Minister of State
Science and Technology

CANADA

Ministre d'État
Sciences et Technologie

SUPPORT FOR NSERC FIVE-YEAR PLAN FROM UNIVERSITIES AND INDUSTRY

APPUI DES UNIVERSITES ET DE L'INDUSTRIE AU PLAN QUINQUENNAL DU CRSNG

Canada

SUPPORT FOR NSERC FIVE-YEAR PLAN FROM UNIVERSITIES AND INDUSTRY

APPUI DES UNIVERSITES ET DE L'INDUSTRIE AU PLAN QUINQUENNAL DU CRSNG

List 1

SUPPORT OF NSERC'S SECOND FIVE-YEAR PLAN
(From INDUSTRY)

Guy Arbour
Association canadienne-française
pour l'avancement des sciences

David E.P. Armour
Electrical and Electronic
Manufacturers Association of Canada

Roy a. Carr
POS Pilot Plant Corporation

A.R. Chadsey
George Weston Limited

L.D. Clarke
Spar Aerospace Limited

Kenneth B. Copeland
Digital Equipment of Canada Limited

Michael C.J. Cowpland
Mitel Corporation

S.S. Dewan
Inverpower Controls Ltd.

Garry Dool
DY-4 Systems Inc.

C.G. Hanna
Canadian Association of Physicists

Lionel Hurtubise
Ontario Centre for Microelectronics

W.F. Light
Northern Telecom Limited

J.P. McGeer
Alcan International Ltd.
Kingston Laboratories

R.E. Morgan
Saskatchewan Wheat POOL

Michael U. Potter
Cognos Incorporated

J.A. Roth
Bell Northern Research Limited

H.C. Rowlinson
C-I-L Inc.

J. Laurent Thibault
The Canadian Manufacturers' Association

QUOTES FROM LETTERS TO GOVERNMENT IN SUPPORT OF NSERC FIVE-YEAR PLAN

"Au Canada, le CRSNG est le pivot du soutien à la recherche universitaire dans les sciences naturelles et le génie. Parmi les agences gouvernementales de financement de la rechereche, il est perçu au Canada et à l'étranger comme un modèle d'efficacité. Une réduction de ses ressources entrerait en contradiction avec votre politique scientitifique."

Guy Arbour
Directeur général
Association canadienne-française pour l'avancement des sciences

February 4, 1985 (Hon. Tom Siddon)

"... one of the most effective actions that could be taken right now is to protect that funding which allows the Natural Sciences and Engineering Research Council (NSERC) to plant so many research seeds in universities."

"I am happy to tell you that R & D expenditures among EEMAC's members has been growing in recent years and is now in the region of 5% of gross revenues. While certainly the result of many factors, there can be no doubt that the investigative environment made possible by NSERC's grants has played a part."

David E.P. Armour
President
Electrical and Electronic Manufacturers Association of Canada

February 12, 1985 (Hon. Tom Siddon)
cc Hon. Michael Wilson
Hon. Sinclair Stevens

"It has been my experience that the NSERC program has been an excellent vehicle for funding university research and developing a synergistic relationship between universities and the private sector."

"May I please request your assistance in obtaining sufficient support for the NSERC program."

Roy A. Carr
President
POS Pilot Plant Corporation

July 2, 1985 (Hon. Tom Siddon)

"... the Weston R&D posture (via DIVERSIFIED RESEARCH LABORATORIES LTD.) is very much in support of NSERC activities."

"There can be no question of the importance to Canada of the proposed NSERC second five-year plan. Please don't hesitate to call if there is some way in which we can add our support to your efforts."

A. R. Chadsey
Manager
Corporate Services
George Weston Limited
June 14, 1985 (Hon. Tom Siddon)

"The future economic well being of Canada requires that we build on our strengths. One of our greatest strengths is the outstanding quality of the graduates from our universities. The capabilities of these graduates has gone far to compensate for the many other difficulties which Canadian enterprises face, such as limited domestic markets and high labour costs.

L.D. Clarke
Chairman of the Board and
Chief Executive Officer
Spar Aerospace Limited
August 29, 1985 (Rt. Hon. Brian Mulroney)
cc Hon. Walter McLean, Hon. Tom Siddon, Hon. Sinclair Stevens, Hon. Michael Wilson

"In our opinion, universities are a key resource that we must use to foster future expansion of high technology industries."

"... we see the work of the National Sciences and Engineering Research Council of Canada as a key initiative in ensuring that the best work in science and engineering across all Canadian universities is identified and provided with a level of funding."

Kenneth B. Copeland
President
Digital Equipment of
Canada Limited
March 8, 1985 (Hon. Tom Siddon)

"As Chairman of Mitel Corporation I would like to fully support the proposed NSERC 5 year program."

"The NSERC program is one of the key programs that stimulate industry-university interaction."

Michael C.J. Cowpland
Chairman of the Board
Mitel Corporation
February 12, 1985 (Hon. Tom Siddon)

"In my view, nothing would pay off better for Canada in terms of technical innovation and high quality job creation, than the support of both NSERC and NRC, with special emphasis on joint R & D in engineering, between universities and companies."

S.B. Dewan
President
Inverpower Controls Ltd.
March 7, 1985 (Hon. Tom Siddon)
(Rt. Hon. Brian Mulroney, Hon. F. MacDonald, Hon. R. de Cotret, Hon. M. Wilson, Hon. S. Stevens)

"... the NSERC program is providing a valuable state-of-the-art training environment for the future employees of high technology companies."

"We strongly recommend that NSERC funding be continued and wish to stress the importance of this program to the future success of our VMEbus products in North America and world markets."

Garry Dool
President
DY-4 Systems Inc.
March 7, 1985 (Hon. Tom Siddon)

"The dependence of manpower training on the whole spectrum of research activities, from basic research to industrial R&D, is well recognized by NSERC, and we are very concerned that any delay in implementing NSERC's Five-Year Plan will mean, effectively, a reduction of NSERC support at the very time when an increase is urgently needed to "complete the bridge to the 90's"."

C.G. Hanna
President
Canadian Association of Physicists
June 26, 1985 (Hon. Tom Siddon)

"NSERC's programs are of vital importance to the developing Canadian microelectronics industry, and to systems and equipment producers who need to use advanced microelectronics in order to obtain a sustaining world market share."

Lionel Hurtubise
President
Ontario Centre for Microelectronics
February 26, 1985 (Hon. Tom Siddon)

"... the speedy implementation for the NSERC second Five-Year Plan would be a positive step in this direction."

W.F. Light
Retired Chairman
Northern Telecom Limited

July 15, 1985 (Hon. Tom Siddon,
Hon. M. Wilson, Hon. S. Stevens, Hon. F. MacDonald)
cc Hon. Erik Nielsen

"The purpose of this letter is to indicate to you the value to Alcan, and we believe to Canadian industry in general, of the Natural Sciences and Engineering Research Council of Canada programs. We believe that they are one of the most effective ways for the government to foster:

a) Increasing contact and cooperation between universities and industry.

b) Development of skilled help to brighten Canada's technological future."

J.P. McGeer
Director
Alcan International Ltd.
Kingston Laboratories

January 29,1985 (Hon. Tom Siddon)

"NSERC fills a very important function in providing funds to public institutions for such research and training of staff."

"I strongly urge the maximum possible funds be provided to NSERC over the next five years to ensure that training and employment of valuable research people continues and that they remain in Canada."

R.E. Morgan
Manager
Product Development
Saskatchewan Wheat POOL

August 1, 1985 (Hon. Tom Siddon)

"With the support of NSERC and NRC, Cognos will introduce important new products in advanced computer languages and expert systems in 1988. These products will generate $15 to $30 million in incremental revenue and 100 to 200 new jobs in Canada per year."

Michael U. Potter
President
Cognos Incorporated

February 14, 1985 (Hon. Tom Siddon)

"NSERC is a necessary ingredient in fostering the industry-government-university liaison that is essential as we enter the Information Age. I strongly urge you to continue your support to the NSERC program."

J.A. Roth
President
Bell Northern
Research Limited

March 4, 1985 (Hon. Tom Siddon)

"In this situation, it is difficult to support a doubling of budget for any group. What I would support is an improved proportion of your government's R&D "envelope" going to NSERC, primarily at the expense of in-house research and other granting programs which are not nearly so highly thought of in terms of either effectiveness or good management."

H.C. Rowlinson
Vice-President
Research and Technology
C-I-L Inc.

July 29, 185 (Rt. Hon. Brian Mulroney, Hon. Tom Siddon)

"We believe that NSERC is influencing universities to move in the direction of meeting industry needs for graduates and for research that will improve the productivity and competitiveness of Canadian Manufacturers.

J. Laurent Thibault
President and
Executive Director
The Canadian Manufacturers'
Association

June 11, 1985 (Hon. Flora MacDonald)

List 2

SUPPORT OF NSERC'S SECOND FIVE-YEAR PLAN
(From INDUSTRY)

Sebastien Allard
Conseil du patronat du Québec

W.A. Cochrane
Connaught Laboratories Ltd.

Armand Couture
Shawinigan Lavalin Inc.

Roger Hamel
Canadian Chamber of Commerce

Bernard Lamarre
Lavalin Inc.

Claude F. Lefebvre
Gendron Lefebvre Consultants

Pierre Mantha
Price Waterhouse

Jack V. Masterman
Mutual Life of Canada

G.M. McKinnon
CAE Electronics Ltd.

François P. Paradis
Chambre de Commerce du Québec

Richard Marquis
CANTHERM

Frank D. Smith
NORDCO Limited

Pieter van Kempen
Systèmes d'informatique PHILIPS

J.V. Raymond Cyr
Bell Canada

QUOTES FROM LETTERS FROM INDUSTRY TO GOVERNMENT
IN SUPPORT OF NSERC FIVE-YEAR PLAN

"In my opinion, the document is well researched and prepared and addresses areas of valid concern particularly with respect to developing industry/university collaboration. The potential future shortage of qualified researchers sould not be ignored. For these reasons, the proposed budget increases are easily justified."

From:

G.M. McKinnon
Director R&D
CAE Electronics Ltd.
and Adjunct Professor
Concordia University

September 9, 1985 To: Hon. Tom Siddon

"Cet ensemble de programmes d'aide à la recherche universityaire en sciences naturelles et en génie et à la rechereche et au développement coopératif (universités-industries) est opportun pour diminuer la dépendance du Canada à l'égard des richesses naturelles et de porter l'accent sur le développement des capacités intellectuelles."

"Veuillez donc enregistrer notre appui au plan que vous a soumis le CRSNG"

From:

François P. Paradis
Président
Chambre de Commerce
du Québec

September 13, 1985 To: Hon. Tom Siddon

"Le groupe Gendron Lefebvre veut apporter son appui au "deuxième plan quinquennal du CRSNG". Il y accorde d'autant plus d'importance que la coopération avec l'industrie est fortement encouragée dans ce plan."

"Nous croyons prioritaire de fournir aux universités canadiennes les moyens financiers leur permettant de former adéquatement les savants des quinze prochaines années."

From:

Claude F. Lefebvre
Président
Gendron Lefebvre Consultants

September 9, 1985 To: Hon. Tom Siddon

"Nous sommes bien conscients par ailleurs que nous traversons une période économique difficile et que les dépenses gouvernementales doivent être réduites au maximum. Cet objectif de réduction des dépenses gouvernementales nous oblige donc à faire des choix: nous croyons cependant que personne ne fera grief à un gouvernement d'investir raisonnablement dans son avenir, dans l'essence même de son développement futur, à savoir la recherche, ce que nous propose le plan quinquennal du CRSNG."

From:

Sébastien Allard
Président
Conseil du patronat du Québec

September 6, 1985 To: Hon. Tom Siddon

"Nous sommes évidemment tous conscients de la situation économique difficile au pays. Il n'en demeure pas moins cependant que le Canada accuse un retard sérieux par rapport à d'autres pays industrialisés dans sa capacité de recherche et de développement et que des gestes concrets doivent être posés pour corriger cette situation."

From:

Pieter van Kempen
Président du conseil et
chef de la direction
Systèmes d'informatique
Philips

September 4, 1985 To: Hon. Tom Siddon

"The health and vitality of Canada's universities -- particularly its research-intensive universities -- is of vital importance to the country's economic future. Their needs must be given high priority as your government considers plans for the economic renewal of the country."

