop tard? Est-ce que on aurait pas pu s'attendre à voir cette initiative depuis déjà un bon bout de temps?

SMITH: On a actuellement... nous sommes très tard dans notre activité dans la concurrence internationale, par exemple il y a des autres pays qui sont déjà très loin en avance de nous. Mais il faut commencer... au moins c'est mieux de commencer un peu tard que de ne pas commencer du tout.

REPORTER: J'aimerais savoir au niveau du contenu plus qu'au niveau de la somme d'argent qui a été allouée, on parle de centre d'excellence et de bourses. C'est pas en soi des

choses très nouvelles. On sait qu'en Ontario par exemple on a déjà des centres d'excellence, est-ce que ce n'est pas un dédoublement de choses qui existent déjà?

SMITH: Oui c'est une copie de ce qui existe en Ontario.

Mais si il y a quelque chose de bon qu'on peut redoubler pourquoi ne pas faire ça. Il y a assez d'espace pour accomoder une autre initiative, même que c'est quelque chose... une copie, on peut dire de ce qui existe en Ontario. Mais j'ai été bien impressionné avec les résultats en Ontario. Ce que je voyais là c'était que les industries et les universités ont trouvé des choses communes, des intérêts communs et des projets qui... bien placés pour créer des résultats applicables. Et c'est très important dans la recherche d'avoir des choses qu'on peut appliquer parce qu'il faut payer pour ça et il faut avoir des bénéfices. Si c'est rentable c'est beaucoup mieux naturellement. Et, tout le monde a dit que si seulement un problème comme ça existait en Ontario, les autres provinces vont...perdraient quelque chose, peut-être leurs scientifiques et aussi les opportunités. Et c'était nécessaire, il fallait faire quelque chose de niveau fédéral, et je pense que même si c'est une copie de l'Ontario c'est quelque chose bon pour le Canada. Les subventions pour les étudiants c'est pas exactement(?) révolutionnaire.

REPORTER: Quand vous dites l'Ontario avait déjà fait, vous semblez dire que l'Ontario est à l'avant-garde. Est-ce que l'Ontario est à l'avant-garde par rapport aux autres provinces et par rapport au monde, quelle est la situation?

SMITH: L'Ontario est le seul endroit au Canada où on peut dire que nous sommes presque dans la concurrence internationale dans le royaume de technologie. Le Canada en général n'est pas un très grand leader dans ce domaine, mais ce que nous avons c'est presque tout en Ontario.

Il y a des autres initiatives en Colombie-Britannique (inaudible), naturellement on a la province de Québec, on voit maintenant beaucoup d'activités dans les petites et moyennes entreprises, bien liées aux technologies modernes, et peut-être dans un dixaine d'années on va dire que c'est le Québec qui est en avance. Mais pour le moment c'est l'Ontario qui est complètement en avance parce que c'était ici en Ontario où les usines étaient... la fabrication était... nous n'étions en Ontario si dépendant sur les produits bruts que les autres provinces.

REPORTER: Qu'est-ce que vous souhaitez voir, en terminant, qu'est-ce que vous souhaitez voir dans l'avenir comme type de politiques de technologie scientifique en Ontario pour que les choses progressent?

SMITH: La question est d'utiliser le gouvernement et les fonds publics pour stimuler des activités dans le secteur privé. On fait maintenant presque tout ce qu'on peut faire avec les fonds publics dans les laboratoires gouvernementales (sic) ou peut-être dans les universités. On peut naturellement augmenter les subventions de plus, mais ce n'est pas... ça ne va pas faire une grande différence. C'est dans le secteur privé où

il faut avoir des changements d'attitudes et changements de culture. Les exécutifs qui dirigent les entreprises au Canada, même en Ontario sont en général du monde de finances, du monde des lois, ils sont des avocats, ils sont des comptants(?) et il faut avoir des ingénieurs là. Il faut avoir des exécutifs qui comprennent bien les technologies sur lesquelles leur compagnie est basée. Et pour ça, je pense qu'on peut avoir des programmes gouvernementales(sic) qui vont donner les subventions aux regroupements des industries pour faire des recherches en commune, pour le long terme; les technologies stratégiques pour tel ou tel secteur de notre économie, et ça va créer pas seulement des recherches en commune mais aussi un changement d'attitude presque un changement culturel.

REPORTER: Je vous remercie infiniment.

SMITH: Merci, ça a été un plaisir.

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PROGRAM: EMISSION:	PRÉSENT	DATE: 14 JANVIER 1988 DATE:
NETWORK / STATION: RESEAU / STATION:	RADIO-CANADA / CBOF	TIME: 12H23 HEURE:

RÉACTIONS D'UNE MANNE FÉDÉRALE

CBOF: Création de centres d'excellence dans les universités
 du pays, programme de bourses: le premier ministre
Mulroney a fait état hier à Toronto des intentions de son gouvernement
en matière de recherche scientifique. Le gouvernement dépense
présentement 4\$ milliards pour la science et la technologie et
2,5\$ milliards pour la recherche et le développement. Il avait
promis en 1984 de doubler le pourcentage du produit national brut
consacré à la recherche et au développement.

Léo Calinda va chercher la réaction du recteur de l'université
de Montréal, Monsieur Gilles Cloutier.

CLOUTIER: Le premier ministre a indiqué qu'il allait servir
 à mettre de l'avant des centres d'excellence. Si
vous voulez parler de centres d'excellence, je... pour moi ça évoque
un peu le concept qui a été mis de l'avant et qui a été... qui
est en train d'être mis sur pied en Ontario. Ce concept-là, je
crois, est probablement celui que le gouvernement a l'esprit quelque
chose du genre, peut-être pas nécessairement le même... exactement
le même concept. Mais ces centres d'excellence-là sont créés dans
le but de rassembler autant que possible dans un milieu mais pas

nécessairement, mais rassembler des chercheurs autour de thèmes de recherche qui intéressent l'industrie et qui également a pour but de regrouper un bon nombre de chercheurs universitaires dans un domaine donné.

REPORTER: Jusque là les industriels canadiens ont plutôt déçu?

CLOUTIER: Ah! écoutez, je pense que c'est un peu l'objectif. Je pense que c'est un peu et beaucoup l'objectif de ce programme-là, du moins c'est ce que... c'est comme ça que je le vois, où les industries, le monde des affaires sera appelé à jouer un rôle actif au niveau de ces centres d'excellence. Je pense que ce sera à mon avis, et je crois que ça devrait être, une condition sine qua non de la mise sur pied de centres d'excellence, de ces centres d'excellence dans les universités. Le deuxième point, je pense qu'il est également important, qui devrait à mon avis être un critère de décision, c'est celui de regroupement de chercheurs autour d'un thème, non seulement de chercheurs universitaires, non seulement d'une seule université, mais de plusieurs universités, principalement des universités qui se retrouvent dans un même centre géographique. Et ça je crois que c'est un pas en avant important vis-à-vis le développement de la recherche universitaire et je crois qu'il devrait être d'intérêt non seulement au niveau du gouvernement du Canada mais au niveau du gouvernement du Québec en autant que les universités québécoises sont concernées.

REPORTER: Justement, vous Gilles Cloutier, vous avez travaillé dans le secteur privé. Vous dirigez maintenant un institut de recherche et d'enseignement à l'université de Montréal. Vous avez l'impression que c'est vraiment la panacée, rapprocher l'industrie et l'université.

CLOUTIER: Bien écoutez, je pense que il y a plus qu'une solution. C'est un système très complexe. C'est pas un avantage que je vois au centre d'excellence principalement, c'est de sensibiliser les entreprises à la recherche universitaire, non seulement aux sujets de recherche qui sont poursuivis dans les universités mais également au climat de travail dans lequel la recherche universitaire se fait.

REPORTER: Mais les entreprises canadiennes ne semblent pas sensibles à cette nécessité.

CLOUTIER: Ah! mais non je ne suis pas d'accord du tout avec ça; ils sont très très sensibles. Ce qui arrive trop souvent c'est que les industries canadiennes et principalement les petites et moyennes entreprises n'ont souvent pas les moyens de participer ou de s'intéresser à de la recherche à plus long terme comme celle qu'on retrouve dans les universités. Les grandes entreprises eux, ont les moyens étant donné la taille qu'ils ont, étant donné leurs possibilités d'investir sur des choses à plus long terme, ont des moyens de s'approcher, de s'intéresser à la recherche universitaire. Du côté des grandes entreprises ça fonctionne déjà assez bien. Mais du côté des petites et moyennes entreprises,

je pense qu'il y a beaucoup à faire et je pense qu'un programme comme ça, du gouvernement, qui inciterait les entreprises à se rapprocher et à avoir... et à participer au niveau de l'orientation de certains programmes de recherche, je pense, aurait beaucoup d'intérêts pour l'entreprise privée.

REPORTER: Mais concrètement, dans quels domaines? Où notre pays... dans quel domaine notre pays est-il le plus performant?

CLOUTIER: Je peux vous dire par exemple à l'université de Montréal il y a certainement des secteurs, je pense au secteur de la santé où l'université a des forces sur le plan de la recherche. C'est un secteur qui est particulièrement très relié sur bien des plans avec l'industrie pharmaceutique. L'industrie pharmaceutique se propose de faire des investissements beaucoup plus importants au Canada au niveau de la recherche. Je pense que c'est une occasion extraordinaire peut-être qui s'offre entre autre à une université comme l'université de Montréal pour examiner la possibilité de prendre...de développer... de la recherche de se développer encore plus du côté de la recherche et de le faire plus étroitement avec l'industrie.

REPORTER: Gilles Cloutier, je vous remercie.

CLOUTIER: Je vous remercie.

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PROGRAM:
EMISSION: LOCAL NEWS

DATE: JANUARY 14, 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: CBM (MONTREAL)

TIME: 4:30 PM
HEURE:

SCIENCE AND TECHNOLOGY MONEY.

CBM: University researchers in Montreal are determined Quebec should get its share of the federal government's promised increase in scientific research funding. Prime Minister Mulroney says Ottawa will spend an additional \$1.3 million on science and technology over the next five years. Fiona Downey reports the priorities in Montreal's universities is to set up centres specializing in engineering studies.

REPORTER: Concordia and McGill and Ecole Polytechnique currently spend about \$135 million a year on research. The common link between the three institutions is a strong core of engineering studies. The head of research at Concordia, Dr. Cooper-Langford feels Quebec's best chance for getting federal funds for R&D would be to focus on the areas in which the province has already developed a certain expertise.

COOPER-LANGFORD: Aeronautical industry and aerospace related matters, there are aspects of the transportation industries which have always been very important here in Quebec...

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1988 JAN 14

REPORTER: Langford says Concordia's administrators will focus on setting up a network of researchers from the province's universities, industries and government labs. Research Director of the Université de Montréal's Polytechnique, say their strength lies in materials and computer engineers, obvious assets to such a co-operative research centre. More than half of McGill's \$90 million research budget goes to the field of medicine, but engineering follows closely behind. University administrators all agree that Canada desperately needs to catch up to other industrial nations by stimulating co-operative research projects. Fiona Downey, CBC News, Montreal.

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PROGRAM: EMISSION:	THE WORLD TODAY	DATE: JANUARY 14, 1988 DATE:
NETWORK / STATION: RESEAU / STATION:	CFRB RADIO (TORONTO)	TIME: 5:14 PM HEURE:

SCIENCE CONFERENCE

CFRB: The Science and Technology Conference continues in Toronto and tomorrow the two hundred research delegates will report to the Prime Minister with recommendations on spending of research dollars and on Canada's technological position. The Prime Minister unveiled a five year science and technology initiative yesterday which included a one point three billion dollar commitment. Joining John Stall(?) to discuss the program in general on science and technology in particular is Dr. Larkin Kerwin, president of the National Research Institute.

REPORTER: Dr. Kerwin, just about every technology executive or authority that I've been able to find since yesterday seems to think the merits of the program depend on how and where that money is spent and as one who is going to partly decide where and how that money goes, I'd like your opinion on the challenges you face in deciding where it goes and how we decide where it does the most good.

KERWIN: Well, you're right in pinpointing the problem we have if there is one. The money must be well spent. The people, to be supported must be excellent and the projects that they are involved in must be basic and generic and with a lot of potential for economic (inaudible). However, you may be giving me more credit than is due because it's not at all indicated that I shall be any part of the selection process. However, the National Research Council will very definitely be one of the principle service sources for the new centres of excellence when they are created.

REPORTER: What are those centres of excellence? Can you describe and explain what they are and what they'll do?

KERWIN: Well, a centre of excellence is a place where you have one or two genial people who are completely abreast of the latest trends in a given area and who are inventive enough and innovative enough to be able to achieve a new exotic directions for the work to take and novel applications of its...in industry. All it takes for a centre of excellence is one or two such people. Naturally they will have to build up a team of other people around them and you might find twenty or thirty people in a centre of excellence but the main thing is to find the one or two key people that matter.

REPORTER: I don't know how you prefer to discuss science and technology and how it gets applied and how we realize the benefits. It just seems like such a large and nebulous field

that we have a hard time as either consumers or citizens trying to establish what it is we, as a country, need to do to remain competitive in terms of concrete things. I mean, is it a better telephone, is it a better car, is it a better computer, what is it?

KERWIN: It is a better and cheaper version of whatever the market is calling for at the moment and you are perfectly right in saying that Canadians are not sufficiently conscience of these problems. Science and technology has all of a sudden become the thing to talk about. If you just go back five or ten years, it was not so and our culture and our mind set as a nation have not yet been attuned to the technological revolution that is characteristic of the rest of the world and that is rapidly ticking away all of our markets.

REPORTER: To what degree is the rest of the world...is it characteristic to the rest of the world? How surprised would we be?

KERWIN: Well, our big economic competitors are, of course, the big seven, the Frances and Germanies and Japans and United States of this world but countries that we used to be...to consider as developing have now, in many cases, bypassed us as exporters of technology and I'm thinking of Korea and Singapore and Taiwan and even such countries that are still considered as Third World are now taking markets away from us in natural resources such as Brazil. And therefore, by almost anyway you care to measure it, Canada comes in pretty well dead last among the industrialized

countries of the world and not always first among the Third World countries.

REPORTER: That's shocking.

KERWIN: It is very shocking and in his speech yesterday the Prime Minister said so in so many words. He described the situation is undurable and said that the national policy now must be to make up for the lost time.

REPORTER: How did we allow ourselves to get into that position?

KERWIN: Because we have been a security minded country and we have relied on our natural resources to pay the bills. When they weren't quite good enough to pay the bills, we borrowed money. Now, we borrow thirty billion dollars a year and have run up a tremendous national deficit. Now, the natural resources are no longer the solution to our prosperity because in the world there is a surplus at the moment of almost every commodity including food, so that the competitors for our wood and our minerals and our wheat are springing up all over the place and we're no longer able to keep pace. To give you one little example, one of our largest industries is that of forest products. It is still very important to us. Canada cuts down more trees than any country in the world and we import chainsaws and axes.

REPORTER: What is it going to take to turn that around and is the amount of money announced by the Prime Minister

symbolic rather than...

KERWIN: It is going to take fifteen or twenty years to turn it around, fifteen or twenty years of belt tightening on the one hand and increasing confidence in science, technology and the marketing thereof on the other hand. The Prime Minister's speech yesterday was very important in the sense that it was a major step in making the Canadian nation sensitive to the problem and to the need for action. I think this was the first time that a Prime Minister of Canada devoted a public speech exclusively to science and technology and its economic impacts.

REPORTER: Where does that action have to come from now?

KERWIN: It has to come from the nation as a whole. If you had to single out one component I would say it was Canadian industry has to become extremely demanding and extremely aggressive in promoting science and technology in their production but everyone has to play a role, the universities, the colleges, the government laboratories, the industrial and commercial associations, it has to become a national crisis, in a sense, with a national sweep of awareness that this has become our number one problem for survival.

REPORTER: Money, however, is at the heart of it and that's always hard to spend when an immediate value or benefit cannot be realized.

KERWIN: That is true and we are still far from spending as much as our competitors. The one point three billion announced by the Prime Minister yesterday is extremely welcome and represents a beginning, I trust, of an increased investment. But it...even with the one point three billion we are still far behind the two and a half to three per cent of gross national product that our industrial competitors spend on their economy.

REPORTER: Very good to talk with you, Dr. Kerwin. I think we've learned something.

KERWIN: Well, thank you very much, Mr. Stall.

REPORTER: Dr. Larkin Kerwin, president of the National Research Institute.

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PROGRAM:
EMISSION: LE QUOTIDIEN

DATE:
DATE: 14 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: TÉLÉMÉDIA/CKCH

TIME:
HEURE: 17H45

CONFÉRENCE SUR LA RECHERCHE À TORONTO

CKCH: Par ailleurs le Premier ministre Brian Mulroney s'est dit encouragé aujourd'hui des résultats du faisant état d'une remontée des Conservateurs à 30%. Un seul point les sépare maintenant du NPD tandis que les Libéraux conservent la première place dans les intentions de vote avec 36% des appuis. Et monsieur Mulroney on le sait est à Toronto où il préside la Conférence nationale sur la technologie et l'innovation. Si le Premier ministre a invité aujourd'hui les milieux d'affaires à emboîter le pas au fédéral et à accroître leurs investissements en recherche. Il ne semble pas acquis que la réponse sera enthousiaste. Catherine Aubert a rencontré des participants à la Conférence.

REPORTER: Michelline Bouchard est vice-présidence de CGI, cette société québécoise de 12 ans, emploi 700 personnes et oeuvre principalement au Québec et en Ontario. Son secteur d'activités: la planification, le développement et l'implantation des systèmes informatiques en milieu de travail.

Madame Bouchard est venue à la Conférence pour y chercher le pouls de l'économie à travers ses dirigeants.

MICHELINE BOUCHARD:
(vice-pré. CGI) Maintenant on a vraiment le pouls, est-ce qu'il y un consensus, est-ce qu'il y a disparité, est-ce qu'il y a une confiance sociale?

REPORTER: C'est sur ce dernier sujet que la vice-présidente de CGI voit une modification de la philosophie des entreprises qui valorisent maintenant de plus en plus leur personnel. Pour ce qui est du voeux le plus cher de Brian Mulroney que les entreprises subventionnent davantage la recherche et le développement, Michelline Bouchard est sceptique.

BOUCHARD: J'ai pas l'impression que il y aura des in put majeurs d'investissements dans ce secteur là.

Pour Télémédia Catherine Aubert à Toronto

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PROGRAM: EMISSION: CE SOIR	DATE: DATE: 14 JANVIER 1988
NETWORK / STATION: RESEAU / STATION: RADIO CANADA/CBOFT	TIME: HEURE: 18H00

CONFÉRENCE SUR LES SCIENCES ET LA TECHNOLOGIE

CBOFT: Le doyen de la Faculté des sciences de l'Université d'Ottawa qualifie de demi-mesure, l'annonce de l'injection de 1,3 milliard de dollars pour la science et la technologie. Une annonce qui a été faite hier, par le Premier ministre Brian Mulroney. Comme l'explique notre chroniqueur scientifique Michel Rochon, ce montant sera insuffisant pour reprendre le temps perdu dans les domaines de pointe en recherche scientifique.

REPORTER: Curieusement l'annonce Mulroney arrive après trois années de coupures et de sévères restrictions dans le monde de la recherche scientifique et technologique. Le chiffre de 1 milliard 300 millions peut sembler imposant, mais en fait il en faudrait plus de 8 milliards pour se remettre dans la course. Ici à l'Université d'Ottawa, on accueille avec enthousiasme l'annonce, même si sans avoir trop de détails l'on sait que les université sont les principales bénéficiaires de cette manne conservatrice.

DR BERNARD En termes de chiffres absolus non, moi j'estime
PHILOGÈNE:
(Univ.Ottawa que ce n'est pas suffisant, je prends ça comme
Fac.sciences) une autre demi-mesure gouvernementale pour faire
ce qu'on a toujours promis de faire mais qu'on a jamais vraiment
eu je dirais le courage de faire.

REPORTER: 2 500 bourses de 2 000 dollars seront allouées
 aux étudiants durant les 5 années que seront
distribués les fonds. Pour monsieur Philogène ces bourses sont²
insuffisantes. Le fédéral mise également sur la création de
centres d'excellence des universités et l'industrie pourraient
travailler main dans la main.

DR PHILOGÈNE: Il est évident que il faut rapprocher cette
 distribution de fonds à la notion des centres
d'excellence, il y a des domaines qu'il faudrait privilégier
et bien sûr malheureusement d'autres domaines qui vont en pâtir.

REPORTER: L'université possède déjà un centre d'excellence
provincial en électronique. Elle espère cette fois-ci, que le
fédéral prendra en considération le travail de son institut de
cardiologie pour en faire un centre d'excellence fédéral. Mais,
pour le moment, Ottawa n'a pas encore déterminé où ira son milliard.

Ici Michel Rochon à Ottawa

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EMISSION: LES INFORMATIONS

DATE:
DATE: LE 15 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: RADIO CANADA/CBOF

TIME:
HEURE: 7H00

CAMPAGNE D'INFORMATION SUR LES SCIENCES ET TECHNOLOGIES

CBOF: Ottawa lance une campagne publicitaire de 10 millions de dollars sur la science et la technologie. C'est la plus récente annonce du gouvernement Mulroney dans le cadre de la Conférence nationale sur la technologie et l'innovation, qui se déroule actuellement à Toronto.

REPORTER: Une autre annonce gouvernementale à grand renfort de millions, telle que prévue, la Conférence nationale sur les technologies et l'innovation sert de rampe de lancement aux promesses pré-électorales du gouvernement. Depuis le début des discussions, le gratin industriel et scientifique du pays a consommé près de trois tonnes de papier et Ottawa a promis près de 1 milliard et demi de dollars. Le Premier ministre Mulroney multiplie les apparitions. Hier, il a même payé de sa personne pour participer à l'annonce de l'expansion de l'usine Hyundai à Alliston en Ontario - un projet privé de 80 millions de dollars, rendu public par voie de communiqué gouvernemental parce qu'Ottawa

...2

POUR USAGE INTERNE SEULEMENT.

accorde beaucoup d'importance au premier investissement de l'industrie automobile japonaise depuis la signature de l'entente de libre échange avec les États-Unis.

MULRONEY: Pour nous, c'est un symbole très important. Ça crée des emplois et c'est un signal clair pour l'avenir.

REPORTER: Un signal clair aussi des préoccupations du gouvernement Mulroney, parce que même si le Premier ministre écarte à peu près complètement l'hypothèse d'élections au printemps, son programme d'activités a tout d'une campagne électorale sauf le nom.

Chantal Hébert à Toronto.

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PROGRAM: MORNINGSIDE
EMISSION:

DATE: JANUARY 15, 1988
DATE:

NETWORK / STATION: CBC/CBO
RESEAU / STATION:

TIME: 9:05 AM
HEURE:

R & D ANNOUNCEMENT

CBC: The Prime Minister has announced one point three billion dollars for science. I'm...what...Chris, what's this?

CHRISTOPHER WADDELL: Well, what it is, Peter, is I think probably the first clear signals of the coming election campaign more than anything else. It's one point three billion dollars but when it was...when it was announced we had great difficulty trying to get either the Minister of State for Science, Frank Oberle, or the new Minister of Science, Robert de Cotret, to indicate exactly how the money was going to be spent, where it was going to be spent and over what period of time other than five years. Close observers will note that there needs to be an election before that five years expires and I think some of the things they announced including centres of excellence which are going to be supposedly universities that are given money to specialize in certain types of research, I think we may find that announcement about centres of excellence may just surface during an election campaign that may happen later

this year. This is the one...that if you look back on '84 and the things that the Conservatives said they wanted to do when they came into power, surprisingly they've accomplished a lot of them but research and development is the one big area where they really have had very little in the way of achievement or accomplishments.

DEBRA MCGREGOR:And they've been very sensitive...sorry, Mike, they've been very sensitive of...the Conservatives have been very aware of this. In fact, the politics of R & D, I think, are very fascinating. If you go back to that, thrown speech in the fall of '86 when Mulroney devoted entire paragraphs to how important he thought R & D was, short weeks after that suddenly other arms of the government were doing crazy things like cutting back the funds to the National Research Council, Revenue Canada had R & D guidelines that were basically seizing up most of the research, that was the industrial research, that was going on in the country. This was in reaction the to the SRTC fiasco, the government had seized up too much so that the whole high tech thing kind of blew up in the Tories' faces just after they had said how committed the Prime Minister was going to be to it. So, out let Dalton Camp and the Charlie McMillan, the Japanese and R & D expert who is senior policy advisor to the Prime Minister's office at that time and they carefully went around holding hands and asking people in the high tech community, what do you want, what do we have to do to please you? And this announcement this week is actually the culmination of a whole year and a half's worth of effort in this regard and Mulroney, as you recall, the Tories, when they came to power, said they were going to double R & D spending to

about two and a half percentage...two and a half per cent of GNP. They've come nowhere near it and this is, you know, one small step along the way but the politics of it have been horrendous.

MIKE DUFFY: One thing that the government has tried to do and that is to insist that whatever money they give in terms of for...for scientific research be matched by private enterprise. Well, all of the stories we've read in all of the papers and seen on television and heard on the radio detail over and over and over again the failure of Canadian business to see the need for R & D and to adequately plan for R & D. And therefore, what the experience of this policy has been is that while the federal government was prepared to put up matching funds they were not able to get business to see that it was in their interest to put up their fifty cents of those research dollars. And so again, market driven but in an environment or a market environment in which there isn't the culture there in terms of research to turn that around and I think this is part of what this weekend in Toronto is trying to do is to try and encourage Canadian business people to realize that they've got to invest in R & D if they're going to remain competitive.

WADDELL: Well, and I think the other thing that's interesting from watching the conference and from watching what the Prime Minister's been doing in the last few days and that's again, I don't want...I don't think an election is imminent but I think we're heading towards one perhaps in the fall. The Prime Minister came back...he was away last week in California, on his

way back he stopped in to see Grant Devine in Saskatchewan. He requested the meeting with Grant Devine leaving the Saskatchewan government sort of scratching their heads wondering what was going to happen. He...he came out afterwards and talked about free trade and in Toronto he was at the conference. A lot of the people from the PMO were around the conference watching, talking to people, getting a sense of the business community who's...who...who...one of the constituencies the Tories need if they want to get re-elected and then yesterday he spent most of the day, he was at the conference in the morning, met the Financial Post editorial board at lunch time and then had the afternoon off. And I suspect that both in Saskatchewan and in Toronto he's talking to a lot of Tories finding out what they think is going to happen and what the prospects are for an election.

DUFFY: What the agenda says are private meetings are, in fact, private political meetings.

WADDELL: That's right. That's right.

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PROGRAM: EMISSION:	TRANSIT	DATE: DATE:	15 JANVIER 1988
NETWORK / STATION: RESEAU / STATION:	RADIO CANADA/CBOF	TIME: HEURE:	16H55

LA CONFÉRENCE SUR LA TECHNOLOGIE ET L'INNOVATION

CBOF: Alors la Conférence nationale sur la technologie et l'innovation qui a commencé mercredi à Toronto a pris fin ce matin. Michel Vastel est toujours à Toronto.
Bonjour Michel.

MICHEL VASTEL:
(journaliste) Bonjour France.

CBOF: Le Premier ministre japonais a déjà...je pense la rencontre est faite entre lui est monsieur Mulroney?