From:

Jack V. Masterman
President and
Chief Executive Officer
Mutual Life of Canada

September 3, 1985 To: Rt. Hon. Brian Mulroney

"... nous considérons que les objectifs du Centre sont raisonnables et nous désirons vous informer de notre appui complet au deuxième plan quinquennal du Conseil."

"Nous sommes particulièrement heureux de la proposition du Conseil d'élargir les programmes de subventions thématiques et les programmes conjoints Universités-industrie."

From:

Armand Couture
Président
Shawinigan Lavalin Inc.

Septembre 11, 1985 To: Hon. Tom Siddon

"A titre de citoyens et en qualité de professionnels en relations constantes avec les universités, les milieux de l'industrie et le monde des affaires, nous considérons comme un devoir strict d'appuyer le deuxième plan quinquennal du Conseil de recherches en sciences naturelles et en génie (CRSNG) du Canada."

From:

Pierre Mantha
Associé directeur général
Price Waterhouse

September 12, 1985 To: Hon. Tom Siddon

"In my opinion, the NSERC's second five-year plan supports this view, as well as that expressed during the meeting in Calgary of the ministers responsible for science and technology."

"I believe that the NSERC's second five-year plan is essential to the development of a future national policy on science and technology as stated in the joint press release issued at the conference in Calgary."

"I am well aware that the government's financial resources are limited. Nevertheless, as you know, the investments called for by the NSERC's second five-year plan will without a doubt create jobs and boost the efficiency of Canadian companies, which face increasingly stiff foreign competition. In this respect, we should never forget the vital link between R&D, innovation and economic growth."

From:

Bernard Lamarre
Chairman and Chief Executive
Lavalin Inc.

September 18, 1985 To: Hon. Tom Siddon

"NSERC has been very important to NORDCO, allowing us to take advantage of our local University's resources to a mutual advantage."

"You can rest assured that I have in the past and will continue to express my strong support for NSERC's activities and commit to increasing my efforts during this crucial funding review period."

From:

Frank D. Smith
President and
Chief Executive Officer
NORDCO Limited

September 18, 1985 To: G.M. MacNabb

"We believe that within the limits imposed by the existing budgetary constraints, university funding should be recognized as a priority area."

"... the development of scientific research and development at the universities must be supported at a very high level. The apparent short-term savings that might accrue through continued underfinancing would be offset by the tragedy that would almost inevitably follow."

From:

Roger Hamel
President
Canadian Chamber of Commerce

August 13, 1985 To: Hon. Tom Siddon
cc Hon. Walter McLean
Hon. Sinclair Stevens
Hon. Michael Wilson

"I totally support their emphasis regarding NSERC's activity and sincerely hope that you and your Government will continue to foster enhanced support for universities as well as the promotion of increased industrial/university co-operation."

From:

W.A. Cochrane
Chairman and Chief Executive
Connaught Laboratories Ltd.

Augutst 26, 1985 To: Rt. Hon. Brian Mulroney

"NSERC has what appears to be a program offering a definitive compromise. The NSERC's University-Industry Program in which our firm is participating, gives the responsibility for action and decision making to those who are best equiped."

The university benefits by allowing their researchers to experience the practical limitations that they will face in commercial R&D. The firm benefits by having access to research which it could not afford to undertake or which it would have been unable to properly direct."

If this program is indicative of the caliber of thought and creativity throughout the NSERC, then our firm looks forward to the implimentation of other such programs, not only for reasons of potential financial gain, but also for the short and long term benefits which will accrue for Canada."

From:

Richard Marquis
General Manager
CANTHERM

September 20, 1985

To: Rt. Hon. Brian Mulroney
cc Hon. Erik Nielsen
Hon. Robert de Cotret
Hon. Sinclair Stevens
Hon. Michael Wilson
Hon. Tom Siddon

"In my role as Chief Executive Officer of Bell Canada, I can see that the continuing success and international competitiveness of our high-tech industries will depend in large measure on the calibre of both the teaching and research undertaken in our universities. I therefore urge you and your colleagues in Government to consider carefully and to support the recommendations made in the recently tabled 5-year university financing plan prepared by the Natural Sciences and Engineering Research Council, NSERC."

From:

J.V. Raymond Cyr
Bell Canada

September 23, 1985

To: Rt. Hon. Brian Mulroney

SUPPORT OF NSERC FIVE-YEAR PLAN

FROM INDUSTRY

PRATT & WHITNEY CANADA

Pratt & Whitney Canada Inc.

Box 10
Longueuil, Québec J4K 4X9
514/647-3770

Elvie L. Smith
Chairman of the Board

1 October 1985

The Honourable Thomas Edward Siddon
Minister of Science and Technology
Government of Canada
House of Commons
Parliament Buildings
Wellington Street
Ottawa, Ont. k1A 0A6

Dear Tom,

I thought you would be interested in receiving a copy of a letter I wrote to Mr. G.M. MacNabb, President of the Natural Sciences and Engineering Research Council Canada, in regard to that organization's Five-Year Plan.

Yours truly,

Elvie L. Smith

cn
encl.

PRATT & WHITNEY CANADA

Pratt & Whitney Canada Inc.

Box 10
Longueuil, Québec J4K 4X9
514/647-3770

Elvie L. Smith
Chairman of the Board

30 September 1985

Mr. G.M. MacNabb
President
Natural Sciences and Engineering
Research Council Canada
200 Kent Street
Ottawa, Ontario K1A 1H5

Dear Sir,

Thank you for your letter of September 20, 1985 to Mr. Lewis H. Chow regarding the Natural Sciences and Engineering Research Council's (NSERC) Five-Year Plan entitled "Completing the Bridge to the 90's".

Pratt & Whitney Canada has been interested in the work of NSERC for many years and we recommend approval of funding for this follow-on Plan.

As Canada's second largest spender in R&D (in 1985 our R&D expenditures will be about $200 million) and with an engineering department of over 2,000 people, we are keenly interested in NSERC's proposed plan to improve the quality and quantity of engineering and science graduates and to improve links between university researchers and industry.

We believe that the issue is one of Canadians doing the required and relevant basic research, not of government establishments doing applied research, which, strongly feel needs to be transferred much more to industry. Regarding Canada being import-dependent for research talent, we believe this situation could be greatly improved if the recommendations of The Canadian Manufacturers' Association were adopted to permit Canadian universities to grant Ph.D.'s in a three-year program after a B.Sc. Finally, we agree with The Canadian Manufacturers' Association that NSERC could further improve its effectiveness and improve its ties with industry by increasing industry representation on its committees; the current committees now show a disproportionate number of government and academic representatives on them.

We look forward to seeing your next five-year plan approved.

Yours sincerely,

E.L. Smith

Elvie L. Smith

cn

COPY

Blachford

MAKERS OF
INDUSTRIAL PRODUCTS

H. L. BLACHFORD, LTD./LTÉE

2323 Royal Windsor Drive, Mississauga, Ontario, Canada L5J 1K5
Telephone 416-823-3200 Telex 06-982441

October 3, 1985

Mr. G. M. MacNabb,
President,
Natural Sciences and Engineering
Research Council Canada,
200 Kent Street,
OTTAWA, Ontario
K1A 1H5

Dear Mr. MacNabb,

Thank you for your letter of September 20, 1985 asking for my opinion on NSERC's new Five-Year Plan.

I am the president of a highly diversified company with sales of only $20 million and so I am not in a good position to judge the Plan.

Before commenting on the Plan itself, it may interest you to know that we are one of only three or four remaining small, Canadian-owned chemical companies. This is a disturbing fact in itself and the reasons for it are many. I certainly hope that the work NSERC is doing will help lead to the creation of more small Canadian-owned chemical companies. Incidentally, free trade between Canada and the U.S.A. would eventually result in the formation of more Canadian chemical companies because of the enormous increase in potential markets for Canadian-made products.

Here are my comments on the Plan:

- Promote university/industry relations even more than you intend to do.
- Do more to focus support on specific areas of science and technology, but without picking winner and loser industries.
- Don't establish any more government laboratories.
- Spend more on supporting academic and industrial laboratories and less on government laboratories.

..../2

- Do even more to attract Canadians into graduate school. It will help if you would persuade more universities to accept the obtaining of a Ph.D. degree in three years after receiving a B.Sc. and without having to obtain a M.Sc.

Yours sincerely,

JB/c

John Blachford,
President.

P.S. Enclosed is a brochure on our Company.

cc: Ministers on attached list.

The Right Honourable Brian Mulroney, P.C., M.P.
Prime Minister of Canada
Centre Block, Room 309-S
House of Commons
Ottawa, Ontario
K1A 0A2

The Honourable Erik Nielsen, P.C., Q.C., M.P.
Deputy Prime Minister and
Minister of National Defence
Centre Block, Room 209-S
House of Commons
Ottawa, Ontario
K1A 0A6

The Honourable Robert R. de Côtret, P.C., M.P.
President of the Treasury Board
Place Bell Canada
160 Elgin Street
22nd Floor West
Ottawa, Ontario
K1A 0R5

The Honourable Thomas Edward Siddon, P.C., M.P.
Minister of State for Science and Technology
235 Queen Street
8th Floor West
Ottawa, Ontario
K1A 1A1

The Honourable Sinclair Stevens, P.C., Q.C., M.P.
Minister of Regional Industrial Expansion
Centre Block, Room 426-N
House of Commons
Ottawa, Ontario
K1A 0A6

The Honourable Michael H. Wilson, P.C., M.P.
Minister of Finance
Place Bell Canada
160 Elgin Street
27th Floor North
Ottawa, Ontario
K1A 0G5

Canadian Electrical Association
Association canadienne de l'électricité

Wallace S. Read
President,
Suite 580, 1 Westmount Square,
Montréal, P.Q. H3Z 2P9
Tel. (514) 937-6181
Telex: 05-267401

Representing Canada's Electric Utilities.
Porte-parole des services publics d'électricité au Canada

September 26, 1985

Mr. G.M. MacNabb
President
Natural Sciences and Engineering
Research Council Canada
200 Kent Street
Ottawa, Canada
K1A 1H5

Dear Gordon:

Thank you for your letter and the attachments describing NSERC's five-year plan.

While we support the ideas behind increasing NSERC's budget to improve and upgrade university research, we would like to bring up two points that might be worth exploring.

The first is the establishment of "Centres of Excellence" within the university community for specific areas of research. This could reduce expenditure on duplicating specialized equipment and talent within the university community and provide identifiable places in academe that industry could turn to for expertise. Researchers and graduates from such centres would be the main route for the application of new technologies in industry.

The second point is the possibility of attracting industry to support university research through either direct contract research or through the centres of excellence as above. The advantages of such a system would be to reduce the dependence of academe on strict government funding and to make them more accountable for the research that they undertake.

I trust that the above could be explored within the context of NSERC's current goals. With all best wishes for successful consideration of your plan.

Yours sincerely,

CANADIAN ELECTRICAL ASSOCIATION

Wallace S. Read

WSR/ml

J.V. Raymond Cyr
Chairman and
Chief Executive Officer

Bell Canada
1050, côte du Beaver Hall
Montréal (Québec) H2Z 1S4
(514) 870-2914

MacNabb
Julien
Brochu
Kavanagh
Halliwell

Bell

1985 09 23

The Right Honourable Brian Mulroney, P.C., M.P.
Prime Minister of Canada
House of Commons
Centre Block, Room 309-S
Ottawa, Ontario
K1A 0A6

Dear Mr. Prime Minister:

Amongst the many pressures and priorities with which you and your colleagues in the Cabinet and the Provincial Governments are wrestling, I am sure the mechanisms for financing higher education are assigned considerable importance.

As Chairman of a recent Task Force of the Corporate-Higher Education Forum (gathering together the Chief Executive Officers of major private sector firms and universities across the country), I have had the opportunity to study this problem, particularly as it affects the funding of university research, in considerable depth.

The industrial participants in this Task Force have, as a result of this work, initiated a number of measures which should lead to substantial improvements in the vital interaction between the universities and the private sector. A comprehensive report on the Forum's work in this regard will be published in early October, and I will be pleased to forward a copy for your information.

In my role as Chief Executive Officer of Bell Canada, I can see that the continuing success and international competitiveness of our high-tech industries will depend in large measure on the calibre of both the teaching and research undertaken in our universities. I therefore urge you and your colleagues

in Government to consider carefully and to support the recommendations made in the recently tabled 5-year university financing plan prepared by the Natural Sciences and Engineering Research Council, NSERC.