VASTEL: C'est ça en fait elle n'est même pas terminée. Monsieur Mulroney est au King Eward à l'hôtel et monsieur Takashita est actuellement avec lui. Le Premier ministre du Japon comme vous le savez déjà est arrivé vers midi et demi et donc, il va y avoir une série de rencontres, il y a un grand diner ce soir avec à peu près 800 invités ici au Harbor avec

notamment aussi le premier ministre de l'Ontario bien sûr.

CBOF: Une rencontre pour tenter de réduire les barrières
tarifaires entre le Canada et le Japon?

VASTEL: Oui bien réduire surtout...surtout augmenter
le commerce et éviter toutes sortes de protections
indirectes pas tellement tarifaires mais indirectes que les
Japonais imposent, par exemple dans le domaine des aliments ils
ont des normes beaucoup plus strictes, par exemple ce qui rend
assez difficile notamment pour les produits de la pêche canadienne
de pénétrer au Japon. Mais il y a surtout je pense la question
la plus importante France, du côté canadien c'est toute cette
histoire de vente de charbon au Japon. Les Japonais ont investi
dans une grande mine en Colombie-Britannique, le projet Katet(?)
et ils avaient négocié des prix au moment où les prix du pétrole
étaient très élevés, au moment de la crise énergétique, maintenant,
évidemment ils trouvent que ce charbon leur coûte trop cher ils
voudraient se retirer du projet. Et, du côté canadien bien ce qu'on
veut évidemment c'est attirer des investissements japonais un peu
comme monsieur Mulroney l'a souligné hier avec Honda, d'attirer
si vous voulez d'autres usines d'assemblage d'automobiles ou
d'autres projets comme ça.

CBOF: Michel, il faut dire que monsieur Takishita sera
de retour au Canada à Toronto en juin prochain
pour le Sommet des grandes puissances occidentales.

VASTEL: C'est ça d'ailleurs ce que les deux ont souligné.
Évidemment, monsieur Takishita a souligné que le Canada allait jouer un rôle important sur la scène internationale à cause de cette réunion de Toronto.

CBOF: Revenons un petit peu à la Conférence nationale sur la technologie et l'innovation qui a pris fin fonc, ce matin. On a parlé entre autres choses de projets de station orbitale?

VASTEL: Oui, bien ce qu'on a surtout parlé en fait c'est d'augmenter...si vous voulez que le secteur privé investissent davantage dans la recherche et le développement mais je dois dire que ça c'est terminé un peu sur une note un peu sceptique en ce sens que le secteur privé a beaucoup critiqué le projet de réforme...non seulement le projet la réforme fiscale de monsieur Michael Wilson. Vous savez qu'on a réduit les avantages offerts aux investissements en recherche et développement on a supprimé des crédits d'impôt et ça a mis les gens assez de mauvaise humeur finalement. On a eu l'impression que le gouvernement et les gens du secteur privé se renvoyaient un peu la balle ce matin.

CBOF: Mais quand même je reviens sur cette station orbitale, monsieur de Cotret a dit que le coût de la participation canadienne à ce projet serait supérieure à un milliard de dollars?

VASTEL: Oui c'est ça mais c'est pas....excusez mais c'est pas vraiment nouveau c'est pour ça que j'avais pas relevé ça. C'est qu'en fait au départ le gouvernement du Canada avait dit que ça coûterait 800 millions, mais on savait déjà depuis plusieurs semaines que c'était très insuffisant c'était une première estimation et que c'est effectivement...certainement plus d'un milliard que ça va coûter. Il faut dire aussi que c'est un projet avantageux parce que ça permet de développer toutes sortes de technologies dont on se sert après ailleurs finalement. Alors, ce n'est peut-être pas une dépense inutile.

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PROGRAM: NEWS EMISSION:	DATE: JANUARY 15, 1988 DATE:
NETWORK / STATION: RESEAU / STATION: CKGM (MONTREAL)	TIME: HEURE: 5:00 PM

TAX CREDITS ON S & T INVESTMENTS

CKGM: A conference on science and technology has ended with a call for a new research tax credit to replace the one scrapped by the Conservative government.

REPORTER: The scientific research tax credit was criticized by the Tories for being wasteful, but the message at the conference was, something should replace it. David Heniger(?), director of Burns Fry(?) Financial House was a conference leader who prodded Mulroney.

HENIGER: While the SRTC program may have been poorly designed, leaving it open to abuse, we believe that the concept was sound and warrants reconsideration.

REPORTER: Mulroney did not directly answer that call as he made his closing remarks, but he did suggest taxation might be looked at as part of the Tory government plan. The conference

as a whole endorsed Conservative measures to encourage a climate in Canada to enhance technological achievements. Roger Ward, Toronto.

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PROGRAM: EMISSION:	THE WORLD TODAY	DATE: JANUARY 15, 1988 DATE:
NETWORK / STATION: RESEAU / STATION:	CJAD (MONTREAL)	TIME: HEURE: 5:04 PM

REGIONAL CONFERENCES ON SCIENCE AND TECH

CJAD: Prime Minister Mulroney has announced plans for five regional conferences on science and technology, including one to be held in Quebec. They will be follow-up conferences to the national one that has just wound up in Toronto.

REPORTER: The conferences will be held in B.C., the Prairies, Ontario, Quebec, and Atlantic Canada. Mulroney says it's part of the government's commitment to creating a culture of science and technology across the country.

MULRONEY: We want the young people of this country walking around with that securely imprinted in their minds. Not only should we teach them science and technology, we should teach them to use it better.

REPORTER: Mulroney says the industry needs to provide more role models for young people, especially women, because at present only one in ten science and engineering students is female. Mark Kootz(?) in Toronto.

AGREEMENT.

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PROGRAM: NEWSHOUR
EMISSION:

DATE: JANUARY 15, 1988
DATE:

NETWORK / STATION: CKO-FM
RESEAU / STATION:

TIME: 5:30 PM
HEURE:

CONFERENCE COMES TO CLOSE.

CKO: Before he started making final preparations for his meeting with the Japanese Prime Minister today, Brian Mulroney said government alone cannot bear responsibility for meeting the technological challenges of the future. The Prime Minister made the comment at the conclusion of a three-day conference on technology and innovation in Toronto. He defended an earlier commitment to double spending on research and development, something critics charge the government has fallen short of.

BRIAN MULRONEY; People talk about a comment that I made about doubling the commitment to research and development, that's doubling the national commitment, not just government involvement. Creating a climate wherein all participants in the sector move up with their commitments...

CKO: In addition to a \$1.3 billion for university research and \$10 million for a public awareness campaign, Mulroney says his government will be promoting research and development through five regional meetings similar to this week's gathering in Toronto.

CONFERENCE SETTLEMENT.

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EMISSION: LES INFORMATIONS

DATE: JANVIER 15 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: RC/CBOF

TIME: 17H35
HEURE:

CONFÉRENCE SUR LA TECHNOLOGIE ET L'INNOVATION

CBOF: La conférence nationale sur la technologie et l'innovation est terminée. Le premier ministre Brian Mulroney l'a clôturé ce matin à Toronto en donnant un aperçu des projets de son gouvernement pour donner suite à l'événement.

REPORTER: La conférence nationale sur la technologie et l'innovation est terminée, mais les Canadiens n'ont pas fini d'entendre parler du sujet. Parce que la grande conclusion des discussions, c'est qu'il faut donner le goût du risque scientifique aux Canadiens, une conclusion que partage le premier ministre Brian Mulroney lui-même.

MULRONEY: Allons-nous créer cette nouvelle culture? D'abord en essayant, bien sûr, de sensibiliser davantage le public à l'importance des sciences et de la technologie dans la vie de notre pays et à la nécessité de faire des progrès dans ce domaine pour assurer notre position concurrentielle, future, sur les marchés internationaux.

REPORTER: De façon générale ce matin, les participants à la

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conférence des invités triés sur le volet par Ottawa, ont donné leur bénédiction à l'orientation générale des politiques fédérales en matière de recherches et de développements. À son désir de lier très étroitement les communautés scientifiques et universitaires au besoin du monde industriel. Une expérience qui finit bien pour le gouvernement, tellement bien qu'il y aura maintenant 5 conférences régionales calquées sur le modèle de celle qui vient de se terminer ici.

Chantal Hébert à Toronto.

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PROGRAM: EMISSION: PRÉSENT	DATE: DATE: 15 JANVIER 1988
NETWORK / STATION: RESEAU / STATION: RADIO CANADA/CBOF	TIME: HEURE: 17H55

LA CONFÉRENCE SUR LES INNOVATIONS ET TECHNOLOGIES

CBOF: La Conférence nationale sur la technologie et l'innovation a pris ce midi. Deux cents intervenants des milieux universitaires, gouvernementaux et de l'industrie y ont participé. Le Premier ministre fédéral a profité de cette tribune pour annoncer l'injection d'un milliard trois cents millions de dollars dans la recherche scientifique, argent qui servira entre autres à créer des centres d'excellence attachés aux universités. Un projet qui laisse les universitaires sceptiques. Frédéric Nikoloff a demandé à monsieur Roland Doré, directeur de l'École polytechnique de Montréal d'expliquer cette réaction.

ROLAND DORÉ: Le un milliard trois cents millions ne sera pas
dir. École appliqué exclusivement au Centre d'excellence. Je
polytech- crois que le programme de ce Centre d'excellence,
nique de il est prévu 250 millions sur une période de 5 ans. Donc, une
Montréal) moyenne de 50 millions par année. Alors donc, si on imagine que
chaque centre pourra coûter annuellement de 3 à 4 millions ça veut
dire que ça fait pas beaucoup de centres, 5 ou 6 centres au niveau

...2

JEAN-PIERRE FERNE SEULEMENT.

canadien. Alors je crois que ça n'est pas suffisant.

REPORTER: Est-ce qu'on a détails monsieur Doré, quelle sera la part du Québec là-dedans?

DORÉ: Bien écoutez, la part du Québec sera ce que le Québec va aller chercher dans ce programme là parce que ce sera un programme qui sera jugé avec des standards internationaux donc, il faudra absolument que les équipes du Québec et que les universités du Québec se mettent ensemble peut-être en partenariat avec les universités d'autres provinces pour faire des propositions qui soient alléchantes à des comités internationaux.

REPORTER: Lors de cette conférence monsieur Doré, il y avait bien sûr comme vous des universitaires qui étaient présents mais il y avait aussi des représentants de l'industrie privé. On a l'impression que l'industrie privée a été un petit peu mise de côté face à ces fonds, face à cet argent pour promouvoir et pour améliorer la recherche au Canada. Est-ce que je me trompe?

DORÉ: Bien écoutez, vous avez dit tout-à-l'heure qu'il y avait un milliard trois cents millions de prévus, le programme des centres 250 millions, un programme de sensibilisation de la population à l'importance de la technologie de l'innovation 10 millions, un programme de bourses 20 millions. Il reste donc, la différence entre...près de un milliard de dollars pour des

programmes qui certains d'entre-eux je le suppose seront appliqués directement à promouvoir l'innovation dans l'industrie, donc, ça c'est à voir encore.

REPORTER: Comment se porte l'état de la recherche au Québec monsieur Doré actuellement par rapport aux autres provinces canadiennes là, au moment où on se parle?

DORÉ: La recherche universitaire on a encore des gains à faire par rapport à nos collègues des autres provinces et surtout dans les universités francophones. Parce qu'il faut bien comprendre que la recherche chez nous dans les universités francophones n'a débuté dans la plupart des établissements il y a 20 ou 25 ans, tandis que dans le milieu anglophone il y a 50 ans. Alors donc, on a du rattrapage à faire. Maintenant, il y a d'excellentes équipes dans nos universités francophones du Québec mais disons que le niveau de qualité n'est pas répandu dans toutes les équipes de recherche universitaire.

REPORTER: Et est-ce que ce niveau de qualité dépend en faite des sommes allouées à la recherche?

DORÉ: En partie, et dépend en partie aussi de la qualité des personnes. Nous avons bâti nos équipes universitaires que récemment. Si je prends l'exemple de l'Ecole polytechnique, avant 1970, nous n'avions pas...nous ne nous étions pas donné comme mandat de pousser la recherche donc, l'avancement

des connaissances. Alors donc, l'activité de recherche chez nous date de 20 ans. Alors donc, on a encore à bâtir dans le corps professoral, bâtir cette qualité intrinsèque dans toutes nos équipes.

REPORTER: Monsieur Doré, vous parliez tout-à-l'heure justement d'une campagne de sensibilisation pour un peu changer l'image de la technologie ici au Canada et est-ce que vous avez toujours l'impression que l'on voit la technologie comme une menace à la sécurité d'emploi?

DORÉ: Ah ça c'est certainement un effet...en fait, la technologie est effarante un peu pour tout le monde. Ça dépend quelle technologie par rapport à chaque personne. Il y a des personnes qui ne peuvent pas toucher un clavier d'ordinateur il y en a d'autres pour lesquelles c'est familier. Or, dans le monde du travail je crois, dans le...chez la force ouvrière c'est la même chose. Il y a des gens qui espèrent que la technologie puisse s'introduire parce que c'est une question de survie pour l'entreprise, c'est plus une question de choix maintenant. Par contre, il y en a qui sont un peu plus réactionnaires et puis ils voient dans ces techniques là une menace à leur emploi ce qui est aussi vrai. Mais, sauf qu'on a pas le choix, il faut introduire ces nouvelles technologies dans nos entreprises que ce soit pour améliorer la productivité que ce soit pour réduire le coût de revient des produits ou que ce soit pour améliorer la qualité de ces produits là, devenir donc, plus compétitifs.

REPORTER: Et j'imagine que dans un cadre de libre-échange la technologie ou en tout cas la recherche technologique prendra d'autant plus d'importance pour assurer cette compétition, cette compétitivité?