More detailed views and recommendations on this subject will be presented to the Standing Senate Committee on National Finance by the Corporate-Higher Education Forum in due course.

Yours sincerely,

J. V. R. Cyr

Chairman and
Chief Executive Officer

AIR CANADA PLACE AIR CANADA, MONTRÉAL, CANADA H2Z 1X5

PIERRE J. JEANNIOT
PRESIDENT AND CHIEF EXECUTIVE OFFICER
PRÉSIDENT - DIRECTEUR GÉNÉRAL

September 20, 1985

Mr. G.M. MacNabb
President
Natural Sciences and Engineering
Research Council Canada
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Mr. MacNabb:

Thank you for your letter of August 30th, along with the copies of the recently published Five-Year Plan.

We are certainly very supportive of any initiatives taken to bring about more cooperation between University and Industry. I congratulate you on the progress NSERC has made in this area. This country needs the support and full cooperation of all three sectors, industry, universities and government to remain competitive in the new global environment we are facing these days.

We are also very much aware of the need for support in the science and technology areas in this country and the vital role NSERC plays. We will certainly make our views known as appropriate.

Wishing you much success in your endeavours.

Yours sincerely,

cc: Ms. A. Bodnarchuk, Vice President, Computer & Services
Montreal 241

2369

CANADIAN THERMOSTATS AND CONTROL DEVICES LTD.
8415 MOUNTAIN SIGHTS AVENUE, MONTREAL, QUEBEC H4P 2B8
TELEPHONE (514) 739-3274
TELEX NO. 05- 825619

September 20,1985

The Right Honourable Brian Mulroney, P.C, M.P
Prime Minister of Canada
Centre Block, Room 309-S
House of Commons,
Ottawa, Ontario
K1A 0A2

Dear Mr.Prime Minister,

The love affair with high-technology is over. Both industry and government are loøsing their blinding passions and starting to learn how to live on a day-to-day basis with this once ethereal mistress which has now become an essential part of our everyday lives.

During the 60's and 70's, industry and government invested heavily in this area without proper understanding of the ramifications. Industries were, for the most part, outside of their areas of expertise, and found control and planning were impossible. Corporations could not manage, because they were intimidated by the aura of mystery and alchemy which the industry segment presented to the uninitiated. Those who created the hi-tech industrial segment were usually technically astute but illiterate in good business management practices. Most success stories revolved around accidental discoveries commercialized into undefined, unknown markets. (Call luck "serendipity" and you've created a whiz kid.) Governments, on a global scale, began to fear being left with an archaic economic infra-structure within a few decades and so subsidized hi-tech to an extent never before realized by any industrial segment.

During the 1980's, the reality hit home. The recession of the early eighties made the business community aware of the lack of control and direction many of the hi-tech divisions were displaying. The hi-tech industry began the first recession it had ever experienced. The sorting out process is still continuing as businesses are insisting on more managerial controls on their hi-tech subsidiaries and as hi-tech industry itself is becoming more and more aware of its need for good business disciplines. Governments as well were affected, as more and more sectors of the economic infra-structure were in need of assistance to pull through the recession, just as the

September 20,1985

The Right Honourable Brian Mulroney, P.C., M.P

recession was drastically affecting government resources. Hard decisions had to be made and hard choices taken.

Today, industry is demanding facts in order to evaluate the potential of R & D in meeting its corporate missions before launching into new areas. Successful hi-tech companies are now concerned more with the customer than with the technician. Governments are insisting that proof of commercial viability preceed any major investment in the hi-tech industry.

The National Science and Engineering Research Council Canada (NSERC)has what appears to be a program offering a definative compromise. The NSERC's University-Industry Program in which our firm is participating, gives the responsibility for action and decision making to those who are best equiped. Under its terms, the program allows the university, which has the personnel, the resources and the expertise, to handle the research. In close co-ordination, the industrial partner works in those areas of competence which can best lead towards a commercially viable product: marketing in the real world, customer preferences, manufacturing cost limitations - accountability. The university benefits by allowing their researchers to experience the practical limitations that they will face in commercial R & D. The firm benefits by having access to research which it could not afford to undertake or which it would have been unable to properly direct. Lastly, the government and people of Canada benefit by the creation of both a large pool of talented, practical researchers and, incidently, a viable hi-tech industry which will employ them.

Our experience with this program is now in its sixth month and too early to determine how well this cross-fertilization will work in the long term. However, it must be stated that, to date, all expections have been met.

If this program is indicative of the caliber of thought and creativity throughout the NSERC, then our firm looks forward to the implimentation of other such programs, not only for reasons of potential financial gain, but also for the short and long term benefits which will accrue for Canada.

Regards

Richard Marquis
General Manager

c.c Erik Nielsen
Robert R. de Côtret
Thomas Edward Siddon
Sinclair Stevens
Michael Wilson

c 432

NORDCO Limited
Newfoundland Oceans Research and Development Corporation
P. O. Box 8833, St. John's, Newfoundland, Canada, A1B 3T2. Telephone (709) 364-1200, Telex 016-4596

September 18, 1985

Natural Sciences & Engineering
Research Council Canada
200 Kent Street
Ottawa, Ontario
K1A 1H5

ATTENTION: Dr. G. M. MacNabb
President

Dear Dr. MacNabb:

Many thanks for your letter of August 30, 1985 and the accompanying copy of "Completing the Bridge to the 90's".

NSERC has been very important to NORDCO, allowing us to take advantage of our local University's resources to a mutual advantage.

You can rest assured that I have in the past and will continue to express my strong support for NSERC's activities and commit to increasing my efforts during this crucial funding review period.

Yours truly,

Frank D. Smith
President and Chief Executive Officer

FDS/tmw

C
Sept 26

xérox Mr. C. Lajeunesse, CRSNG ✓
Prés. & princ.
DESR (2)

Lavalin

LAVALIN INC
1130 SHERBROOKE STREET W.
MONTREAL, QUEBEC
CANADA H3A 2R6
TELEPHONE (514) 288-1740
TELEX 055-61250
CABLE LAVALIN

September 18, 1985

The Honourable Thomas E. Siddon, M.P.
Minister of State for Science and Technology
8th Floor West
235 Queen Street
Ottawa, Ontario
K1A 1A1

Subject: Second five-year plan of the Natural Science and Engineering Research Council Canada (NSERC)

Dear Sir:

Please allow me to take a few minutes of your time to tell you about my support for the NSERC's second five-year plan, made public on June 25. I hope my comments may be useful to you and your government in your consideration of this matter.

As an engineer, and in particular as a businessman, I have always believed that Canada's economic prosperity depends in part on the scope of the efforts that we collectively devote to research and development. The document you submitted to us during the National Economic Conference held earlier this year clearly illustrates our country's deplorable record in this sector. Accordingly, your government's intention of tackling this situation was warmly welcomed by the business community.

Moreover, the Agenda for Economic Renewal held on November 8, 1984, the meeting you held with your provincial counterparts on February 4 and 5 in Calgary, and more recently the budget speech by The Honourable Michael H. Wilson demonstrate that R & D is indeed a priority of the Mulroney Government. In this respect, Mr. Wilson stated on May 23:

.../2

> *A further key to growth and more jobs is investment in research and development. Technological change is the driving force behind economic progress. We must keep pace in order to compete both at home and in foreign markets. A strong R & D performance has a vital role to play in meeting this challenge. It is an ongoing priority of this government to encourage a much-improved R & D performance in Canada.*

In my opinion, the NSERC's second five-year plan supports this view, as well as that expressed during the meeting in Calgary of the ministers responsible for science and technology.

First, the NSERC's five-year plan considers university research the "essential" starting point for any structured activities in this sector. This adjective was also used during your Calgary discussions, which recognized the importance of R & D at universities.

Second, the plan encourages a cooperative university-industry R & D effort by substantially increasing the credits for the new university-industry joint program. Under the proposed plan, these credits should reach $24 million in 1989-90 (in constant 1984-85 dollars).

Here at Lavalin, we recently began to restructure and to intensify the R & D carried out by the fifty divisions in our Group. Before the end of the year, we will launch a partially held corporation under the name of Lavalintech Inc., which will be devoted entirely to R & D. We have every reason to hope these actions will produce positive results in the near future and thereby contribute to one of your government's objectives, namely to increase private-sector investment in innovation.

Finally, I believe that the NSERC's second five-year plan is essential to the development of a future national policy on science and technology, as stated in the joint press release issued at the conference in Calgary.

Innovation and renewed growth are first and foremost the responsibility of the private sector; however, our major partners in these two economic endeavours are the provincial governments, and especially the federal government.

I am well aware that the government's financial resources are limited. Nevertheless, as you know, the investments called for by the NSERC's second five-year plan will without a doubt create jobs and boost the efficiency of Canadian companies, which face increasingly stiff foreign competition. In this respect, we should never forget the vital link between R & D, innovation and economic growth.

.../3

I hope these few thoughts will help to convince your government of the importance of responding positively to the needs expressed in the NSERC's five-year plan.

Thank you very much for giving this matter your consideration.

Yours truly,

Bernard Lamarre, Eng., M.Sc., F.E.I.C.
Chairman and Chief Executive Officer

BL/sl

c.c.: Mr. Roland Doré

xérox MM. C. Lajeunesse, CRSNG
Prés. & princ.
DLSR (2)

CHAMBRE DE COMMERCE DU QUÉBEC

CABINET DU PRÉSIDENT

le 13 septembre 1985

L'Honorable Thomas E. Siddon, P.C., M.P.
Ministre d'Etat, Sciences et Technologie
235, rue Queen (8e étage ouest)
Ottawa, Ontario
K1A 1A1

20/09/85

Monsieur le Ministre,

Après avoir examiné dans ses grandes lignes le deuxième plan quinquennal du Conseil de recherches en sciences naturelles et en génie du Canada (CRSNG) dévoilé en juin 1985, nous constatons l'importance de la réalisation des objectifs qu'il préconise.

Cet ensemble de programmes d'aide à la recherche universitaire en sciences naturelles et en génie et à la recherche et au développement coopératif (universités-industries) est opportun pour diminuer la dépendance du Canada à l'égard des richesses naturelles et de porter l'accent sur le développement des capacités intellectuelles.

Tout en maintenant notre recommandation de diminuer les dépenses publiques nous croyons que ce programme particulier mérite d'être protégé à cause de ses objectifs et du rôle essentiel qu'y joue le gouvernement.

Veuillez donc, Monsieur le Ministre, enregistrer notre appui au plan que vous a soumis le CRSNG et accepter par la même occasion l'expression de nos meilleurs sentiments.

François P. Paradis
Président

500, rue Saint-François-Xavier, Montréal (Québec) H2Y 2T3 Tél.: (514) 844-3431

Gandalf

Gandalf Technologies Inc.

33 John Street
Manotick, Ontario
Canada K0A 2N0
(613) 692-2577
Telex: 053-4728

September 13, 1985

Mr. Gordon M. MacNabb
President
Natural Sciences and Engineering
Research Council of Canada
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Mr. MacNabb,

Thank you very much for forwarding a copy of NSERC's Second Five Year Plan; it is much appreciated.

Please be assured that I shall peruse this Plan and will be in touch in due course should it prove appropriate.

Kind regards.

Yours sincerely,

D Cunningham per DC

30/9/85

Des Cunningham
Chairman

DC/as

FPL PROTECTION LIMITED

September 12, 1985

Dr. G. M. MacNabb
President
Natural Sciences and Engineering
Research Council of Canada
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Sir:

I was pleased to receive your letter of August 30 and the attached Hightlights and Summary of NSERC's second Five-Year Plan. Speaking on behalf of one technology-user agency that is benefiting from recent user-oriented NSERC grants to the University of New Brunswick (Department of Chemical Engineering), I can only endorse policies that have resulted in such broadened directions and encourage their continuation.

Yours truly,

H. J. Irving
Managing Director

HJI/pm

cc FPL Board of Directors
Dr. J.C.C. Picot
Hon. G.S. Merrithew
NBSERG Steering Committee

xéro> M^r. C. Lajeunesse, CRSNG ✓
Prés. & princ.
DESR (2)

Price Waterhouse

le 12 septembre 1985

L'honorable Thomas E. Siddon, P.C., M.P.
Ministre d'Etat, Sciences et Technologie
235, rue Queen (8e étage ouest)
Ottawa, Ontario K1A 1A1

Monsieur le Ministre,

A titre de citoyens et en qualité de professionnels en relations constantes avec les universités, les milieux de l'industrie et le monde des affaires, nous considérons comme un devoir strict d'appuyer le deuxième plan quinquennal du Conseil de recherches en sciences naturelles et en génie (CRSNG) du Canada.

Ce plan, rendu public en juin dernier, propose un ensemble de programmes d'aide à la recherce universitaire en sciences naturelles et en génie et d'aide à la R & D coopérative universités - industries, visant particulièrement à réduire la trop grande dépendance du Canada à l'égard de richesses naturelles quasi épuisées et à concentrer l'attention vers un monde où la survivance dépendra de plus en plus de notre capacité intellectuelle.

Dans la décision qu'il prendra relativement à ce plan au cours de l'automne, le gouvernement fédéral ne pourra sous-estimer le fait que notre pays accuse un retard par rapport à d'autres pays industrialisés dans sa capacité de recherche et de développement et que des gestes concrets doivent être posés pour corriger une telle situation.

Nous ne pouvons donc qu'être d'accord avec la Chambre de commerce du Canada qui, tout en encourageant le gouvernement à continuer de réduire ses dépenses, l'incite à allouer des sommes plus considérables à la recherche universitaire.

Veuillez agréer, Monsieur le Ministre, l'expression de mes sentiments distingués.

L'associé directeur général,

Pierre Mantha, c.a.

PM/jd
b.c.c. M. Roland Doré

xérox MM. C. Lajeunesse, CRSNG
Prés. & princ.
dir. et. sup. rech.(2)

Shawinigan

SHAWINIGAN LAVALIN INC
620 BOUL. DORCHESTER OUEST
MONTRÉAL, QUÉBEC, CANADA H3B 1N8
TÉLÉPHONE (514) 878-6000
TÉLEX 055-60845 CÂBLE SHENCO

le 11 septembre 1985

L'Honorable Thomas E. Siddon, P.C., M.P.
Ministre d'état, Sciences et Technologie,
235, rue Queen (8e étage ouest)
Ottawa, Ontario
K1A 1A1

Objet: Conseil de recherches en sciences naturelles et en génie (CRSNG) du Canada

Monsieur le Ministre,

Le Conseil de recherches en sciences naturelles et en génie (CRSNG) du Canada a présenté son deuxième plan quinquennal demandant un niveau de financement supérieur au financement obtenu lors du premier plan quinquennal. Le Conseil considère que les dépenses en recherches et développement n'ont pas atteint le niveau objectif de 1.5% du produit national brut et qu'il est nécessaire de consacrer plus d'effort pour s'assurer un développement scientifique raisonnable au Canada.

Même si le niveau de financement en recherches et développement ne semble pas pouvoir être atteint avant plusieurs années, nous considérons que les objectifs du Centre sont raisonnables et nous désirons vous informer de notre appui complet au deuxième plan quinquennal du Conseil.

Nous sommes particulièrement heureux de la proposition du Conseil d'élargir les programmes de subventions thématiques et les programmes conjoints Universités-industrie.

Nous considérons que votre appui au deuxième plan quinquennal du Conseil de recherches en sciences naturelles et en génie est des plus importants et nous vous prions de bien vouloir l'appuyer et de le recommander au gouvernement.

Veuillez agréer, Monsieur le Ministre, l'expression de nos meilleurs sentiments.

SHAWINIGAN LAVALIN INC.

Armand Couture, ing., M.Sc.
Président

cc: R. Doré

wholly-owned subsidiary of CAE Industries Ltd.

C A E ELECTRONICS LTD.

8585 Côte de Liesse, Montréal Québec, Can

September 9, 1985

The Honorable Thomas E. Siddon, P.C., M.P.
Minister of State, Science and Technology
235 Queen Street
Ottawa (Ontario)
K1A 1A1

Dear Mr. Siddon:

This letter is written to express support for the Second Five Year Plan for the Programs of the Natural Science and Engineering Research Council, "Completing the Bridge to the 90's".

In my opinion, the document is well researched and prepared and addresses areas of valid concern particularly with respect to developing industry/university collaboration. The potential future shortage of qualified researchers should not be ignored. For these reasons, the proposed budget increases are easily justified.

I would be happy to discuss the matter further or participate in further reviews if the need arises.

Sincerely,

G.M. McKinnon
Director R&D
and Adjunct Professor
Concordia University

GMM/dm

Postal address: BOX 1800, SAINT-LAURENT, Québec, Canada H4L 4X4
Telephone 514-341-6780 • Telex 05-824856 • TWX 610-422-3063

Gendron Lefebvre
Consultants

Laval, le 9 septembre 1985

Honorable Thomas E. Siddon, P.C.,M.P.
Ministre d'Etat, Sciences et Technologie
235, rue Queen (8e étage ouest)
Ottawa, Ontario K1A 1A1

Monsieur le Ministre,

Nous souhaitons appuyer fortement, à l'instar de la Chambre de Commerce du Canada, votre gouvernement à allouer des sommes plus considérables à la recherche universitaire.

Nous sommes conscients, comme tous les hommes d'affaires canadiens, de la nécessité de ralentir les dépenses de l'état, mais nous croyons essentiel de ne pas réduire les fonds de la recherche et du développement des universités. D'une manière plus spécifique, nous favorisons les programmes d'aide à la recherche universitaire en sciences naturelles et en génie, en collaboration avec l'industrie privée.

Le groupe Gendron Lefebvre veut apporter son appui au "deuxième plan quinquennal du CRSNG". Il y accorde d'autant plus d'importance que la coopération avec l'industrie est fortement encouragée dans ce plan.

Nous croyons prioritaire de fournir aux universités canadiennes les moyens financiers leur permettant de former adéquatement les savants des quinze prochaines années.

Veuillez agréer, Monsieur le Ministre, l'expression de nos sentiments distingués.

Claude F. Lefebvre, ing., a.-g.
Président

CFL/sf

Office of the Minister of State / Cabinet du Ministre d'Etat
12 IX 1985
Science and Technology / Sciences et Technologie

CONSEIL DU PATRONAT DU QUÉBEC

Le 6 septembre 1985

L'Honorable Thomas E. Siddon, P.C., M.P.
Ministre d'État, Sciences et Technologie
235, rue Queen
8e étage ouest
Ottawa (Ontario)
K1A 1A1

Office of the Minister of State — Cabinet du Ministre d'État

10 IX 1985

Science and Technology — Sciences et Technologie

Monsieur le Ministre,

Nous avons pris connaissance avec énormément d'intérêt du deuxième plan quinquennal du Conseil de recherches en sciences naturelles et en génie du Canada rendu public en juin dernier.

Pour l'essentiel, ce plan fait état d'un ensemble de programmes d'aide à la recherche universitaire en sciences naturelles et en génie et d'aide à la R & D coopérative universités-industries, dont le but est de diminuer la trop grande dépendance du Canada à l'égard de richesses naturelles quasi épuisées et de porter de plus en plus notre attention vers un monde où la survivance dépend largement de notre capacité intellectuelle.

Ce document fait également bon nombre de propositions pour s'assurer que le Canada pourra développer les ressources humaines qui lui seront absolument nécessaires pour assurer son développement technologique.

Il propose finalement une importante affectation de ressources financières à la recherche de base.

Nous désirons par la présente, Monsieur le Ministre, appuyer l'essentiel de ce plan.

Nous sommes bien conscients par ailleurs que nous traversons une période économique difficile et que les dépenses gouvernementales doivent être réduites au maximum. Cet objectif de réduction des dépenses gouvernementales nous oblige donc à faire des choix: nous croyons cependant que personne ne fera grief à un gouvernement d'investir raisonnablement dans son avenir, dans l'essence même de son développement

... UNIVERSITÉ MONTRÉAL P.Q. H3A 2L1 / TÉLÉPHONE: (514) 288-5161

futur, à savoir la recherche, ce que nous propose le plan quinquennal du CRSNG. Ce type de dépenses doit être privilégié par rapport, faut-il le dire, à bien d'autres dépenses discutables des gouvernements.

Veuillez agréer, Monsieur le Ministre, l'expression de nos sentiments très distingués.

Le Président,

Sébastien Allard

Sébastien Allard
SA/lp

SYSTÈMES D'INFORMATIQUE PHILIPS LTÉE

PHILIPS

600 boul. Dr Frederik Philips
St-Laurent, Québec, Canada
H4M 2S9

Le 4 septembre, 1985

L'Honorable Thomas E. Siddon, P.C., M.P.
Ministre d'État, Sciences et Technologie
235 rue Queen (8e étage ouest)
Ottawa, Ontario
K1A 1A1

Cher monsieur Siddon,

Systèmes d'informatique Philips Ltée, une compagnie ayant son siège social à Ville Saint-Laurent, au Québec, et fabricant à cet endroit des ordinateurs personnels, des machines de traitement de texte, et qui y effectue également tous ses travaux de recherches et développement en matière de logiciel et de quincaillerie, a pris connaissance d'un sommaire du deuxième plan quinquennal du Conseil de recherches en sciences naturelles et en génie du Canada.

Nous sommes évidemment tous conscients de la situation économique difficile au pays. Il n'en demeure pas moins cependant que le Canada accuse un retard sérieux par rapport à d'autres pays industrialisés dans sa capacité de recherche et de développement et que des gestes concrets doivent être posés pour corriger cette situation. Durant la période du premier plan quinquennal, de 1979 à 1984, les dépenses brutes au titre de la R et D sont passées de 1,0% du PNB à 1,24%, ce qui est extrêmement faible. Le plan prévoit que, si le PNB croit à un rythme raisonnable, le Canada pourra à peine investir 1,5% du PNB dans la R et D en 1990, objectif initialement fixé pour 1983.

.../2

téléphone (514) 744-8200
télex 05-824090

Il est essentiel pour les universités de trouver du personnel enseignant, de renouveller leur matériel et d'agrandir leurs locaux afin de pouvoir former adéquatement les hommes de science dont le Canada aura besoin au cours des 15 prochaines années.

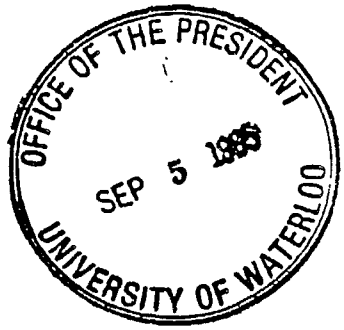
En conséquence, Systèmes d'informatique Philips Ltée donne son appui à ce deuxième plan quinquennal du Conseil de recherches en sciences naturelles et en génie du Canada, d'autant plus que la collaboration avec l'industrie y est fortement encouragée.

Veuillez agréer, monsieur le Ministre, nos salutations les plus distinguées.

Pieter van Kempen
Président du conseil et
chef de la direction

/NF

Jack V. Masterman, President and Chief Executive Officer
Mutual Life of Canada
227 King Street South, Waterloo, Ontario N2J 4C5



Mutual
Life of Canada

The Right Honourable Brian Mulroney
Prime Minister of Canada
House of Commons
Room 309-S, Centre Block
Parliament Buildings
Ottawa, Ontario
K1A 0A6

Dear Mr. Mulroney:

I am writing to you at this time to support the plea made by Dr. Douglas Wright, President of the University of Waterloo, and Mr. Trevor Eyton, Chairman of the Board of Governors of the university, in their letter to you dated July 25, 1985.

The issue of adequate government support for Ontario universities has been the subject of much discussion and several reports in recent years. It is not my intention to make these arguments again. However, I can make a comment from the point of view of a large employer in the Kitchener-Waterloo region.

Those of us who live and work in these cities have become very much aware of the importance of the university to the continuing and accelerating economic growth of these communities. In the last few years especially, the University of Waterloo has become the catalyst for a rapidly growing "high-tech" industrial complex. As a result, jobs are being created -- the kind of jobs that Canada will need in future in order to be able to compete effectively in a technologically-based world economy.

Moreover, the preeminent position of the university in the areas of computer science and mathematics has become a significant benefit even to more traditional industries in this region, inluding our own. Mutual Life of Canad has recongized the crucial importance of keeping in the forefront of developments in the computer area. We believe this may impact on our ability to remain competitive in the rapidly changing world of financial services. Consequently, we have become a member of the university's Institute for Computer Research, which involves a substantial commitment of funds on our part. We feel very fortunate to have had such a creative resource available to us.