DORÉ: Alors exactement. C'est tout à fait important et c'est pour nous une opportunité que le libre-échange se fasse avec les États-Unis, mais il faut avoir une attitude positive et non pas une attitude négative vis-à-vis la technologie dans le sens que les Canadiens sont imaginatifs, nous pouvons être concurrentiels au niveau international, parce que lorsqu'on parle d'un marché américain ou Nord-américain en fait, on parle d'un marché mondial parce que les standards de qualité de ce marché là sont des standards mondial. Alors donc, des standards mondiaux.

REPORTER: Monsieur Doré en terminant, et pour revenir justement à cette conférence qui avait lieu donc à Toronto et qui se terminait aujourd'hui. Vu de l'extérieur c'est un petit peu difficile de dissocier ces promesses fédérales avec une élection. Est-ce que vous pensez que la recherche technologique pourrait devenir un enjeu électoral?

DORÉ: Oh définitivement. C'est un enjeu électoral, parce que c'est un enjeu national. Alors donc, si il y a une année...si c'est une année d'élections c'est évident donc, ça sera un enjeu électoral parce que c'est un enjeu national.

Ce qui ressemble à cette conférence là c'est une prise de conscience de tous les partenaires qu'il faut dorénavant collaborer davantage pour atteindre cet objectif de maintenir la qualité de notre vie, la qualité de notre environnement et de maintenir notre état de vie, notre niveau de vie au Canada. Alors donc, c'est sûr que ça deviendra un enjeu électoral.

REPORTER: Monsieur Roland Doré, je vous remercie beaucoup d'avoir participé à notre émission.

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PROGRAM:
EMISSION: WORLD REPORT

DATE: JAN. 15, 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: GLOBAL/CIII

TIME: 18:30
HEURE:

SCIENCE AND RESEARCH CONFERENCE WRAPS UP

GLOBAL: The science and technology conference being held in Toronto has wrapped up. It was the first meeting of its kind in Canada and scientists say they may have accomplished something they've been pushing for for years. They say business and government leaders have finally recognized what they've been saying all along - that there must be a substantial investment in science and technology to allow Canada to compete in the markets of the future. Leslie Jones reports.

REPORTER: After three days of workshops, Canada's key business leaders issued their call to action, a plan to make every Canadian understand the critical importance of investing in science and technology.

D. HENNIGAR: It is a deadly serious matter to our continuing
PRESIDENT
BURNS FRY economic and cultural prosperity. The status quo is not acceptable. To do nothing is to do wrong.

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REPORTER: Conference delegates say the first step is making science and technology part of Canadian culture. They recommend a campaign like the highly successful Participaction program for fitness. The federal government has already responded by announcing a \$10 million budget for a science campaign. Among the other key recommendations better science training for teachers and students, the establishment of business networks to trade information on rapidly changing technology and the creation of a new federal research tax credit to replace the one scrapped by the Conservative Government.

MULRONEY: I share your enthusiasm. I wish I could afford more of it.

REPORTER: On the first day of the conference, the Prime Minister announced his government would spend \$1.3 billion on science and technology over the next five years. The government, he says, can't do it all.

J. ROTH: All Ottawa's been doing is spending your borrowed EXECUTIVE V.P. NORTHERN TEL. money and putting a mortgage on the backs of your kids and their kids.

REPORTER: Although only 2 per cent of Canadian business has a research and development component, conference leaders say the success stories must be trumpeted. Northern Telecom for instance, invests more money in r. & d. than any other Canadian

company and the results have been impressive.

ROTH: ...that in the shake of this taking place in our
 industry, (inaudible) industry, we've moved from 9th
place to 4th place over this period of time and we've seen some very
large names disappear from our industry.

REPORTER: Conference delegates hope examples like that will
 prove to Canadians science and technology is essential
to ensure the country's future prosperity.

Leslie Jones, Global News, Toronto.

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PROGRAM:
EMISSION: LES NOUVELLES TVA

DATE:
DATE: 15 JANVIER 1988

NETWORK / STATION:
RESEAU / STATION: TVA/CHOT

TIME:
HEURE: 23H00

PARTICIPATION DE 1 MILLIARD À LA STATION ORBITALE AMÉRICAINE

CHOT: Le coût de la participation canadienne au projet américain de station orbitale sera supérieur à un milliard de dollars. C'est ce qu'a annoncé à Toronto le ministre Robert de Cotret à l'issue de la Conférence nationale sur la technologie et l'innovation. Une conférence d'ailleurs qui a pleinement satisfait le Premier ministre Mulroney.

REPORTER: Pour Brian Mulroney, la conférence a été un succès total. Les subventions de 1,3 milliards de dollars aux universités ont été bien accueillies, la future campagne de sensibilisation du public aux sciences et à la technologie annoncée par le ministre Frank Oberle a suscité des réactions enthousiastes, mais surtout la communauté des affaires ne lui a pas demandé davantage d'argent. Brian Mulroney ne veut plus que seul le gouvernement fédéral subventionne à partir de sommes déjà empruntées, les projets des industries privées.

BRIAN MULRONEY: Ottawa has been doing this spending your borrowed money.

REPORTER: Le monde des affaires a donc proposé deux recommandations au gouvernement pour trouver les fonds nécessaires à la recherche et au développement.

NON-IDENTIFIÉ: Une des solutions à envisager et nettement du type du régime d'épargne-action du Québec qui permet un financement de projet audacieux, une dimension différente et stimulante à l'innovation au niveau de l'entreprise.

REPORTER: L'autre solution envisagée: remettre en vigueur le système de crédits d'impôt à la recherche scientifique qui a été aboli par le ministre Wilson. Enfin, alors que la communauté des affaires était à l'écoute, le ministre Robert de Cotret a annoncé que le coût de la participation canadienne au projet américain de station orbitale dépassera le milliard de dollars et qu'il fera des recommandations sous peu au Cabinet à ce sujet. Ce n'est qu'après dit-il qu'il sera en mesure de dévoiler qui de Montréal ou Ottawa sera l'hôte de la future agence spatiale.

Catherine Aubert à Toronto

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PROGRAM: EMISSION:	THE HOUSE	DATE: DATE:	JANUARY 16, 1988
NETWORK / STATION: RESEAU / STATION:	CBC/CBO	TIME: HEURE:	9:10 AM

CONTROVERSY FROM THE INNOVATION AND TECHNOLOGY CONFERENCE

CBC: Canadian scientists won top marks recently after working night and day to solve the mystery of the poisoned mussels. In fact, the federal government has the largest stable of scientists in the country. They're represented by the Professional Institute of Public Service Employees. There are 10,000 of them, but not was invited to the Prime Minister's big scientific shindig in Toronto this week, and federal scientists aren't the only ones who felt snubbed. The President of the Canadian Labour Congress, Shirley Carr was at first invited to speak to the National Conference on Technology and Innovation. Then she was scratched off the list of speakers; not because of her views on scientific research or funding. The CLC says Shirley Carr was blackballed by conference organizers who said the Prime Minister was unhappy with her views on free trade.

That's Routine Business for this week.

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PROGRAM:
EMISSION: QUIRKS AND QUARKS

DATE:
DATE: JAN. 16, 1988

NETWORK / STATION:
RESEAU / STATION: CBC/CBO

TIME:
HEURE: 12:05

NEW MONEY PROMISED FOR RESEARCH AND DEVELOPMENT THIS WEEK

CBC: This week, the National Conference on Science and Technology was held in Toronto. Prime Minister Mulroney's announcement that \$1.3 billion would be given to science and technology over the next five years is the first step toward what the government hopes will be a new direction in Canadian science. The money will be used to fund centers of excellence, scholarships and other as yet undefined science. Robert de Cotret is Minister of State for Science and Technology and Minister of Economic and Industrial Expansion. He's got the money.

DE COTRET: One of the very important elements of the conference was to ensure that we have the participation of the provinces, the participation of private industry, of the academic community and of labour, in this program for science and technology. And obviously, you know, its quite clear..the federal government cannot just write a cheque and do it alone. It has to be an overall national effort to make sure that we are at the forefront in terms of technological development as a country.

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CBC: Robert de Cotret, Minister of State for Science and Technology. Dr. Larkin Kerwin is Director of the National Research Council. He's optimistic.

KERWIN: It is a first step, but it will do some good things. The idea of increasing the number of students in engineering is very good and this plan will increase that number by 10,000 students when its in full swing, that's four years from now. The idea of setting up centers of excellence is also good. There are several centers of excellence already in Canada, but there are gaps and hopefully, this program will fill these gaps. More important than all of that, however, is the fact that this conference has broadened the interest in science and technology from the research community which has been talking about Canada's needs for the last 25 years, to the industrial community. At last, the industrial community seems to be opening up to these ideas. And the conference was full of chief executive officers who are saying all the right things. There was no disagreement, there was no dichotomy. Everyone was in concert. Everyone is leaving with the thought that they have something to do and that everybody is in the boat together.

CBC: Now when you say they were saying the right things, what sorts of things were these chief executive officers saying?

KERWIN: They were saying that science and technology is the backbone of modern industry. That industry has

to get into research and development itself in a much more massive fashion and that the attitudes of the whole Canadian nation has to become permeated with the new technological culture. And they referred to it often as a matter of national culture. You wouldn't have heard any of this three or five years ago. And now that they are going out and that the ripple is spreading, the nation as a whole will become more sensitive to the problem. The conference was very widely covered by the media and we are going to see, I believe, a swing in public opinion over the next year or two. This is what we've been waiting for for a generation.

CBC: You mean a swing toward a public understanding and acceptance of the importance of science and technology?

KERWIN: That's right. And the public insistence and demand that its government policies and its industry fall into line. I remember, a little over 10 years ago, when I was at Inserk(?), we made a survey of Canadian industry to find out what their plans were for improving industrial r. & d. in Canada and there were no plans. They didn't intend at that time to increase it at all. And the reactions we got from the survey were that it wasn't necessary for Canada to do research and development in industry. We had our raw materials. There was a great world market for them. And in any case, countries like Germany and the States were doing the research and development anyway and we could easily copy it or borrow it or import it somehow. This has completely changed. People now realize that to exploit research and development, science and

technology, you have to be good at it yourself.

CBC: Dr. Larkin Kerwin, Director of the National Research Council. Howard McCurdy is science critic for the New Democratic Party. He's skeptical.

MCCURDY: What has to concern us is the efforts of industry and government to twist the direction of basic and fundamental research as if political minds or market-oriented minds are capable of directing basic and fundamental research to do, at their bidding, what is desirable in terms of identifying what's going to happen in the future. And as you know, our present fantastic economic growth derives from such things as economic...electronics and bio-technology, have derived from spontaneous leaps of creativity and invention that could not have been anticipated. And if we had set about to design a bio-technology industry on the basis of the kind of market-oriented industrially determined research instead of basic research, we probably wouldn't have any of the rather significant elements of the scientific contribution to economic growth that we have now.

CBC: Howard McCurdy is science critic for the New Democratic Party.

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PROGRAM: EMISSION:	LE MAGAZINE ÉCONOMIQUE	DATE: DATE:	16 JANVIER 1988
NETWORK / STATION: RESEAU / STATION:	RADIO-CANADA / CBOF	TIME: HEURE:	12H15

PLUS D'ARGENT POUR LA RECHERCHE SCIENTIFIQUE

CBOF: Ça c'est terminé hier à Toronto: la Conférence nationale sur la technologie et l'innovation. Une conférence qui réunissait 200 personnes choisies avec grand soin par le premier ministre Mulroney, pour leur donner leurs avis sur la façon la plus intelligente...

CBOF(2): Intelligente!

CBOF: ...C'est son mot, en effet, de dépenser 1,300,000,000\$ pour promouvoir la technologie et l'innovation au Canada.

MULRONEY: Une nation commerçante comme la nôtre doit absolument maintenir et améliorer sa position concurrentielle. Nous avons institué à la Chambre des communes, pour la première fois, un comité permanent de la recherche, de la science et de la technologie qui, donne à ses activités vitales pour notre avenir économique, une attention parlementaire soutenue qu'elle n'avait pas auparavant. Nous nous sommes entendus avec les provinces et les territoires sur les éléments d'une politique nationale des

sciences et de la technologie, et nous avons établi un comité et un conseil ministériel pour en superviser la mise en oeuvre. Ces constatations et d'autres que vous ferez pendant cette conférence vont nous aider à définir un plan d'actions national, un plan pour le gouvernement aussi bien que pour les milieux d'affaires, universitaires et syndicaux; un plan qui nous aidera à créer une culture des sciences et de la technologie, de manière à faire prendre conscience aux Canadiens que la recherche scientifique et le progrès technologique sont les fondements de notre prospérité et de notre qualité de vie.

CBOF(2): Quelques chiffres, Réginald, que citait Monsieur Mulroney dans cette allocution d'ouverture. En 86, le déficit commercial du Canada dans les catégories de produits de haute technologie, et bien c'est de l'ordre de 7\$ milliards. Nous avons aussi au Canada 90 chercheurs ou scientifiques par 100 mille habitants. En Grande-Bretagne, c'est 140; au Japon, 240; aux États-Unis, 281.

CBOF: Alors voilà donc pourquoi le gouvernement Mulroney a décidé d'injecter 1,300 000 000\$ d'argent neuf pour donner un souffle nouveau à la technologie et à l'innovation au Canada.

CBOF(2): Les observateurs du secteur privé, comme Roger Voyer, du Groupe Nordicité(?), un groupe de consultants, supportent en général le gouvernement dans cet effort. C'est urgent pour le Canada.

VOYER: Si on regarde un peu dans le monde qu'est-ce qui se passe, on voit que c'est vraiment la matière grise qui compte. Dans le passé on a vraiment exploité nos ressources naturelles mais on voit que ce secteur est en perte de vitesse en ce moment, si on regarde les nouveaux matériaux qui remplacent les matières premières, et que si on regarde les pays qui sont vraiment en... qui ont beaucoup de croissance qui croît(sic) en flèche, on voit que ce sont des pays qui... à base de matière grise. Par exemple si on regarde la Corée où les dépenses en recherche et développement, comme proportion du produit intérieur brut, sont de l'ordre de 2 pour cent tandis qu'ici au Canada, c'est 1,3, je crois.