...2

Dr. Wright has painted a grim picture of the potential damage to the university -- and to the other research-intensive Ontario universities -- which can result from continued underfunding. The research and instructional effort of the University of Waterloo is an important resource for us and for other employers in this area and in other parts of Canada. If that unique resource is dissipated because governments do not recognize the long-term importance of such an intellectual powerhouse to the economic future of Canada, the country will sustain great damage which could take a generation to repair.

I have discussed this matter with our Chairman, Mr. J. H. Panabaker, who is a former Chairman of the Board of Governors of McMaster University, and who is now a member of the Ontario Council on University Affairs. He fully supports the views I have expressed in this letter. The health and vitality of Canada's universities -- particularly its research-intensive universities -- is of vital importance to the country's economic future. Their needs must be given high priority as your government considers plans for the economic renewal of the country.

Yours respectfully,

September 3, 1985

Spar Aerospace Limited
Royal Bank Plaza
South Tower, Suite 3690
P.O. Box 83
Toronto, Ontario
M5J 2J2

L.D. Clarke
Chairman of the Board
and
Chief Executive Officer
(416) 865-0480

August 30, 1985

Mr. G. M. MacNabb,
President,
Natural Sciences and Engineering,
Research Council of Canada,
200 Kent Street
Ottawa, Ontario,
K1A 1H5

Dear Gordon:

Thank you for your letter of August 23, 1985 which arrived today. I am enclosing a copy of a letter which I sent to the Prime Minister yesterday in support of Doug Wright's brief, which in turn, clearly supports your activities.

In my meetings with Tom Siddon, I have mentioned the importance of the university research community and their dependence on your Council for support. He will be visiting us again towards the end of September and I will reinforce this point with him at that time.

It is my perception that while the present Government professes support to R&D, it has not fully grasped the relevance between R&D and the long term economic viability of our Country. Perhaps too much attention has been directed to the glamourous elements of R&D and too little at the more fundamental aspects. For instance, where would our agriculture industry be today had we not maintained a large research but unglamorous program over the past 75 years.

.....cont'd page 2

Thus, it is probable that the present Government will run around like the little Dutch boy, putting his fingers in the holes in the dyke, unless the fundamental importance of R&D to the economy as a whole can be impressed on it. Clearly, there must be a better way to get this point across than we have done to date.

I would be happy to meet with you over lunch in Ottawa or Toronto to discuss this question further, should you feel that it would be productive.

Yours sincerely,

LDC/lw

Spar Aerospace Limited
Royal Bank Plaza
South Tower, Suite 3690
P.O. Box 83
Toronto, Ontario
M5J 2J2

L.D. Clarke
Chairman of the Board
and
Chief Executive Officer
(416) 865-0480

August 29, 1985

The Right Honourable Brian Mulroney,
Prime Minister of Canada,
House of Commons,
Room 309-S, Centre Block,
Parliament Buildings,
Wellington Street,
Ottawa, Ontario,
K1A 0A6

Dear Prime Minister:

Doug Wright of Waterloo kindly sent me a copy of his letter to you of July 25, 1985 with respect to University funding.

The future economic well being of Canada requires that we build on our strengths. One of our greatest strengths is the outstanding quality of the graduates from our universities. The capabilities of these graduates has gone far to compensate for the many other difficulties which Canadian enterprises face, such as limited domestic markets and high labour costs.

For this reason, it has been a major strategic error that, increasingly over the past 25 years, Canadians have failed to appreciate the fundamental importance of this asset. As Dr. Wright states, we are close to a point of no return in respect to support of our universities.

.....cont'd page 2

As an individual who has spent over 30 years in the development of high technolgy industry in Canada, I urge you to give the most serious consideration to the issues raised by Dr. Wright.

Yours sincerely,

Larry Clarke

LDC/lw

cc: The Honourable Walter McLean
The Honourable Tom Siddon,
The Honourable Sinclair Stevens
The Honourable Michael Wilson

Connaught Laboratories Limited
1755 Steeles Ave West
Willowdale, Ontario M2R 3T4

August 26, 1985

Rt. Hon. Brian Mulroney,
Prime Minister of Canada,
OTTAWA, Ontario K1A 0A2

Dear Mr. Prime Minister:

I am writing at this time to support the recent letter to you from the University of Waterloo.

It has been my privilege to have served in the academic community for a number of years prior to assuming my present position in Connaught Laboratories, involved with biotechnology and industrial development in the health-care field.

I have had the privilege of being associated with the Biotechnology Research Institute at the University of Waterloo and also participating in a number of their programs. I have been most impressed with their effort in enhancing industrial/university collaboration, and have been impressed with their efforts in assisting Canadian companies in becoming more competitive in an increasingly technological world.

I totally support their emphasis regarding NSERC's activity, and sincerely hope that you and your Government will continue to foster enhanced support for universities as well as the promotion of increased industrial/university co-operation.

I have increasingly become concerned as to Canada's future as one observes the enhanced effort in competitive industrialized countries in developing new technologies and promoting their competitive abilities in a number of high-tech industries. In Canada our intellectual and technological base is in our universities and to a certain extent in our Government laboratories. It is essential that these be strengthened and perhaps more importantly efforts be increased to assist in the transfer of inventions and discoveries into Canadian industry. Unfortunately, in Canada we have few entrepreneurs in comparison to our neighbour to the South, and to some extent in certain countries in Europe. I believe that it will be essential to encourage and provide appropriate support for those innovative individuals who are capable of taking an invention and embarking upon a commercial development that will focus on certain niches and employ a number of well-trained Canadians who are graduating from our universities.

Once again I would simply wish to express my total support for the comments and proposals in Dr. Wright's letter, and ask that support be given for enhanced support of the research and science programs in Canadian universities.

Yours truly,

W.A. Cochrane, M.D.,
Chairman and Chief
Executive Officer

WAC:mw

THE CANADIAN CHAMBER OF COMMERCE

200 ELGIN STREET • SUITE 301 • OTTAWA ONTARIO K2P 2J7 • (613) 238-4000 • TELEX 053 3051

OFFICE OF THE PRESIDENT

August 13, 1985

The Hon. Thomas Siddon, P.C., M.P.
Minister of State for
Science and Technology
Room 119, East Block
House of Commons
Ottawa, Ontario K1A 0A6

Dear Minister,

Further to our May 13 meeting, the Chamber's Research and Development Committee welcomes this opportunity to comment on university research, funded through the Natural Sciences Engineering and Research Council.

In order to compete and prosper in a highly technological and competitive world, Canada needs a superior innovative capacity and a continuing adequate supply of manpower with excellent capability. This can only be achieved by assuring the quality and research capability of our university system. This is critical to fulfilling the manpower and research and development expectations of government, industry and society as a whole. Action to foster, develop and enhance the capabilities of our universities is essential so as to ensure the country's and our children's future.

Within the business community, there is growing concern that the financial squeeze on university funding may interfere with the ability of universities to respond to the demands of our society. Universities lack the funds to replace aging faculty as well as equipment -- a replacement that is a prerequisite to the education of students and scientists in the next 5 to 15 years.

... 2

Increasingly, universities are finding it difficult, at times impossible, to meet the demands made on them for research and development because of space limitations, obsolete facilities and shortage of faculty and support staff. Enrollments are higher, and in real terms, funding per student has dropped by 20 percent or more in the last decade in many jurisdictions.

The Chamber recognizes the severe budgetary constraints facing the government and fully supports efforts to reduce spending in order to improve our country's deficit and debt position. Nevertheless, we believe that within the limits imposed by the existing budgetary constraints, university funding should be recognized as a priority area. In particular, we recommend:

- That these problems be addressed in federal/provincial negotiations on funding of post-secondary education, with due attention to the fact that universities must have adequate support for research programs if they are to meet governmental, industrial and societal needs for research and highly qualified manpower.

- That the private sector, labour and universities be involved on an on-going basis in negotiations on university funding and on technological and scientific goals of the nation. Planning should be on a long-term basis and abrupt changes should be avoided.

- That the need for quality in education and research be fully respected in the negotiations, even in the face of current financial constraints facing governments.

- That, in order to maintain the supply of scientists and engineers needed to fulfill research and development targets, graduate and postgraduate training at the universities be strengthened by the provision of appropriate support for equipment and facilities.

- That special incentives be considered to attract the most gifted students to the highest level of their profession. Identification and support of leadership and management potential is especially important.

- That foreign students, especially those in graduate programs, not be discouraged, for instance by higher fees, from coming to Canada.

... 3

- That technology transfer programs between universities and industry be encouraged.

The private sector recognizes the need for financial constraints and sacrifices. However, we believe that the development of scientific research and development at the universities must be supported at a very high level. The apparent short-term savings that might accrue through continued underfinancing would be offset by the tragedy that would almost inevitably follow.

Sincerely,

Roger Hamel

cc: The Hon. Walter McLean, Secretary of State
The Hon. Sinclair Stevens, Minister of Regional Industrial Expansion
The Hon. Michael Wilson, Minister of Finance
Provincial Ministers of Education

northern telecom

Northern Telecom
Electronics Limited

P.O. Box 3511, Station C
Ottawa, Ontario
Canada K1Y 4H7

Tel. (613) 596-2210
TWX 610-563-1633
Telex 05-34753
Telecopier 596-2661

Semiconductor Components Group

August 19, 1985

Mr. Gordon MacNabb
President
Natural Sciences and
Engineering Research Council
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Gordon

It has repeatedly come to my attention through our liaison work with universities across Canada, that one of the critical problems facing universities today is a shortage of highly qualified staff.

I note that NSERC, primarily through your University Research Fellowship program, not only has recognized the shortage but has been actively addressing the problem and plans to continue to do so in your next 5 year plan. The purpose of this letter is to express support for the NSERC faculty development work. The continuing success of Northern Telecom depends on a supply of highly qualified manpower, and that supply in turn clearly depends on the ability of the universities to provide excellence in educational opportunity for Canadian students.

Yours very truly

A. G. Sadler
Vice-President
Semiconductor Components
Northern Telecom Electronics

/lf

185 Corkstown Road, Nepean, Ontario K2H 8G1

POOL

Saskatchewan Wheat Pool

HEAD OFFICE [illegible]

FARM SERVICE DIVISION

August 1, 1985

The Honourable Tom Siddon
Minister of Science and Technology
119 East Block
OTTAWA, Ontario
CANADA K1A 0A6

Since 1976 Saskatchewan Wheat Pool has been involved in applied agricultural research through its Product Development section. As Manager of this section I have been involved in hiring scientific personnel and in liaison with personnel within the public research institutions. Through these activities it has become very apparent to me, there is quickly developing a critical shortage of highly educated scientists. In addition, with the speed with which new technologies are developing, there is a need for more basic research at our public institutions which will not and cannot be conducted in organizations such as our own. The Natural Sciences and Engineering Research Council (NSERC) fills a very important function in providing funds to public institutions for such research and training of staff. In their recent five year forecast they indicate a potential shortfall in trained personnel and this will consequently mean reduction in research efforts.

I strongly urge the maximum possible funds be provided to NSERC over the next five years to ensure that training and employment of valuable research people continues and that they remain in Canada.

Yours truly,

R. E. Morgan
Manager
Product Development

REM:vjh

cc: Dr. John King, Professor and Head Dept. of Biology
University of Saskatchewan

Office of the
Minister of State

-7 AUG 1985

Science and Technology

Sciences et Technologie

C·I·L Inc.

C-I-L House
P.O. Box 200, Station "A"
North York, Ontario M2N 6H2
(416) 229-8436

Hugh C. Rowlinson, D. Phil.
Vice-President
Research and Technology

July 29th, 1985

The Rt. Honorable Brian Mulroney,
P.C., M.P.,
Prime Minister of Canada,
Langevin Block,
Ottawa, K1A 0A2

Dear Mr. Prime Minister,

NATURAL SCIENCES & ENGINEERING RESEARCH COUNCIL (NSERC)

I was asked by some of your officials in MOSST to write you, as well as Mr. Siddon and Mr. Rene de Cotret, to express an industrial view of the above organization. This view arises from many university visits and contacts that I have made over the past three months, following a decision of the C-I-L Board of Directors last fall to provide more funds for research co-operation between C-I-L and Canadian universities. One thing that stood out in these campus visits and contacts is the almost universal good opinion of NSERC. It is widely regarded as an efficient and effective organization, and differs sharply from the view that most university professors have of their other paymasters.