CBOF: On a l'impression que les pays qu'on disait sous-développés justement, sont en train de nous déborder sur notre gauche et notre droite, parce que ces pays-là ont compris qu'il fallait réinvestir beaucoup des profits dans la recherche. Pourquoi est-ce que au Canada on ne l'a pas fait naturellement?

VOYER: On a pas... on l'a pas fait naturellement parce que jusqu'à maintenant on a pu utiliser l'exploitation de nos ressources naturelles, exporter ses ressources naturelles et puis importer des produits finis. Et maintenant on s'aperçoit que si on regarde un peu à l'horizon, vers l'an 2000, qu'il va falloir restructurer l'industrie vers les technologies de pointe, même dans les secteurs primaires, parce qu'il va falloir utiliser cette technologie pour accroître la productivité dans tous les

domaines.

CBOF: Qu'est-ce qu'il faudrait faire au Canada pour nous remettre en course?

VOYER: Pour nous remettre en course, je crois qu'il y a deux volets. Il y a le volet de l'offre(?), c'est-à-dire une nouvelle connaissance. Il faut vraiment se pencher sur ces nouvelles technologies et ce qu'on appelle ici à Ottawa les technologies stratégiques, la bio-technologie par exemple, les nouveaux matériaux, la micro-électronique. Il faut avoir ces connaissances de base. Simplement, si on veut importer de la technologie, il faut savoir ce qu'est-ce qu'on importe. Alors il faut ces connaissances de base du côté de l'offre(?). Il faut aussi se pencher au deuxième volet; c'est du côté de la demande. Si on regarde l'industrie canadienne, il y a à peu près 3 pour cent des firmes qui font de la recherche. La quasi totalité des autres firmes n'ont même pas un ingénieur. Alors il faudrait mettre des ingénieurs dans les firmes pour pouvoir... afin que les firmes puissent apprécier la contribution que la technologie puisse amener, alors l'apport de la technologie à la croissance des firmes. Alors... parce que là on peut être dépasser par les autres pays qui eux tout de même ont... font des dépenses nettement plus importantes. Alors je crois que à ces deux volets-là, ces deux volets qui se recouvrent, mais moi je dirais, du côté de la demande il faut vraiment pousser de plus en plus.

CBOF: Je reprends les termes de Monsieur Voyer. Le programme annoncé par le premier ministre Mulroney

s'attaque, il me semble, beaucoup plus à l'offre de technologie qu'à la demande de technologie.

CBOF(2): Bien c'est ce qu'il semble au premier abord. Mais les détails sont très très limités. Pour psychanalyser ce programme national, deux experts; Camille Limoges, de l'UQAM, il a été sous-ministre à la Science et à la technologie à Québec; et Maurice Labbé, il est président du Conseil de la science et technologie du Québec. J'ai rejoint Monsieur Labbé sur le parquet de la Conférence à Toronto.

Vous avez, Monsieur Labbé, écouté tout ce qui se passe officiellement, officieusement aussi à Toronto. Est-ce qu'on peut parler d'euphorie chez ces experts du privé, des universités?

LABBÉ: Je ne veux pas dire qu'il y a une euphorie, mais il y a certainement une attente intéressante et une volonté de discuter des problèmes de fond dans les ateliers qui forment la majeure partie de la conférence.

CBOF(2): Mais il semblerait, Monsieur Labbé, que après avoir pensé qu'on annoncerait peut-être deux ou trois milliards de dépense pour la recherche en science et technologie au cours des prochaines années, que ce 1,3\$ milliards est un petit peu tout petit. C'est... l'an dernier on a donné 1\$ milliard simplement pour sauver les meubles chez les fermiers au Canada, quand on pense à l'avenir du pays, d'ici l'an 2000, 1,3\$ milliard c'est tout petit malgré tout.

LABBÉ: Oui c'est... surtout que c'est sur cinq ans. Cependant, là encore il y a une certaine attente. On sait pas comment seront utilisé ce milliard point trois, à peine trois cent millions sont déjà étiquetés pour des centres d'excellence et pour des bourses aux étudiants du premier cycle. C'est une innovation ça au Canada que le fédéral financera des bourses de prestige au niveau du premier cycle en science et en technologie. Mais il reste un bon milliard alloué, et personne ne sait beaucoup comment ceci sera fait. Sauf que, dans l'exposé de Monsieur Mulroney il y avait une insistance et qui est repris souvent sur l'importance fondamentale de l'éducation à tous les niveaux. C'est l'impératif central, c'est la clé du succès, et on sait fort bien que c'est vrai. Tout le monde devrait savoir que c'est la ressource humaine qui est fondamentale, de sorte que il est possible que cette aide-là vienne davantage aux universités, à des fonctions éducatives générales, éducation du public même de la science et technologie, plutôt que directement dans l'industrie. On s'attend plutôt que l'industrie apporte des fonds pour en quelque sorte épauler ou servir de contre-partie aux fonds fédéraux.

CBOF(2): Monsieur Limoges, vous qui avez été le maître d'oeuvre de la politique technologique au Québec, pendant un bon moment, est-ce que vous voyez dans ces déclarations au niveau du fédéral, un virage important?

LIMOGES: Bien écoutez, un virage, je ne sais pas. Déjà lors de la campagne électorale précédente Monsieur

Mulroney avait promis de porter à 2,5 pour cent du pays B(?) les dépenses de recherche. Elles ont pas bougé depuis son accession au pouvoir. Il nous promet maintenant une augmentation en crédit neuf, de 1,300 000 000\$ au cours des cinq prochaines années. On veut bien le croire sur parole cette fois.. Cependant on sera un peu plus rassuré si on savait exactement comment ces sommes seraient dépensées. Avoir de l'argent c'est bien mais on peut le dépenser de bien des manières plus ou moins efficaces, et pour l'instant je pense qu'on doit être prudemment perplexes, si non sceptiques.

CBOF(2): Est-ce que, Messieurs, ce n'est pas le modèle ontarien qu'on répète, c'est-à-dire quand Monsieur Peterson est arrivé en élections, il a distribué des centres d'excellence de par l'Ontario. Il s'agissait dans le fond d'une sorte de tactique plus électorale que d'une politique scientifique à proprement parler. Est-ce que, Monsieur Labbé, l'électoralisme est important dans cette conférence à Toronto?

LABBÉ: Il y a aucun doute là-dessus. Maintenant vous dites que c'est inspiré de l'Ontario. C'est bien évident. L'Ontario et son premier ministre, ce sont les leaders au Canada actuellement en ce qui concerne le développement de la science et de la technologie. Et ils font donc envier un peu les autres gouvernements et surtout le gouvernement fédéral qui prend en quelque sorte de la suite de Peterson qui se met à parler de centres d'excellence, enfin... et de financer les très grands chercheurs au Canada, comme il devrait l'être.

NON-IDENTIFIÉ: Compte tenu de la stagnation relative ou de la progression excessivement lente des dépenses de RD(?) au Canada au cours des années récentes, l'efficacité de ce programme et la crédibilité même du gouvernement, va dépendre de la façon dont les sommes, dont les engagements financiers seront faits. Si on nous annonçait par exemple que lors du prochain exercice budgétaire on dépense 120\$ millions et que on dépensera seulement dans 4 ou 5 ans à un rythme que 400\$ millions par année, ce serait pas vraiment convaincant.

CBOF(2): Mais est-ce que ce n'est pas, Messieurs, un peu déprimant que de voir que on met tout l'accent du côté de l'offre, de la production de choses nouvelles, d'informations nouvelles, de connaissances nouvelles et non pas sa diffusion dans le système. C'est un peu comme si on parlait de travaux publics pour scientifiques et intellectuels plutôt que de politiques scientifiques et technologiques qui s'assureraient que les technologies de pointe font se répandre très vite dans toutes nos entreprises et créer une compétitivité nouvelle.

VOYER(?): Oui c'est très juste. Et dans les ateliers qui sont dominés par les industriels, cette question revient beaucoup plus souvent. L'importance de notre impression(?) des nouvelles technologies et, pas tellement dans les industries de haute technologie, mais dans les moindres entreprises, dans les entreprises classiques traditionnelles que nous avons. Ça c'est vrai et il n'y a pas... on peut pas dire qu'il y a, dans

les annonces actuellement, ce n'est pas du tout dans cette visée-là.

NON-IDENTIFIÉ: Je crois que vous avez tout à fait raison qu'on est loin d'avoir réglé les problèmes de l'innovation industrielle lorsqu'on injecte davantage d'argent dans les universités. Cependant il faut se souvenir que il y a quelques années, j'ai pas vu de chiffres très récents, les laboratoires du système Bell(?) aux États-Unis, dépensaient à eux seuls pour la recherche autant que tout le Canada, tout niveau de gouvernement, tout secteur industriel compris. Donc, il y a aucun doute qu'il faut saluer(?) comme quelque chose de positif tout effort pour accroître l'intensité de la recherche au Canada; favoriser la diffusion des innovations, favoriser le transfert, ça supposer ça qu'il existe dans l'ensemble du tissu industriel canadien et pas seulement dans les très grandes entreprises, du personnel scientifique et technique. À mon avis, un effort pour soutenir l'emploi scientifique et technique dans les entreprises par des crédits d'impôt, des mesures fiscales de quelque nature, peut-être même par des subventions, seraient un complément absolument essentiel à une tentative, à une poussée telle que celle que nous annonce le gouvernement fédéral actuellement.

CBOF(2): Donc un programme national de technologie et d'innovation dont les contours sont encore bien vagues; programme qui met l'accent sur l'offre, programme qui faudrait compléter par des efforts côté demandes évidemment, pour s'assurer que les résultats de la recherche et de l'innovation vont être diffusés, vont être adoptés rapidement dans l'économie.

CBOF: Sans ça, on sème dans le désert. Il faut rappeler que le Canada ne produit que 2 pour cent à peu près de la science mondiale. C'est Camille Limoges qui le rappelait récemment. Le reste, 98 pour cent, ça nous vient de l'étranger. Le problème fondamental donc c'est de nous assurer que les entreprises canadiennes vont pouvoir s'alimenter le plus possible et le plus vite possible à 100 pour cent de ce cadeau.

CBOF(2): Mais nous avons des problèmes particuliers au Canada, ce fait que les deux tiers de notre industrie soit contrôlé par des étrangers et puis souvent la recherche, ces grandes entreprises étrangères, c'est chez eux qu'elles la font.

CBOF: Royer Voyer a bien étudié ce problème-là. Il lui semble cependant qu'il y a des façons de mobiliser ces multinationales dans un programme national canadien.

VOYER: Même si on a une forte main mise étrangère sur l'industrie canadienne, on peut toujours voir qu'à travers le monde maintenant que ces grandes firmes donnent à leurs filiales certains mandats. Et, c'est dans ce contexte-là, par exemple si on regarde Pratt Whitney ici près de Montréal, à Longueuil, on voit qu'ils ont un mandat pour certaines technologies. Alors je crois qu'on peut extraire de ces compagnies des mandats pour avoir une production canadienne qui peut exporter à l'étranger.

CBOF(2): Admettons, même si il faut le dire cette idée de mandats mondiaux pour les filiales canadiennes

de multinationales, ce n'est peut-être pas aussi facile à réaliser qu'il semble. Il reste qu'un programme national canadien ne peut pas aller dans toutes les directions. Est-ce qu'on sait combien ce milliard de dollars qui reste à préciser, est-ce qu'on sait comment on va le dépenser, où, dans quel secteur?

CBOF: Justement, on ne le sait pas. Il faut espérer cependant que ce pannel d'experts internationaux qui va juger les projets soumis par les diverses régions, divers groupes d'université, bien que ce pannel ne va pas juger les projets in vacuum au nom des seuls impératifs scientifiques sans tenir compte de l'économie canadienne telle qu'elle est maintenant, et de son potentiel. Roger Voyer.

VOYER: Mais on parle de la perte de vitesse du secteur des ressources naturelles, mais tout de même des grands volumes, on exporte beaucoup. Et là il y a de grandes choses à faire du point de vue d'appliquer ces nouvelles technologies dans ces secteurs de ressources naturelles. Par exemple, dans des forêts, tout le secteur de bio-technologie s'y prête. Et la micro-électronique, l'informatique, etc. Alors je crois qu'il faut tout de même prendre ces nouvelles technologies et les adapter aux secteurs de ressources naturelles pour pouvoir accroître la productivité. Ensuite il y a certains domaines et tout de même on est très bien placé, les télécommunications par exemple, ça c'est un domaine, un domaine de pointe là-dedans et même un secteur de la bureautique. On a tout de même certains créneaux où le Canada est très fort. Alors faut vraiment pousser ces créneaux-là.

CBOF(2): Du côté la demande, comment est-ce qu'on va faire pour que la technologie existante, à un point donné à New-York, à Paris, à Londres, à Hambourg, puissent être adoptée vite, non seulement à Montréal mais rejoindre aussi Québec, St-Jean Terre-Neuve. Comment est-ce qu'on facilite, comment est-ce qu'on accélère ce processus d'adoption de technologies nouvelles, parce que c'est surtout de ce côté-là que ça va faire la différence.

VOYER: Le gouvernement a mis sur pied un programme d'agents de technologie à l'étranger. Alors ces agents-là qui sont embauchés, par exemple ce sont des Américains aux États-Unis, un Suédois en Suède, qui ont pour mandat d'assister les firmes canadiennes à adapter la technologie étrangère. Alors on voit maintenant que ça c'est sur pied, ça déjà c'est démarré, c'est lancé. Le Conseil national de recherche lui peut faire un peu la même chose avec une espèce de consultant courtier qui fait un peu le lien entre la technologie étrangère et le contexte canadienne, la firme canadienne. Alors justement il y a des programmes en cours, des programmes qui se lancent en ce moment juste pour essayer d'accélérer l'adaptation de la nouvelle technologie.

CBOF(2): Est-ce que l'épée de (inaudible) ce que représente le libre échange, ça va représenter un coup de fouet pour les entreprises canadiennes, une sorte de saine peur qui va les inciter à aller plus vite dans cette adoption de nouvelles technologies.

VOYER: Bien moi je l'espère, mais c'est simplement qu'un

volet c'est-à-dire qu'il faut... si on a le libre échange, il vaut tout de même d'un autre côté être prêt pour ce libre échange. Alors c'est pour ça qu'il nous faut vraiment se préparer pour pouvoir être compétitif dans ce contexte de libre échange.

CBOF(2): Et vous croyez que cette initiative nouvelle du gouvernement Mulroney, c'est un premier pas dans la bonne direction donc.

VOYER: Comme vous dites c'est un premier pas. J'espère qu'il va en avoir d'autres.

CBOF(2): Et ces autres pas ça pourrait être des stratégies d'emplois techniques dans les plus petites firmes grâce à des incitations fiscales, comme le suggèrait Monsieur Limoges, des mesures aussi pour accélérer la diffusion des innovations chez nous. Mais tout ça coûte très cher. Enfin pas très cher quand on considère les bienfaits qui en découleraient pour l'économie canadienne, mais très cher quand il s'agit de convaincre le ministre des Finances, Monsieur Wilson.

Bon, on disait en coulisse à Toronto, que la raison pour laquelle tout était si vague dans ce programme qu'on vient d'annoncer, c'est que au Cabinet on avait pas pu convaincre ce Monsieur Wilson qu'il fallait déserrer les cordons de sa bourse. C'est ce qui explique l'atmosphère de pessimisme mesuré qui a suivi l'euphorie des premiers moments à Toronto.

CBOF: C'est peut-être aussi que les gens qui étaient à Toronto, sont trop vieux, Gilles. Ils se rappellent le discours triomphaliste qui a accompagné la création du Conseil des sciences en 66, il y a déjà au-delà de 20 ans. Ils se rappellent peut-être aussi les débats du Comité Lamontagne au début des années 70 je pense, et puis il y a les grandes déclarations du gouvernement Trudeau en juin 78, et puis plus récemment l'exaltation du virage technologique au Québec, fin des années 70 début des années 80. Ce qu'il faut à ce genre de conférence pour que l'euphorie persiste, Gilles, voilà je l'affirme, c'est une clientèle beaucoup plus jeune, non!

CBOF(2): Oui mais c'est... enfin c'est un premier pas et ça ouvre tout les possibles... surtout en année d'élections. C'est ce qui faisait dire à l'un des participants plus optimistes qui accusaient ses collègues de se plaindre que tout ne sera pas parfait dans ce programme mais il disait bad breath ain't anything as bad as no breath at all. Bon bien traduction libre: il vaut mieux avoir mauvaise haleine que pas d'haleine du tout. C'est peut-être ça finalement la philosophie de Monsieur Mulroney.

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PROGRAM: SATURDAY REPORT
EMISSION:

DATE: JAN. 16, 1988
DATE:

NETWORK / STATION: CBC/CBOT
RESEAU / STATION:

TIME: 18:00
HEURE:

THIS WEEK - EVE SAVORY ON THE INNOVATION CONFERENCE

CBC: This week, the federal government committed itself to putting the development back into r. & d. The Prime Minister has pledged \$1.3 billion to research and development over the next 5 years, money to help Canadian businesses and the scientists who work for them, to move to the forefront of technology. Our science specialist Eve Savory has spent the past three days at the conference on technology and innovations, the forum chosen by Brian Mulroney to announce the extra funding. Eve, \$1.3 billion sounds like an awful lot of money. Who precisely is going to benefit from it?

REPORTER: We don't know exactly Barbara. We were told that about a fifth of that will go to what are called centers of excellence on various campuses across the country. These will be places where scientists could come together in one specific discipline, with the best minds in their business, so to speak, and do superb work. Another \$20 million will go to scholarships for science and engineering students against across the country. The rest of it we haven't been told

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and I suspect that with an election in the offing, the announcements will start to trickle out fairly soon.

CBC: So what was the reaction among most business leaders you talked to at this week's Toronto conference?

REPORTER: I would say restrained enthusiasm. Restrained because it isn't enough money. We have fallen incredibly far behind our industrial competitors and it would take a great deal more than that for us to catch up in terms of both industry's investment in r. & d. and the government's investment in r. & d. At the same time, they're enthusiastic because they see it is money well spent. The head of the Canadian Advanced Technology Association, Roy Woodridge(?), told me that there's a war on, and most Canadians don't even realize there's a war. And this may be the first foul fire to fight that war.

CBC: This pledge has been a long time coming. Brian Mulroney promised extra funds for research in the last election campaign. Now given that there could be soon another election, could this be seen as just another campaign promise?

REPORTER: I think that most of the business leaders at the conference are not stupid. They recognize too that this is going to be an important plank in an election campaign. At

the same time, they're willing to suspend that skepticism. For one thing, they think its too important to be skeptical about. And for the second thing, having the Prime Minister's imprint on something like science and technology is going to have a major impact in persuading the Canadian public and universities and other business people that science and technology really is important to our future.

CBC: Eve, thank you very much.

REPORTER: You're welcome Barbara.

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PROGRAM:
EMISSION: L'ÉVÉNEMENT

DATE: 17 JANVIER 1988
DATE:

NETWORK / STATION:
RESEAU / STATION: RADIO-CANADA / CBOF

TIME: 11H00
HEURE:

LES EFFORTS CANADIENS EN MATIÈRE DE RECHERCHE SCIENTIFIQUE

ENTREVUE AVEC LARKIN KERWIN

CBOF: Alors je vais maintenant rejoindre à Québec, dans notre studio de Québec, le président du Conseil national de la recherche du Canada, Monsieur Larkin Kerwin qui, participait à la Conférence de Toronto. Bonjour Monsieur Kerwin.

KERWIN: Bonjour Madame Poirier.

CBOF: Monsieur Kerwin êtes-vous impressionné par ces nouveaux crédits que le gouvernement consacrera à la recherche?

KERWIN: Bien sûr, c'est la première fois depuis quelque temps que des sommes un peu importantes ont été injectées dans le système et ça devrait encourager les autres gouvernement dans les provinces et, l'industrie, de faire de même. Par conséquent c'est un pas vers l'avant qui est très bien venu.

CBOF: Alors vous diriez que le gouvernement envoie donc un nouveau signal après avoir, pendant trois ans,

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coupé plutôt les budgets alloués à la recherche.

KERWIN: En effet, pendant les trois premières années, il semble que c'est bien le problème du déficit qui a été en vedette. Maintenant que ceci a été en quelque sorte pris en main, et bien l'on se tourne vers d'autres choses, et je suis très heureux que ce soit la science et la technologie.

CBOF: Oui vous mêmes au Conseil national de recherche, vous avez été touché dès l'arrivée au pouvoir des Conservateurs. Est-ce que si ces coupures ont diminué votre niveau d'activités, est-ce que ça vous a empêché - au Conseil national de recherche - de faire... de mener des recherches qui auraient pu être utiles?

KERWIN: Et bien ça nous a diminué en quelque sorte, mais ça a été parfois très exagéré dans les médias. Dans les faits, les activités, les programmes du Conseil national de recherche ont été diminués de 5 pour cent. Donc, il a fallu éliminer un programme sur vingt en moyenne, et il a fallu éliminer également des postes, ce qui a entraîné des mises à la retraite anticipée, et le reste, et le reste.

CBOF: Mais vous avez dégraissé là, mais est-ce que aussi... est-ce que ça a touché vraiment le coeur de l'activité du Conseil?

KERWIN: Mais non il reste le 95 pour cent. Mais, il y a certaines activités, en chimie organique par exemple, en spectroscopie à haute pression par exemple, en énergie renouvelable par exemple, qui ont été tout simplement arrêtées.

CBOF: Vous dites tout de même qu'à cause d'années de négligence, ça prend de 10 à 15 ans au Canada pour rattraper son retard sur les autres pays. Comment est-ce que le Canada peut le rattraper ce retard?

KERWIN: Et bien comme Monsieur de Cotret vient de le dire, ça ne se fera pas du jour au lendemain. Il ne faut pas oublier que nos concurrents dans l'industrie internationale, comme le Japon et l'Allemagne, ont pris quarante ans, c'est-à-dire depuis la Deuxième guerre mondiale, à atteindre la vitesse de croisière qu'ils connaissent aujourd'hui. Par conséquent le Canada ne peut pas faire pareille chose dans trois ou quatre ans. C'est très important de l'apprécier parce que si après trois ans certains pas ont été faits mais nous ne sommes pas encore rendus au niveau de nos adversaires, il ne faudra pas se décourager. Il faut se dire dès le début que nous sommes dans l'aventure pour longtemps, qu'il ne faut pas lâcher, et que année sur année, dixaine sur dixaine, il faut continuer à accorder la priorité à l'amélioration de notre économie par les moyens des nouvelles... de la nouvelle technologie et des recherches scientifiques.

CBOF: Et rattraper ce retard, ça se fera à certaines

conditions que nous allons, du reste examiner, au cours de cette émission. Mais en attendant d'examiner ces conditions, qu'est-ce que vous pensez d'un certain changement d'orientation. C'est une sorte de retour aux sources, vers les universités? Puisque le gouvernement canadien va accorder plus de fonds à ses centres... va d'abord créer des centres d'excellence et va accorder aussi des bourses aux étudiants dans le domaine scientifique.

KERWIN: Bien vous avez dit tout à l'heure que le Canada ne dépensait que la moitié de ses concurrents, et c'est vrai partout. Donc les universités n'ont que, disons la moitié des ressources qui leur faudrait, la même chose pour les laboratoires des gouvernements, la même chose et davantage pour l'industrie. Alors c'est un fait que depuis des dizaines d'années des universités connaissent les années des vaches maigres. Leur équipement dans beaucoup de cas commence à être désuet. L'étudiant gradué, surtout dans les départements d'ingénierie, sont seulement à moitié canadiens. Nous remplissons avec des étudiants venus de l'extérieur. Par conséquent c'est largement le temps que l'on s'occupe de cette ressource naturelle et nationale que sont les universités, et qu'on leur accorde leur importance relative qui est très considérable.

CBOF: Alors ce que vous dites là va faire très plaisir à Monsieur Jacques Léonard qui est à côté de vous en studio à Québec.

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PROGRAM: L'ÉVÉNEMENT
EMISSION:

DATE: 17 JANVIER 1988
DATE:

NETWORK / STATION: RADIO-CANADA / CBOF
RESEAU / STATION:

TIME: 11H00
HEURE:

LES EFFORTS CANADIENS EN MATIÈRE DE RECHERCHE SCIENTIFIQUE
ENTREVUE AVEC MONSIEUR ROBERT RENÉ DE COTRET

CBOF: Alors j'ai en ligne Monsieur Robert de Cotret, ministre de l'Industrie, de la science et de la technologie. Bonjour Monsieur de Cotret.

DE COTRET: Bonjour.

CBOF: Monsieur de Cotret, depuis trois ans le gouvernement conservateur a coupé les fonds à la recherche scientifique, et cette semaine votre gouvernement annonce donc qu'il déserre les cordons de la bourse. À quoi correspond ce changement?

DE COTRET: C'est pas véritablement un changement. Il y a eu des relocalisations de fonds dans le passé. On a toujours souligné l'importance de la recherche, de la technologie. Au cours des trois dernières années il y a eu plusieurs gestes de poser dans ce sens... dans ce secteur-là; on a nommé le comité consultatif dont vous mentionnez tout à l'heure, un comité qui s'est réuni sous la présidence du premier ministre à plusieurs

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reprises, avec des sous-comités qui ont eu une cinquantaine de réunions.

CBOF: Mais est-ce que vous n'attendiez pas davantage du secteur privé depuis trois ans? Est-ce que vous n'avez pas dû faire ce changement de carte(?) à cause de la lenteur du secteur privé?

DE COTRET: Ce n'est pas un changement de carte(?). On s'attend à une participation importante du secteur privé. C'était d'ailleurs un des buts de la rencontre de Toronto, d'une part de sensibiliser l'ensemble des Canadiens aux besoins essentiels pour l'économie canadienne de plus de sciences et de technologies, de plus d'innovations si on veut se tenir au pas avec nos concurrents internationaux. Le monde économique global change rapidement puis se dirige de plus en plus vers une économie... d'une économie basée sur la technologie, basée sur des nouveaux produits. Et puis, essentiellement pour faire ça il nous faut la participation, participation des provinces, du secteur privé, du monde académique, du monde syndical. Le gouvernement fédéral à lui seul est pas capable de reprendre, disons le temps perdu au cours des vingt ou trente dernières années...

CBOF: Oui et puis il y a les ressources financières aussi; 1 300 000 000\$ ça n'est pas beaucoup finalement.

DE COTRET: Bien écoutez, il faut toujours faire un certain équilibre entre les argents qui sont disponibles dans une situation fiscale qui est assez serrée. On croit qu'avec

le milliard trois cents millions qu'on vient d'annoncer cette semaine, on va être capable quand même de faire des progrès importants dans le domaine, et puis c'est un montant aussi qui est suffisant pour entraîner la participation du secteur privé, la participation des provinces, dans une politique de science et de technologie reliée à l'industrie, ici au Canada.

CBOF: Quand est-ce que les centres d'excellence seront ouverts dans les universités?

DE COTRET: Ça va évidemment prendre un certain temps. Il y a un jury international qui va déterminer les...

CBOF: International?

DE COTRET: Oui on va inviter des gens de plusieurs pays à nous faire, nous donner des conseils dans l'établissement des centres d'excellence.

CBOF: Et vous allez suivre les recommandations du jury?