With regards to NSERC's recently-submitted Five Year Budget Proposals, I believe there is no doubt that Dr. Gordon McNabb is addressing the right problems. There is at the moment a distinct shortage of well-trained researchers (at Ph.D. and post-doctorate levels) emerging from universities, and since one of the major difficulties in progressing university research is a shortage of graduate students, this situation will become worse. There is little doubt that this will put a crimp in Canada's plans for achieving competitive advantage through advanced R & T, particularly by inhibiting industry's ability to transfer the technology downstream. Improved funding is probably only part of the answer; clearly, perception of research at the undergraduate level is not correct, and probably only long-term stability of funding and employment will change this.

....2....

A second area of shortage is that of research equipment. This is not so in all cases; at some universities equipment is lying idle for lack of people to operate it, but this is more true of general purpose analytical equipment than the specific research equipment that the NSERC budget addresses. The final noticeable shortage is of infrastructure, such as the maintenance of buildings, people to operate routine equipment and services, etc. These are areas where I understand the provincial governments have cut back over the past years, with the noticeable exception of Alberta.

Turning finally to NSERC's specific proposal for a doubling of budget over five years, I find some difficulty in supporting that. Like any citizen, I am well aware of the Government of Canada's enormous and potentially disastrous deficit, and would support almost any effort to reduce it sharply. In this situation, it is difficult to support a doubling of budget for any group. What I would support is an improved proportion of your government's R & D "envelope" going to NSERC, primarily at the expense of in-house research and other granting programs which are not nearly so highly thought of in terms of either effectiveness or good management. I hope that these comments, written in a helpful spirit, will assist in the extremely difficult decisions that have to be made.

Yours very truly,

H.C. Rowlinson

C·I·L Inc.

C-I-L House
P.O. Box 200, Station "A"
North York, Ontario M2N 6H2
(416) 229-8436
July 29th, 1985

Hugh C. Rowlinson, D. Phil
Vice-President
Research and Technology

The Hon. Thomas E. Siddon, M.P.,
Minister of State for
Science & Technology,
121 East Block,
House of Commons,
Ottawa K1A 0A6

Office of the Minister of State / Cabinet du Ministre d'Etat

7 VIII 1985

Science and Technology / Sciences et Technologie

Dear Mr. Siddon,

NATURAL SCIENCES & ENGINEERING RESEARCH COUNCIL (NSERC)

I was asked by some of your officials in MOSST to write you to express an industrial view of the above organization. This view arises from many university visits and contacts that I have made over the past three months, following a decision of the C-I-L Board of Directors last fall to provide more funds for research co-operation between C-I-L and Canadian universities. One thing that stood out in these campus visits and contacts is the almost universal good opinion of NSERC. It is widely regarded as an efficient and effective organization, and differs sharply from the view that most university professors have of their other paymasters.

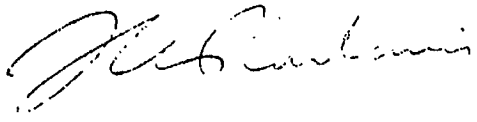
With regards to NSERC's recently-submitted Five Year Budget Proposals, I believe there is no doubt that Dr. Gordon McNabb is addressing the right problems. There is at the moment a distinct shortage of well-trained researchers (at Ph.D. and post-doctorate levels) emerging from universities, and since one of the major difficulties in progressing university research is a shortage of graduate students, this situation will become worse. There is little doubt that this will put a crimp in Canada's plans for achieving competitive advantage through advanced R & T, particularly by inhibiting industry's ability to transfer the technology downstream. Improved funding is probably only part of the answer; clearly, perception of research at the undergraduate level is not correct, and probably only long-term stability of funding and employment will change this.

....2....

A second area of shortage is that of research equipment. This is not so in all cases; at some universities equipment is lying idle for lack of people to operate it, but this is more true of general purpose analytical equipment than the specific research equipment that the NSERC budget addresses. The final noticeable shortage is of infrastructure, such as the maintenance of buildings, people to operate routine equipment and services, etc. These are areas where I understand the provincial governments have cut back over the past years, with the noticeable exception of Alberta.

Turning finally to NSERC's specific proposal for a doubling of budget over five years, I find some difficulty in supporting that. Like any citizen, I am well aware of the Government of Canada's enormous and potentially disastrous deficit, and would support almost any effort to reduce it sharply. In this situation, it is difficult to support a doubling of budget for any group. What I would support is an improved proportion of your government's R & D "envelope" going to NSERC, primarily at the expense of in-house research and other granting programs which are not nearly so highly thought of in terms of either effectiveness or good management. I hope that these comments, written in a helpful spirit, will assist in the extremely difficult decisions that have to be made.

Yours very truly,



H.C. Rowlinson

northern telecom

Northern Telecom Limited
Bell Trinity Square
Floor 10, South Tower
Toronto, Ontario
Canada M5G 2E1

Tel.: (416) 581-3888
TWX: 610-491-0493
Facsimile: (416) 595-1678

W. F. Light
Retired Chairman

July 15, 1985

85 07 19

Mr. G.M. MacNabb
President
Natural Sciences and Engineering
Research Council of Canada
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Gordon:

I have had an opportunity to skim the NSERC second five-year plan. I cannot overemphasize the role that the universities must play in ensuring that Canada is a leader in the Information Age. The plan is certainly in the right direction and I hope that it will receive lots of support.

Yours sincerely,

Walter

WFL:jmm

northern telecom

Northern Telecom Limited
Bell Trinity Square
Floor 10, South Tower
Toronto, Ontario
Canada M5G 2E1

Tel.: (416) 581-3888
TWX: 610-491-0493
Facsimile: (416) 595-1678

W. F. Light
Retired Chairman

July 15, 1985

The Hon. Thomas Siddon, P.C., M.P.
Minister of State for Science
and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Tom:

As you are aware, I have expressed my concern about the lack of funding and other aspects of our educational system for some time. Without quality education, and continued research at our universities, Canada will not be a leader in the Information Age nor a serious competitor in international trade in the years ahead.

The recent NSERC's Second Five-Year Plan reflects concerns that I have expressed publicly for some time. There is no doubt that we must close the gap and make more funds available for research at our universities so that we generate the new research talent that will be required to make Canada a winner.

Business as well as government have an important role to play in this matter, and we are beginning to see more and more examples of cooperative effort between the university and industrial communities. I would hope that we would see more of the same between government and universities, and the speedy implementation of the NSERC's Second Five-Year Plan would be a positive step in this direction.

As you are probably aware, I am involving myself even more with our universities and have taken on the responsibilities of Chairman of the Board of Trustees of Queen's. Also, to ensure I am abreast of educational activities in the U.S., I am a member of the Board of Overseers of the Amos Tuck School of Business Administration (Dartmouth College, Hanover, N.H.), and am working directly with Anthony Oettinger, Chairman of the Program on Information Resources Policy at Harvard.

I would be pleased at any time to discuss my views on the entire educational matter with you at your convenience.

Yours sincerely,

Walter

WFL:jmm

P.S. I have sent the same letter to Michael Wilson, Sinc Stevens, and Flora MacDonald

The Hon. Erik H. Nielsen, P.C., M.P.

FILE: 40100-1

July 2, 1985

The Honourable Thomas Siddon
Minister of State for Science &
Technology
119 East Block
HOUSE OF COMMONS
OTTAWA, ON
K1A 0C6

Dear Sir:

I understand that the second five-year plan for the Natural Sciences and Engineering Research Council of Canada (NSERC) has been presented for approval. Hopefully, you will be able to emphasize the need to provide sufficient funding to implement this five-year plan.

It has been my experience that the NSERC program has been an excellent vehicle for funding university research and developing a synergistic relationship between universities and the private sector. These programs are necessary to develop and maintain sufficient scientists and engineers for Canada's necessary R & D activities.

May I please request your assistance in obtaining sufficient support for the NSERC program. Thank you.

Sincerely,

Roy A. Carr
President

RAC/pcs

cc: John King, Professor and Head
Department of Biology
University of Saskatchewan
SASKATOON, SK
S7N 0W0

POS Pilot Plant Corporation
118 Veterinary Road,
Saskatoon, SK., Canada S7N 2R4

CANADIAN ASSOCIATION OF PHYSICISTS

ASSOCIATION CANADIENNE DES PHYSICIENS

151 SLATER, SUITE 805, OTTAWA, ONTARIO K1P 5H3 TELEPHONE: (613) 237-3392

President
G.C HANNA
Atomic Energy of Canada Limited
(613) 584-3311 ext 2345

Vice-President
A I. CARSWELL
York University
(416) 667-3316

Vice-Président Élu
ALAIN CAILLÉ
Université de Sherbrooke
(819) 565-3587

Past President
B.P. STOICHEFF
University of Toronto
(416) 978-2948

Secrétaire-trésorier honoraire
B.C. GREGORY
INRS-Énergie
(514) 468-7738

Executive Secretary
MONA L. JENTO

1985 June 26

The Honourable Thomas E. Siddon
Minister of State for Science
and Technology
Room 119, East Block
The House of Commons
OTTAWA, Ontario
K1A 0A6

Dear Dr. Siddon:

I would like to convey to you the sincere appreciation of the Canadian Association of Physicists for your very stimulating address on June 23 and the subsequent discussion. Thank you for devoting substantial time and effort from your busy schedule to a consideration of our concerns.

The Canadian Association of Physicists strongly supports the view that more Canadian research concepts should be moving swiftly and profitably into Canadian industry, but we hope that the fundamental importance of basic research will continue to be fully recognized since it provides the foundation for all the rest.

In particular, without a foundation of basic research carried on at the highest levels of excellence, Canada will not be able to educate its young people to standards that are intellectually competitive and will inevitably lose the best of them to its competitors.

The dependence of manpower training on the whole spectrum of research activities, from basic research to industrial R&D, is well recognized by the Natural Sciences and Engineering Research Council, and we are very concerned that any delay in implementing NSERC's second Five-Year Plan will mean, effectively, a reduction of NSERC support at the very time when an increase is urgently needed to "complete the bridge to the 90's". We really do not believe that decisions should be delayed in the hope of an early resolution of the Established Programs financing arrangements.

GEORGE WESTON LIMITED
22 ST. CLAIR AVENUE EAST, TORONTO, CANADA M4T 2S3 SUITE 302
TELEPHONE 416 922 2500

CORPORATE SERVICES

June 6, 1985

Mr. Gordon MacNabb
President
Natural Sciences and Engineering
Research Council of Canada
Ottawa, Ontario
K1A 1H5

Dear Mr. MacNabb:

This letter is to add my personal thanks to those of my colleagues for your most timely and informative presentation to the Canadian Manufacturers' Association Science and Technology Committee on May 22, 1985.

The figures you presented were, to say the least, disquieting and certainly signal the need for prompt action in both increasing the productivity of existing research forces and in providing funds to remedy the Canadian shortfall in skilled resource people.

In case you're not already aware, the Weston R&D posture (via DIVERSIFIED RESEARCH LABORATORIES LTD.) is very much in support of NSERC activities. Dr. G. R. Lawford, General Manager and Technical Director, serves as a member of the Strategic Grants Committee, and Weston has substantial research commitments with both the University of Toronto and the University of Guelph. Under consideration, but not yet approved, is an Industrial Research Professorship which will add further weight to the NSERC university/industry interface program.

There can be no question of the importance to Canada of the proposed NSERC second five-year plan. Please don't hesitate to call if there is some way in which we can add our support to your efforts.

Sincerely,

A. R. Chadsey
Manager
Corporate Services

We have to agree with you that problems are not solved simply by throwing money at them. Overall, no doubt, we shall have to do more with less, but reducing support for the scientific activities on which our future depends would seem to be a poor strategy. Unfortunately the budgetary reductions suffered by NRC, AECL and the Science Council are hardly reassuring in this respect.

Again, our thanks to you for coming to our Congress.