DE COTRET: On va certainement s'inspirer des recommandations du jury.

CBOF: Parce que il y a déjà des inquiétudes, par exemple au Manitoba il y a le Winnipeg Free Press qui dit que à cause de la position de Monsieur Pawley au sujet du libre

échange, peut-être que le Manitoba n'aura pas son dû; les universités manitobaines.

DE COTRET: Non, non, non. Je pense que quand on regarde la réalité économique canadienne on trouve dans chaque région du pays, dans chaque province, des forces... des forces économiques importantes et puis les centres d'excellence vont être basés sur ces forces-là. Alors c'est une politique qui fera...

CBOF: Sans considérations politiques?

DE COTRET: Sans... non, non sans considérations politiques.

CBOF: Et les bourses pour étudiants, combien de bourses? Deux mille cinq cent, je pense... Mais...

DE COTRET: Deux mille cinq cent bourses, ce qui veut dire qu'au bout de cinq ans on va avoir quoi! douze mille cinq cent boursiers à la maturité du programme pour les premiers cinq ans, un montant de 2\$ mille par année.

CBOF: Et à partir de quand?

DE COTRET: Ça dès l'automne prochain.

CBOF: Bon, Monsieur Mulroney avait promis en 84 de doubler les dépenses en recherche et développement,

ce qui nous mettrait en les doublant, au niveau des autres pays industrialisés, actuellement c'est 1,3 pour cent du produit national brut. Avec le programme que nous annoncez, à quel niveau de dépenses ce situera le Canada? Est-ce qu'on va s'approcher là du...

DE COTRET: On va se rapprocher, mais il faut pas non plus s'imaginer que le 1,3\$ milliards va combler l'écart. Ça va dépendre beaucoup de la participation qu'on va être en mesure de recevoir du secteur privé. Comme je vous dis, le gouvernement fédéral à lui seul est pas capable de combler l'écart. Il faut qu'il y ait une participation très active des autres partenaires économiques pour qu'on puisse en arriver à combler cet écart-là. Ça va être un exercice à long terme, c'est pas quelque chose qu'on peut faire dans un an, deux ans, trois ans, même cinq ans. Mais c'est essentiel si on veut que le Canada ait une bonne position concurrentielle dans l'économie mondiale des années 2000.

CBOF: Il va y avoir des conférences régionales d'organisées sur le même thème que cette conférence, sur le thème de l'excellence. Votre gouvernement a-t-il l'intention de faire une campagne d'information pour sortir les Canadiens de ce que certains appellent l'analphabétisme scientifique?

DE COTRET: Oui absolument. Comme je vous dis, dans toutes ces conférences-là, celle de Toronto et les conférences régionales qui vont suivre, on vise deux buts. Le premier: la participation des autres agents économiques, le deuxième but: de sensibiliser les Canadiens aux besoins, à l'importance de la science

et de la technologie, leur faire connaître aussi comment on tente d'intégrer une politique du côté industriel avec nos politiques du côté scientifique.

CBOF: Monsieur de Cotret, je vous remercie beaucoup.

DE COTRET: Vous êtes bienvenue.

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PROGRAM: EMISSION:	AUJOURD'HUI LA SCIENCE	DATE: 17 JANVIER, 1988 DATE:
NETWORK / STATION: RESEAU / STATION:	RADIO-CANADA/CBOF	TIME: 12H15 HEURE:

LE POINT SUR LA CONFÉRENCE SCIENCE ET TECHNOLOGIE

CBOF: Des centres d'excellences, des bourses d'étude et des centaines de millions de dollars pour la science et la technologie. C'est ce qu'a annoncé, promis en tous cas, le Premier ministre Mulroney lors de la conférence sur la technologie et l'innovation cette semaine à Toronto. Malheureusement, on sait encore bien peu de choses sur ce qu'il adviendra de ces millions tant attendus, ni sur la participation des provinces à ce programme. Sans doute faudra-t'il attendre pour celà les cinq conférences régionales annoncées à la clôture de la conférence. Quoiqu'il en soit, les commentaires allaient bon train dans les corridors de cette réunion où nous retrouvons maintenant Jean Lalonde.

REPORTER: Exécutifs d'entreprises, de centres de recherches, de conseils scientifiques ont échangé cette semaine avec le Premier ministre sur l'avenir de la recherche et l'innovation au Canada. Deux cents invités, généralement heureux et heureuses de l'effort gouvernemental pour l'innovation technologique, pas

...2

nécessairement à cause du 1,3 milliards de dollars générateurs d'innovation technologique puisqu'une fois passé au moulinet de leurs calculettes, ce 1,3 milliards se révèle n'être qu'une simple augmentation de 10% de la participation gouvernementale à la recherche canadienne, mais heureux surtout d'être écoutés sur leur façon de voir cet avenir. Chacun a, bien sûr, ici des intérêts à promouvoir. Le milliard serait principalement destiné aux universités. Certains voudraient voir celles-ci se rapprocher de l'industrie et orienter sa recherche vers des applications. D'autres, comme le recteur de l'Université de Montréal Gilles Cloutier, veulent préserver leur indépendance.

CLOUTIER: Ça peut être un rapprochement, ce que je dirais, un rapprochement universitaire. Pas nécessairement un rapprochement industriel où des fois on craint que le chercheur universitaire devienne dominé par les préoccupations industrielles ou les préoccupations du secteur privé. Je pense que c'est justement à mon point de vue le contexte, c'est le type de contexte du moins, que je pense est le bon pour assurer un minimum de sensibilité des chercheurs universitaires aux besoins de la société qui les entoure et en même temps offrir aux gens du secteur privé l'occasion de mieux connaître, de mieux comprendre le mode de fonctionnement des chercheurs universitaires et par delà trouver des moyens peut-être plus efficaces d'utiliser les résultats de la recherche universitaire.

REPORTER: Mais lorsqu'on voit un effort aussi important du gouvernement axé sur le développement technologique, sur la compétitivité du Canada au point de vue technologique, est-ce qu'il n'y a pas un risque de débalancer un peu? Que cet effort

là se fasse au détriment de la science fondamentale?

CLOUTIER: Je vais dire que c'est un souci que j'ai, que je partage aussi. Il faudra être en alerte; s'assurer que le gouvernement ne néglige pas, que ces développements là ne se font pas au détriment de la recherche fondamentale, mais bien serviront à appuyer d'une certaine façon une augmentation de la recherche fondamentale et ça je pense qu'on va y arriver à mon avis. Si ce programme là a du succès, on a plus de chance qu'il y ait plus d'argent après ça pour les autres activités scientifiques.

REPORTER: Mais pour l'industrie, l'heure est résolument à la recherche pratico-pratique. Robert Marchessault, vice-président à la recherche de Xerox Canada.

MARCHESSAULT: Je sens qu'on est nettement dans une phase où la concurrence est telle qu'il faut imaginer qu'il y a un certain bagage de connaissances de base, non seulement celles générées par les Canadiens, mais au niveau mondial, et c'est le moment de l'exploitation. Alors, de plus en plus, je pense qu'il faut la recherche appliquée, il faut encourager le côté génie et c'est de là qu'on aura une fabrication saine des innovations dans un temps raisonnable.

REPORTER: Mais ceux qui font la recherche fondamentale disent que les innovations dans les applications technologiques d'aujourd'hui reposent sur des découvertes importantes de la recherche fondamentale d'il y a cinq ans, dix ans ou vingt ans. Est-ce que vous croyez qu'il n'y a pas un risque à délaissier ce secteur là de

la recherche?

MARCHESSAULT: Je doute qu'il soit délaissé, mais je cite l'exemple des Japonais. Tout de même, quand ils ont démarré leur miracle, ils se sont axés sur la science appliquée et ce n'est que plus tard qu'ils ont commencé à imaginer des projets comme l'ordinateur cinquième génération, etc.. Non, moi je pense que pour le Canada c'est très important de former une prochaine génération qui sera axée sur la science appliquée.

REPORTER: Mais au milieu de cette opposition, on fait remarquer que dans un monde où tout accélère, recherche fondamentale et recherche appliquée sont de plus en plus liées. Claudette MacKay-Lassonde (?) est vice-présidente du Conseil subventionnaire de recherches en sciences naturelles et en génie.

MACKAY: C'est un continent à mon avis. La recherche appliquée, parce qu'il va y avoir de plus en plus d'applications de recherche appliquée, ça va tirer en fait, on va faire face à des problèmes, on va dire comment ça se fait que ça ne fonctionne pas et quand on fait des problèmes comme ça, on se retourne immédiatement sur la recherche de base, la recherche fondamentale. On questionne les théories passées. On énonce de nouvelles théories. On les teste et on repart de nouveau vers un peu plus de recherches et on arrive à l'application de la recherche et de là, en ce moment, on va à la commercialisation et c'est ce qu'on doit faire au Canada à l'heure actuelle parce que si on veut qu'on compétitionne au niveau international, il faut que toute notre société canadienne enfin apprenne à apprécier

les sciences et la technologie: du fondamental à l'appliqué et à la commercialisation.

REPORTER: Si le programme annoncé par le gouvernement conservateur est mené à terme, des centaines de millions de dollars des contribuables seront versés aux universités afin qu'elles aident le Canada à se mettre au rythme du développement technologique international. Mais l'industrie, elle, entrera-t-elle dans cette danse des dollars technologiques? Ce qu'on peut dire c'est qu'au cours de ces trois jours d'échanges, l'invitation lui a été lancée plus d'une fois. Jean-Guy Paquet, vice-président exécutif de La Laurentienne.

PAQUET: Il faut dire qu'au Canada - et c'est un peu exceptionnel si on compare notre pays aux autres pays de l'O.C.D.E. et aux États-Unis surtout - au Canada, la très grande majorité de la recherche se fait dans les universités et laboratoires gouvernementaux. Très peu de recherche se fait dans le secteur industriel. Il faut faire évoluer ce partage parce qu'avec ce qui s'en vient dans les changements technologiques, il va falloir que l'entreprise et puis l'industrie, le secteur privé, s'intéresse de plus en plus à faire sa propre recherche et que par exemple les multi-nationales qui ont des composantes au Canada demandent à celles-ci de faire la recherche chez nous. Il faut que ça évolue dans ce sens là, autrement on ne peut pas cantonner en 1988 la recherche dans les universités uniquement.

REPORTER: Et l'industrie accuse réception du message. Robert Marchessault de Xerox Canada.

MARCHESSAULT: Je pense qu'après ça l'industrie est surtout intéressée au fait que le gouvernement croit sincèrement que la science et la technologie c'est la base de l'avenir pour le Canada, qu'on ne peut plus se fier du côté ressources, strictement, pour nous donner une certaine qualité de vie. Alors, de ce point de vue là, c'est le réalisme du gouvernement qu'on salue.

REPORTER: Si la grande industrie a les moyens d'investir en recherche et le montre dans certains cas, les petites et les moyennes entreprises, elles, trouvent la marche un peu haute. Aussi faudra-t'il les soutenir, fait remarquer Jean-Guy Paquet de La Laurentienne.

PAQUET: Pour un, moi je pense qu'il va falloir miser sur les P.M.E.. C'est l'avenir. C'est là que le leadership, l'entrepreneurship se manifeste. Au Québec surtout, on a vu depuis quelques années que malgré la crise et peut-être à cause de la crise qu'on a connue en '82, il y a eu un développement considérable des P.M.E.. Il va falloir faire en sorte qu'on puisse en créer d'autres. Les problèmes des P.M.E. c'est qu'elles doivent survivre. Huit sur dix P.M.E. pour toutes sortes de raisons, ce sont souvent des raisons manque de fonds, ne peuvent pas survivre plus que trois ou cinq ans. Si on pouvait les maintenir en vie et les développer, je pense que c'est la voie de l'avenir.

REPORTER: Grâce à des subventions ou grâce à l'implication des grandes entreprises qui souvent, dans d'autres pays, soutiennent les petites entreprises.

PAQUET: Je ne crois pas, ici, qu'on soit rendu au point où la grande entreprise aidera à développer la petite entreprise et ça se fera par programmes conjoints avec l'université, par subventions, par incitations du côté fiscal et ça sera aussi en autant que les gouvernements accorderont une priorité à ces P.M.E. là qui pour survivre, comme pour les grandes entreprises, devront exporter. Tout est axé sur la compétitivité. Il faudra que les produits qu'on aurait sur le marché pour les autres pays soient compétitifs.

REPORTER: Mais une catégorie de petites entreprises, celles vouées au transfert de l'université à l'industrie de technologie très pointue, ont besoin d'un soutien particulier. Elles doivent trouver du capital de risque, parfois auprès de géants financiers qui seront leurs parrains, mais plus souvent grâce à leurs propres comptes de banque et aux programmes gouvernementaux. Mais surtout, elles doivent faire face à des difficultés de gestion et de marketing. Ces petites entreprises, celles qu'on appelle aux États-Unis les «start-ups», sont jugées essentielles au développement technologique du pays et ont beaucoup fait parler d'elles, comme en témoigne Jacques Bernier, lui-même entrepreneur en technologie de pointe et président du Téléport de Montréal.

BERNIER: Dans les panels privés qui se tiennent, on regarde tous les modèles possibles pour aider la jeune entreprise en démarrage à caractère technologique. Plusieurs modèles ont été présentés; que ce soit le modèle de la grande entreprise comme mentor auprès de petites entreprises pour les aider dans leur développement, pour les aider dans leur mise en marché, ou créer un environnement

particulier où se retrouvent des ressources et là on parle pas seulement de ressources financières comme des aides du gouvernement ou des aides de banques ou de capitaux de risque, mais des ressources tandem (?) donc de finances, d'expertise, d'outils et de technologie. Pour ce faire, ce que nous avons créé au Téléport de Montréal ça a été de regrouper sous un même toit ces expertises dans le monde des communications. Nous espérons qu'à partir de cet environnement là nous serons capables de faire générer des nouvelles opportunités, des nouvelles applications de communications.