Yours sincerely,

G.C. Hanna

G.C. Hanna
President

GEORGE WESTON LIMITED
22 ST. CLAIR AVENUE EAST, TORONTO, CANADA M4T 2S5 SUITE 207
TELEPHONE 416-922-7900

CORPORATE SERVICES

June 14, 1985

The Honourable Thomas Siddon
Minister
Ministry of State Science &
Technology Canada
C. D. Howe Building
235 Queen Street
Ottawa, Ontario
K1A 1A1

Dear Mr. Minister:

According to this morning's Globe & Mail (New R&D Ground Rules), although NSERC may not get much more money for their next five-year plan, the process of its approval is to be changed.

It is to be hoped that this change will, among other things, replace the hotch-potch funding arrangements of the last five years. These appear to have been a hindrance to NSERC's getting on with the pressing problems in overcoming Canada's dangerous shortage of engineers and natural scientists.

Attached for your information is a copy of a letter sent to Mr. MacNabb following the same meeting where I had the pleasure of making your acquaintance.

Sincerely

A. R. Chadsey
Manager
Corporate Services

enclosure

GEORGE WESTON LIMITED
22 ST. CLAIR AVENUE EAST, TORONTO, CANADA M4T 2S5 SUITE 202
TELEPHONE 416 922 2500

CORPORATE SERVICES

June 6, 1985

Mr. Gordon MacNabb
President
Natural Sciences and Engineering
Research Council of Canada
Ottawa, Ontario
K1A 1H5

Dear Mr. MacNabb:

This letter is to add my personal thanks to those of my colleagues for your most timely and informative presentation to the Canadian Manufacturers' Association Science and Technology Committee on May 22, 1985.

The figures you presented were, to say the least, disquieting and certainly signal the need for prompt action in both increasing the productivity of existing research forces and in providing funds to remedy the Canadian shortfall in skilled resource people.

In case you're not already aware, the Weston R&D posture (via DIVERSIFIED RESEARCH LABORATORIES LTD.) is very much in support of NSERC activities. Dr. G. R. Lawford, General Manager and Technical Director, serves as a member of the Strategic Grants Committee, and Weston has substantial research commitments with both the University of Toronto and the University of Guelph. Under consideration, but not yet approved, is an Industrial Research Professorship which will add further weight to the NSERC university/industry interface program.

There can be no question of the importance to Canada of the proposed NSERC second five-year plan. Please don't hesitate to call if there is some way in which we can add our support to your efforts.

Sincerely,

A. R. Chadsey
Manager
Corporate Services

e Canadian L'Association
nufacturers' des manufacturiers
s(iation canadiens

nge Street, Toronto, Ontario M5E 1J9
3-7261 Telex: 065-24693

F THE PRESIDENT

June 11, 1985

The Honourable Flora I. MacDonald, P.C., M.P.
Minister of Employment and Immigration
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Minister: Flora.

The attached letter concerning the need to continue providing adequate funding to the Natural Sciences and Engineering Research Council has been sent from CMA to The Honourable Thomas Siddon, Minister of State for Science and Technology. We are providing you with a copy as we understand this is an issue that will be examined by the Economic and Regional Development Cabinet Committee.

Yours sincerely,

J. Laurent Thibault

/sdn
Enclosure
cc: Mr. Gordon MacNabb, President, NSERC
Mr. D.W. Montgomery, Vice-President, Government Relations
CMA Ottawa Office.

June 21/85

The Canadian Manufacturers' Association
L'Association des manufacturiers canadiens

[illegible] Yonge Street, Toronto, Ontario M5E 1J9
(416) 363-7261 Telex: 065-24693

OFFICE OF THE PRESIDENT

June 11, 1985

The Honourbale Thomas Edward Siddon, P.C., M.P.
Minister of State for Science and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Minister:

The CMA has been keenly interested in the work of the Natural Sciences and Engineering Research Council (NSERC) in its efforts to improve the quality and quantity of engineering and science graduates and to improve links between university researchers and business. As you know, in our White Paper "A Future That Works" CMA specifically endorsed such NSERC activities. We believe that NSERC is influencing universities to move in the direction of meeting industry needs for graduates and for research that will improve the productivity and competitiveness of Canadian manufacturers.

CMA understands that NSERC's second five-year plan is now being reviewed by you and your Cabinet colleagues. In our view, it is important to manufacturers that NSERC's work continue to be supported by the federal Government on a priority basis and we recommend that the funding for NSERC's next five-year plan be approved.

We are aware that the funds NSERC has requested for its next five-year plan cover a broad range of objectives and we do not propose to recommend support for one aspect of the plan over another. CMA has monitored the activities of NSERC through our Science and Technology Committee and we are generally satisfied with the direction NSERC is taking in encouraging universities to meet manufacturers' needs for the twin products of graduates and university research capability. Nevertheless, we would like to point out a concern our Science and Technology Committee has that industry representation on the NSERC Council and its various

committees could and should be improved in order to further strengthen and assist NSERC's efforts to make university research and graduates even more relevant and useful to industry. At present, in our view, there is clearly a disproportionate number of government and academic representatives on the NSERC Council and its various committees. This is an issue that the CMA Science and Technology Committee has raised with Mr. MacNabb, NSERC President, at a recent meeting and we hope that as further appointments to the NSERC Council and its committees are made that a better balance of representation from industry, government and universities will be struck.

Because of their interest in this matter, copies of this letter are being sent to your colleagues on the Economic and Regional Development Cabinet Committee.

Yours sincerely,

J. Laurent Thibault

/sdn

cc: Mr. Gordon MacNabb, President, NSERC
Mr. B.T. Ness, Chairman, CMA Science and Technology Committee and President and Chief Executive Officer, Canada Wire and Cable Limited
Mr. D.W. Montgomery, Vice-President, Government Relations CMA Ottawa Office.

270-0

digital

Office of the President

March 8, 1985

The Honourable Thomas Siddon
Minister of Science and Technology
House of Commons
Wellington Street
Ottawa, Ontario
K1A 0A6

Dear Mr. Siddon

As a company dedicated to the computer business, Digital Equipment of Canada Limited is very cognizant of the need for Canada to develop and maintain a strong industrial base founded on high technology. This will only happen if we, as a country, make a major commitment to the training of scientists and engineers, and research in the new technology that will lead to future products that meet worldwide market needs.

In our opinion, universities are a key resource that we must use to foster future expansion of high technology industries. We have many excellent universities with worldwide reputations for their research results and for the quality of their graduates. They require the funding necessary for them to expand their research and teaching programs to the levels necessary if Canada is to become a viable competitor in world high technology markets. Many universities are in such financial straights that they are hard pressed to maintain their current programs, let alone plan for any expansion.

We believe that the solution to this opportunity is greater university funding by both industry and government. At Digital we have recognized this need and in the past year have made a $25 million equipment commitment to support research at the University of Waterloo and smaller amounts to Carleton University, York University and Dalhousie University. We are giving serious consideration to other proposals and are committed to expanding our program of university support as rapidly as our resources will allow. We are also encouraging other companies in the high technology sector to provide support to appropriate university needs.

Office of the Minister of State
Cabinet du Ministre d'Etat

14 III 1985

Science et

DIGITAL EQUIPMENT OF CANADA LIMITED, P.O. BOX 13000, KANATA, ONTARIO, CANADA K2K 2A6

On the Government side, we see the work of the National Sciences and Engineering Research Council of Canada as a key initiative in ensuring that the best work in science and engineering across all Canadian universities is identified and provided with a level of funding. Without exception, in our contacts with universities, the references to NSERC and its President, Dr. Gordon MacNabb, are complimentary. The manner in which projects are selected by NSERC for funding has the support and confidence of the university community. It ensures both equity and the backing of worthwhile new scientific endeavours.

We are concerned with the level of funding available to NSERC. It is too small to properly fund enough of the good projects seeking funding. At this time, there is the further concern that there has not yet been government approval for the funding of the final year of NSERC's current five year program. We, in Digital, would urge you to make every effort to ensure speedy approval of this current funding requirement, and also to give serious consideration to augmenting the future funding of NSERC to the maximum possible level.

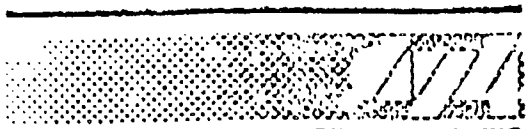
We believe this to be a very necessary investment in the future economy of Canada.

If there is any further information required on our views, we will be happy to cooperate.

Sincerely

K B Copeland

Kenneth B. Copeland
President



7 March 1985

Thomas Siddon
Minister of Science & Technology
Room 119-E
Centre Block
House of Commons
OTTAWA, Ontario
K1A 0A6

Subject: Natural Sciences and Engineering
Research Council of Canada (NSERC)

Dear Sir:

It is our understanding that NSERC program funding for the immediate future has not yet been approved. We would like to take this opportunity to communicate our support, enthusiasm and continued commitment to this important program.

DY-4 Systems Inc. is currently participating as the industry sponsor in a joint NSERC program with both Carleton and Ottawa universities. This program to develop computer-aided methods for designing real-time multiprocessor based systems, exemplifies the type of approach which must be taken if Canadian industries are to successfully compete in computer systems markets. We believe that by combining the strengths of the academic community with those of companies such as ourselves, significant competitive advantages will be gained which will translate directly into increased exports.

The application of the researching capabilities and knowledge of the universities to real world opportunities will help DY-4 to become a recognized industry leader in the area of real-time multiprocessor systems. In addition, the NSERC program is providing a valuable state-of-the-art training environment for the future employees of high technology companies.

Mr. Thomas Siddon
Minister of Science & Technology
House of Commons
OTTAWA, Ontario

7 March 1985

Subject: Natural Sciences and Engineering
Research Council of Canada (NSERC)

NSERC funding supports an extremely valuable link between industry and the academic sector. This link provides a mechanism for industry to communicate its future needs and priorities to the universities and for the universities to transfer their knowledge to industry.

We strongly recommend that NSERC funding be continued and wish to stress the importance of this program to the future success of our VMEbus products in North America and world markets.

Sincerely yours,

DY-4 SYSTEMS INC.

Garry Dool
President

GD/cb

c.c.: J.S. Riordon
Dean of Engineering
Carleton University
Room #360
C.J. Mackenzie Building
OTTAWA, Ontario
K1S 5B6

Mr. Jerry Turcotte
President
O.C.R.I.
1150 Morrison Drive
3rd Floor
OTTAWA, Ontario
K2H 8S9

Dr. G.M. MacNabb
NSERC
200 Kent St.
OTTAWA, Ontario
K1A 1H5

INVERPOWER CONTROLS Ltd.

835 HARRINGTON COURT BURLINGTON ONTARIO, CANADA L7N 3P3
TEL (416) 639-4692 TELEX 061 8249

March 7, 1985

The Honourable Tom Siddon
Minister of Science and Technology
Parliament Buildings
Ottawa, Ontario
K1A 0A6

Dear Sir:

I am writing this letter to encourage the Government of Canada to fund fully the 5th year of the NSERC 5 year plan, so that equipment grants can be continued this year. Also, I strongly request favourable consideration of the next 5 year plan, when it is presented later this year.

I am a professor of Electrical Engineering at the University of Toronto and for the past twenty years, I have been active in the University-Industry technology transfer. In 1980, together with two of my colleagues, I started Inverpower Controls Ltd., which is now a successful high technology company in the area of solid state power control.

Inverpower is a Canadian controlled corporation, which has annual sales of over two million; exports over 80% of products and services; spends over 20% of sales on R & D (no government subsidy); is self-financing with no debt; anticipates annual growth rate over 50%.

Inverpower has already established an international reputation and our sales have been to more than ten countries. I feel we are an example of what can be done in Canada and our success has been possible primarily because of the following:

1) Strong co-operation with the Electrical Engineering Faculty at the U. of T., which has an excellent R & D facility in the Power Conversion field. These facilities have been a result of continued seed support from NSERC over the past twenty years.

.../2

2) Development of high quality, trained personnel (graduate students and research associates), under NSERC support.

In my view, nothing would pay off better for Canada in terms of technical innovation and high quality job creation, than the support of both NSERC and NRC, with special emphasis on joint R & D in engineering, between Universities and companies.

Yours sincerely,

S.B. Dewan
President

INVERPOWER CONTROLS LTD.