REPORTER: Est-ce que vous sentez que c'est un courant ça? Qu'il y a vraiment ce souci là de créer des environnements propices pour le développement des petites entreprises?

BERNIER: Effectivement, il y a ce courant qui se met en place par les grandes entreprises. Les très grands qui sont présents ici sont nommés Alcan, Northern Telecom et compagnie, ont effectivement cette volonté profonde d'accomplir une aide aux jeunes entreprises.

REPORTER: Et si les très grands s'impliquent, les observateurs espèrent que ça fera boule-de-neige et que d'autres entreprises emboîteront le pas. Claudette MacKay-Lassonde.

MACKAY: Je pense qu'on a eu un problème dans nos grandes industries dans le passé. Il y en a qui ont souffert. Il y en a quelques unes, par exemple, qui ont rebondi et prennent conscience de l'importance d'intégrer la technologie, l'utilisation

de la technologie, la recherche et le développement dans la stratégie de leurs corporations. Alors, c'est compagnies là, à mon avis, vont réussir et maintenant ce qu'il va falloir faire c'est que les autres qui sont restées un peu en arrière, qu'ils se réveillent, qu'ils déterminent où ils veulent se rendre, qu'ils réalisent qu'ils doivent compétitionner au niveau international et qu'ils aillent de l'avant et considèrent vraiment la technologie comme un allié, comme une ressource indispensable et l'intègrent vraiment dans leurs corporations. Ça va prendre du dynamisme. Ça va prendre l'investissement. Des dollars. C'est absolument essentiel.

REPORTER: Donc, des dollars il y en a ici. Une volonté politique aussi on l'a bien vue ici. Qu'est-ce qu'il faut qui se produise maintenant dans les prochains mois et les prochaines années pour que cette volonté là descende au niveau du chercheur, qui lui a plus de ressources pour bien ses recherches.

MACKAY: Je pense que c'est toute une ... On parle d'un changement dans notre culture. On parle d'un besoin de visionnaire au niveau des exécutifs de corporations et puis ce genre de culture là, cette conscience de l'importance de la technologie, de la recherche, de la science, du génie, devra filtrer à travers les corporations. Il va falloir être capable de prendre plus de risques. Ça veut dire subventionner des chercheurs, ne sachant pas toujours s'ils vont réussir ou pas; accepter que certaines des recherches vont conduire à rien. On va avoir des déceptions. Sans pénaliser ces chercheurs. Il va falloir être vivant, dynamique et que ça commence maintenant.

CBOF:

C'était un reportage de Jean Lalonde à la Conférence nationale sur la technologie et l'innovation à Toronto.

que la recherche scientifique et le progrès technologique sont les fondements de notre prospérité et de notre qualité de vie.

REPORTER: Traditionnellement, le scénario des conférences scientifiques au Canada est toujours le même. Tout le monde se renvoie la balle au sujet de notre retard sur la scène mondiale. Quelle fut donc notre surprise cette semaine à Toronto. Non seulement le scénario traditionnel ne s'est pas reproduit, mais on avait l'impression d'assister au travail d'une classe studieuse, tout à l'écoute d'un professeur qui avait de bonnes nouvelles.

MULRONEY: J'annonce aujourd'hui que le gouvernement fédéral affectera au cours des cinq prochaines années des fonds supplémentaires de 1,3 milliards de dollars au financement de diverses initiatives fédérales, dans le domaine des sciences et de la technologie...

REPORTER: Comment expliquer cette belle mais soudaine harmonie entre le gouvernement, l'industrie et les universités? Par la proximité du vingt-et-unième siècle, croyons-nous. L'échéance de l'an 2,000 et le défi technologique et scientifique à relever ont fait se serrer les ventes.

Le Premier ministre a parlé d'une nouvelle culture scientifique canadienne. Est-ce que ce sont juste des mots ou dans les ateliers, vous sentez qu'il se passe quelque chose?

MICHELINE BOUCHARD:
(Vice-prés.,
Le groupe CGI)

On sent définitivement qu'il se passe quelque chose. Il y a consciencisation(sic) qui se fait. Un consensus même sur les problèmes, les solutions à adopter...

REPORTER:

Le message de la conférence a été clair. Il faut que le Canada se mette à l'heure de la science. On n'a pas le choix.

ROBERT COTRET:

Quand on regarde le siècle qui va commencer, on se réalise qu'on pourra pas toujours se fier à nos ressources naturelles. On va être obligés de... de se lancer beaucoup plus dans la transformation de nos matières premières et puis, pour se faire, on va être obligés de développer des nouvelles technologies. Maintenant au Canada, avec une population de 25 millions, avec un accès... bien maintenant avec le libre échange, un accès à un marché plus grand - on va être obligés de se spécialiser.

REPORTER:

Fini le défaitisme, les plaintes et les accusations donc, place à l'ambition et à la stratégie.

JEAN-GUY PAQUET:
(Vice-prés.
exécutif, la
Laurentienne)

Il va falloir que dans la gestion des entreprises, que ce soit des entreprises financières, que ce soit des entreprises du côté de l'industrie - qu'on fasse en sorte que la recherche, que l'innovation fasse partie du processus normal de management, de gestion de l'entreprise. On ne

peut plus considérer la recherche et le développement ou l'innovation comme quelque chose de parallèle. Il faut intégrer ça dans nos vrais processus d'éjection, que ce soit dans la petite, la moyenne ou la grande entreprise. Et c'est... c'est la voie de l'avenir.

PIERRE BÉLANGER: (Doyen, Univ. McGill) Les universités, dans le processus de développement économique, jouent un rôle d'appui seulement. Mais c'est pas le rôle principal. C'est-à-dire les acteurs principaux, ce sont vraiment les industriels.

ROLAND DORÉ: (Dir., École Polytechnique de Montréal) Qu'on doit... on doit faire preuve de sagesse, les universitaires parce qu'on n'a pas toujours... parce qu'on n'a pas toujours la sagesse et ce qu'on n'a pas toujours fait dans le passé. Mais quand même, c'est d'essayer de... de regrouper les forces pan-canadiennes dans un certain domaine pour travailler sur un secteur qui est identifié comme un secteur qu'on a développé dans un centre d'excellence.

REPORTER: Cette conférence rassemblait tout le grappin(?) politique, scientifique et industriel du pays - donc des gens bien trop importants ou trop brillants pour être ducs ou pour se raconter des histoires. L'enthousiasme n'a donc pas diminué les défis à relever, surtout celui considéré comme le numéro un par les participants - l'éducation, la formation.

RITA DIONNE- MARSOLAIS: (Vice-prés., Information, Ass.nucléaire canadienne) Il est certain que des industriels ont commencé à prendre l'initiative de la formation du personnel pour leurs propres fins. Vous pensez par exemple à l'Alcan. On en parlait hier soir. L'Alcan a quand même été la compagnie qui a créé de toutes pièces, financé, développé l'École internationale de gestion à Genève. Pensez à ce que Northern Telecom nous mentionnait tout à l'heure - où est-ce qu'ils entraînent quelque chose comme 300,000 personnes pour les former graduellement, pour répondre à leurs besoins. Donc en quelque sorte, l'industrie est après établir ses propres règles de formation puisque le système éducatif ne semble pas assurer la transition vers une... un système de production et un système de gestion qui a profondément changé depuis 25 ans.

REPORTER: Il se passe indéniablement quelque chose dans le monde scientifique canadien. La conférence de Toronto en est la preuve et les conséquences de ce changement seront majeures sur nos industries, nos écoles, mais surtout sur notre façon de penser.

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PROGRAM: CBO MORNING EMISSION:	DATE: JANUARY 22, 1988 DATE:
NETWORK / STATION: RESEAU / STATION: CBC/CBO	TIME: HEURE: 6:44 AM

R&D FUNDING FOR SCIENCE INDUSTRIES

CBC: Last week Prime Minister Brian Mulroney announced 1.3 billion dollars in federal spending over the next five years for research and development. But the Prime Minister also issued a warning to industry. He says business cannot rely solely on the government for funding.

MULRONEY: Part of the culture, quote, unquote, in Canada, is that if it doesn't come from a cheque from the federal government it doesn't exist. Nothing could be further from the truth. All Ottawa's been doing is spending your borrowed money, and putting a mortgage on the backs of your kids and their kids. Real investment comes from the investment of real dollars in real projects, not borrowed money. And it involves creating a climate, not a facile thought that simply the government enhancing its spending is going to solve the problem. It's going to create the problem.

CBC: In 1985/86, the government spent 493 million dollars in research grants to industry, 78 million of that here

in Ottawa. Spar Aerospace is one company that has benefited from government funding, for work on the U.S. space station, and on the space shuttle. Christopher Trump is the vice-president of corporate affairs for the company. Good morning Mr. Trump.

TRUMP: Good morning.

CBC: Why do you think the Prime Minister made those comments last week?

TRUMP: Well, I think in some respects he was absolutely right. I think there has to be a turn... or a change in the climate, the word that he used, in terms of where real wealth is, and it's something that one can talk about philosophically. It's amazing how many people I talk to who believe that crown corporations are a wonderful thing because they're ours. They aren't. They're really millstones around our necks, and I think that private industry too has to look to a way in which their investment... We're in business to make a profit. Otherwise, everything else that we say would be meaningless. But I think too, if I could be critical, a bit, the climate has to be nurtured by government, and this government did away with a research credit tax law. Now that was something which made it possible, that is by reducing the taxes on funding spent by industry on research, and you know, plans are made on that basis. It was passed by the previous government. It was a rather flawed legislation. Every get rich quick artist around seemed to get in the act, and it was cancelled. So that makes, you know, it very difficult then, if there

is no consistency to the climate, if you will, the direction of the wind, for industry to plan. But all of that aside, the fact is that industry must also look to, you know, research programs on its own, and I think the Canadarm is a classic example.

CBC: Well I was just going to ask if we could get into some practicalities, because aside from tax credits, of course, there are a lot of direct government grants. How much funding has Spar received for the space station, or for Canadarm?

TRUMP: Well, the space station over ten years is 800 million dollars, and by latest count some 25 million dollars has been invested in the space program. And that is not just Spar, that is the space station team, as it were, some six companies from coast to coast that's involved in that. So it's been a rather modest... and in fact programs like that tend to be like a bell curve. They start modestly and then have an enormous spending towards the middle, and then taper off as the project is completed.

CBC: What proportion of that money is that for your business?

TRUMP: That's not very much. I mean, at the moment the space station would represent probably 20 percent of our effort, and we're involved in building Canada's next generation of satellites, we're involved in the electro-optics for U.S. and Canadian Navies. We're involved in earth stations. We're building a big one in

Liberia at the moment, and that is not tax dollars, I might add, that is the Liberian government. And in Indonesia. So that we have a number of operations that are at work that go beyond the space program, but there is no question that once the space station moves into high gear that will be our big ticket item.

CBC: Mr. Trump, could you get that money from the private sector?

TRUMP: No.

CBC: Why not?

TRUMP: There's no way that... would you part with money to invest in a space station that might not give you any return? I think that everyone who says let industry invest in that, ask yourself, would you invest in it. And it's interesting, yesterday I was on another program and a grandmother with eight children called in and the announcer asked, would you pay more taxes for the space station? It's interesting that she said yes, she would, for the sake of her eight grandchildren, and I think that was coming from someone who's not in the business, a very telling comment.

CBC: If, though, private investors would not be prepared to put up that money and part with it, as you mentioned, why would taxpayers? What's the benefit for us?

TRUMP: The answer that she gave was that space is the future and it is a way in which the nations of the world, the U.S., the Soviet Union, China, Japan, fourteen European nations, and Canada, demonstrate their technological prowess, their ability to compete in a very sophisticated arena, which happens also to be highly visible. And that is an investment in the future, and I think that the Canadarm, no amount of money this government spent and it's 30 billion dollars a year in advertising, could have given this country the return that that one piece of technology gave us.

CBC: Could you put that into perspective. What practical applications to industry does that research have?

TRUMP: Well, take the Canadarm. A hundred million dollars of taxpayers money. It figures out to four dollars, over eight years, to every man, woman and child in Canada. That's what it cost. It has been returned to earth now with industry money, not government money. For Ontario Hydro a device based on that technology to retube the Candu reactors, making the job quicker, and also safer. We have developed a machine for Inco to make safer and more productive, deep hard rock mining. We have moved this country into an area, robotics and artificial intelligence that we would otherwise not be into. That's a net gain, mind you.

CBC: Mr. Trump, thank you very much.

TRUMP: Good to be with you Heather.

CBC: Good morning. Christopher Trump is the vice-president of corporate affairs at Spar Aerospace.

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LOBBY FOR MORE R&D FUNDING

CBC: A group of scientists, professors and students is in town this week to press the government to spend more money on research and development. The group says it is a must if Canada hopes to be competitive in world markets. As David McKay(?) reports these people are part of the national consortium of scientific and educational societies.

REPORTER: The National Coalition of Researchers and Educational Societies represents researchers, university teachers and students. Every year its members blitz Parliament Hill to convince MPs to spend more money on research and development. But they say this campaign is different from past efforts. That's because the government recently announced it would spend 1.3 billion dollars over the next five years on R & D. Some of the money would go to so-called Centers of Excellence, to be housed on university campuses, and scholarship programs. The government has yet to announce how the rest of the money will be spent. And that's where the lobby effort comes in. Dr. John Evans is president of the Canadian Association of University Teachers,

and he says parliamentarians must spend the money earmarked for R & D wisely.

EVANS: What we want to say that they haven't heard before, look, the money's there, it must be spent properly and if... to the government side of parliamentarians if they think that the country and the researchers are going to believe what they say, we must see some real expenditures before the next election.

REPORTER: If this doesn't happen, warns Dr. Evans, Canada's economy will suffer in a market that prizes intellectual information. David McKay, CBC News, Ottawa.

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