SBD:rw
cc: see attached

Identical Copies of this letter were addressed to :

The Right Honourable Brian Mulroney
Prime Minister

The Honourable Flora MacDonald
Minister of Employment and Immigration

The Honourable Tom Siddon
Minister of Science and Technology

The Honourable Robert de Cotret
Minister of the Treasury Board

The Honourable Michael Wilson
Minister of Finance

The Honourable Sinclair Stevens
Minister of Regional Industrial Expansion

cc :

William Kempling
Member of Parliament, House of Commons

Professor D. Nowlan
Vice-President Research & Government Relations
Univeristy of Toronto

Dr. G.R. Slemon, Dean
Faculty of Applied Arts, Science and Engineering
University of Toronto

Mr. G. McNabb
President, NSERC

Ms. J. Halliwell
Director, Research Grants Division
NSERC

Dr. W. Coderre
Executive Manager
National Research Council

Bell Northern Research Ltd.
P.O. Box 3511 Station C
Ottawa, Ontario
Canada K1Y 4H7

BNR

March 4, 1985

The Hon. Tom E. Siddon, P.C., M.P.
Minister of State for Science and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Mr. Siddon:

The purpose of this letter is to provide BNR support to the activities of the Natural Sciences and Engineering Research Council.

Dr. Gordon MacNabb, President of NSERC, is about to complete the first five years of a successful program that has strengthened Canada's R&D capabilities through research and manpower training. BNR has found this program extremely beneficial, particularly in the areas of Semiconductor Technology, Electrical Engineering and Computer Science.

I feel that investment now in scientific and engineering research will feed a vigorous and profitable technical society. NSERC is a necessary ingredient in fostering the industry-government-univeristy liaison that is essential as we enter the Information Age.

I strongly urge you to continue your support to the NSERC program, to ensure its success over the next five years.

Yours truly,

J.A. Roth
President

Office of the Minister of State / Cabinet du Ministre d'Etat
12 III 1985
Science and Technology / Sciences et Technologie

cc: Dr. G.M. MacNabb
President
Natural Sciences and
Engineering Research Council of Canada
200 Kent St.
Ottawa, Ontario, K1A 1H5

MICROELECTRONICS

February 26, 1985

Office of the Minister of State / Cabinet du Ministre d'Etat

Honourable Tom Siddon, M.P.
Minister of Science and Technology
House of Commons
Parliament Buildings
Ottawa, Ontario
K1A 0A6

27 III 1985

Science and Technology / Sciences et Technologie

Dear Mr. Minister:

I'm writing to you in support of existing and proposed Natural Sciences and Engineering Research Council (NSERC) activities in the field of microelectronics.

NSERC's programs are of vital importance to the developing Canadian microelectronics industry, and to systems and equipment producers who need to use advanced microelectronics in order to obtain a sustaining world market share.

As you know, the mission of the Ontario Centre for Microelectronics is to help small and medium sized companies make maximum practical use of microelectronics, primarily in the area of customized integrated circuits (IC's) or "chips". This, in turn, creates an increased demand for graduate engineers familiar with IC design, and design aids technologies.

Canada must play a more significant role in the development and exploitation of these technologies. But, the achievement of such a role will strongly depend on the quality of university education and research.

NSERC's graduate scholarship program, project and equipment assistance grants, role in the establishment of the Canadian Microelectronics Corporation, and other activities have made an immeasurable difference in the progress Canada has achieved towards establishing its place in this most important area.

Most developed countries spend considerable sums of money in trying to establish a high technology base in order to preserve or obtain participation in the post industrial or information age. Canada must compete in this arena.

.../2

Therefore, we strongly recommend that NSERC's microelectronics related activities be maintained and further enhanced where possible.

I'd be happy to provide any further information to you on this matter should it be required.

Yours very truly,

Lionel Hurtubise
President

LH/jm

cc: Dr. Gordon MacNabb

Cognos Incorporated
(Formerly Quasar Systems)
Consulting Services Division
275 Slater Street
10th Floor
Ottawa, Ontario
Canada
K1P 5H9
Telephone (613) 237-1440
Telex 053-3341

COGNOS

February 14, 1985

Office of the Minister of State

Cabinet du Ministre d'État

26 II 1985

Science and Technology

Sciences et Technologie

The Honourable Tom E. Siddon, P.C., M.P.
Minister of State for Science & Technology
235 Queen Street
8th Floor, West Tower
OTTAWA, Ontario
K1A 1A1

Dear Mr. Minister:

Re: Funding of NSERC Programs

Cognos is concerned that the Government has not yet approved funding for the final year of NSERC's five year program supporting co-operative industry/university research.

We think NSERC's emphasis on industry-oriented research in universities is a key to continuing growth, profit, and job creation for Canadian high-technology companies such as Cognos.

Cognos has an employee earning a Ph.D. under the NSERC Industrial Post-Graduate Scholarship Program. As well, we are planning a major expansion of our research program. We are looking to NSERC's program and NRC PILP program to help us fund research contracts with the University of Ottawa and the University of Waterloo. These contracts will transfer vital new technology to Cognos and broaden the universities' research base.

With the support of NSERC and NRC, Cognos will introduce important new products in advanced computer languages and expert systems in 1988. These products will generate $15 to $30 Million in incremental revenue and 100 to 200 new jobs in Canada per year. Without the financial support of these programs, new product development, launch, and sales growth will be much slower.

. . . /2

COGNOS

To maintain our technological and market momentum, Cognos needs to access and to stimulate software expertise in Canadian universities. We believe NSERC programs supporting co-operative industry/university research are helping Cognos and other Canadian companies maintain their technological edge in an increasingly competitive global business environment.

We strongly support continued funding for these programs for both next year and the following five year period.

Yours very truly,

Michael U. Potter
President
COGNOS INCORPORATED

MUP:rrb

Electrical and Electronic Manufacturers Association of Canada

One Yonge Street, Suite 1608, Toronto M5E 1R1 (416) 862-7152

February 12, 1985

Office of the Minister of State / Cabinet du Ministre d'Etat

26 II 1985

Science and Technology / Sciences et Technologie

The Honourable Thomas E. Siddon
Minister of State for Science and Technology
House of Commons
119 East Block
Ottawa, Ontario
K1A 1A1

Dear Minister,

The reports that I have so far seen of last week's Calgary meeting of Science Ministers have been most encouraging. It is reassuring to see that there is so much recognition of the importance of science to modern industry and the reference to a National Science Policy is similarly encouraging. EEMAC urges you to maintain an initiative that will get these principles into an active and effective form.

One of the most important underpinnings of any science policy is higher education. EEMAC has long believed that technical literacy in the schools and enlightened support of higher learning is bound, in time, to favourably affect industry and, in turn, have significant economic payoffs. That is why we believe that one of the most effective actions that could be taken right now is to protect that funding which allows the Natural Sciences and Engineering Research Council (NSERC) to plant so many research seeds in universities. We have valued the results of the Council's last five year plan which has significantly improved university interaction with industry.

Growth in R & D can only be gradual; it cannot be expected to suddenly increase. I am happy to tell you that R & D expenditures among EEMAC's members has been growing in recent years and is now in the region of 5% of gross revenues. While certainly the result of many factors, there can be no doubt that the investigative environment made possible by NSERC's grants has played a part. Any stagnation in the Council's

funding would seriously diminish our national thrust in science-based industry. The process used by the Council, in which industry plays a role, is an important linkage in making these grants so significant.

They form a vital part of that National Science Policy you seek and deserve our total support.

Yours truly,

David E. P. Armour

David E. P. Armour
President

DEPA/lb

cc: The Honourable Michael H. Wilson, Minister of Finance
The Honourable Sinclair M. Stevens, Minister of Regional Industrial Expansion

MITEL Corporation
350 Legget Drive
P.O. Box 13089
Kanata, Ontario
Canada K2K 1X3
(613) 592-2122

12 February, 1985

Hon. Thomas Siddon,
Minister of State,
(Science & Technology)
House of Commons,
119 East Block
Ottawa, Ontario
K1A 0A6

Office of the Minister of State
Science and Technology

Cabinet du Ministre d'État
Sciences et ...gie

25 II 1985

Dear Minister,

As Chairman of Mitel Corporation I would like to fully support the proposed NSERC 5 year program. Canada has already reached a level of world leadership in several high technology areas, particularly in communications, and we are now dependant on a steady flow of skilled people from our universities. The NSERC program is one of the key programs that stimulate industry-university interaction. This program will help Canada to further improve its world competitiveness in technology, and help provide the high quality jobs that Canada needs in the future.

Sincerely,

Michael C.J. Cowpland,
Chairman of the Board,
MITEL CORPORATION

MCJC/dc

270-03

acfas

ASSOCIATION CANADIENNE-FRANÇAISE POUR L'AVANCEMENT DES SCIENCES
2730, CHEMIN DE LA CÔTE-STE-CATHERINE
MONTRÉAL, QUEBEC H3T 1B7
TEL : (514) 342-1411

Montréal, 4 février 1985

Monsieur Thomas Siddon
Ministre d'Etat
Science et Technologie
Chambre des Communes
Ottawa, Ontario
K1A 0A6

Monsieur le Ministre,

Le Conseil d'administration de l'Association canadienne-française pour l'avancement des sciences (ACFAS) désire vous exprimer ses préoccupations concernant le financement du Conseil de recherches en sciences naturelles et en génie (CRSNG).

Votre gouvernement s'est donné comme objectif de doubler l'effort canadien de R-D en vue d'améliorer à long terme la capacité concurrentielle de notre économie sur les marchés internationaux. L'ACFAS souscrit pleinement à cet objectif dont la réalisation exigera toutefois une relance vigoureuse de la recherche universitaire et un développement accéléré des études supérieures, en particulier dans les sciences naturelles et le génie, si l'on veut disposer d'un nombre suffisant de jeunes chercheurs de haut calibre dans les disciplines clés pour permettre l'expansion prévue et assurer la relève des ainés, surtout à partir de 1990. La stratégie de votre gouvernement, tout en étant axée sur la stimulation du secteur industriel, doit obligatoirement passer par l'université, génératrice à la fois de connaissances et d'expertise scientifiques.

Au Canada, le CRSNG est le pivot du soutien à la recherche universitaire dans les sciences naturelles et le génie. Parmi les agences gouvernementales de financement de la recherche, il est perçu au Canada et à l'étranger comme un modèle d'efficacité. Une réduction de ses ressources entrerait en contradiction avec votre politique scientifique, particulièrement à cette période où les universités, soumises à de sévères compressions de leurs subventions provinciales de fonctionnement, éprouvent des difficultés croissantes à rencontrer les coûts d'infrastructure de la recherche.

Or, une grave incertitude pèse actuellement sur le CRSNG en ce qui concerne le concours des subventions d'équipements et d'infrastructure qui doit avoir lieu ce mois-ci. L'an dernier, l'attribution d'un budget supplémentaire avait permis au CRSNG d'injecter $32 millions dans ce programme vital pour le maintien de la qualité de la recherche universitaire. Cette année, le CRSNG n'a plus de fonds à consacrer à ce programme pour lequel les demandes soumises s'élèvent à près de $90 millions. Il nous apparait essentiel que votre gouvernement consente au CRSNG les crédits supplémentaires qui permettront de maintenir ce programme au moins au niveau de l'an dernier. Aux dernières nouvelles, cette décision était encore en suspens; nous ne doutons pas que vous en comprenez l'importance et l'urgence. Une décision négative représenterait un net recul, en particulier au moment où le CRSNG soumet son plan de cinq ans et où votre gouvernement est à établir ses stratégies de développements scientifique et industriel.

Nous sommes confiants que cette fois votre gouvernement agira en conformité avec ses objectifs et reconnaîtra l'apport indispensable des universités à l'activité scientifique du pays.

Veuillez agréer, Monsieur le Ministre, l'expression de mes sentiments les meilleurs.

Le directeur général

Guy Arbour

GA/jt

p.j.

c.c.: M. Bernard Bénard, président, ACFAS
M. Gordon M. MacNabb, président, CRSNG
M. Gilles Julien, directeur général, CRSNG
Tous les membres du comité exécutif

2 10 0.3

CANADIAN PETROLEUM ASSOCIATION

1500, 633 Sixth Avenue S W , Calgary, Alberta T2P 2Y5 Telephone (403) 269-6721

February 1, 1985.

The Hon. Thomas Siddon,
Minister of State for Science
& Technology Canada,
Jackson Building, 122 Bank Street,
Ottawa, Ontario. K1A 1A1.

The Hon. Patricia Carney,
Minister of Energy, Mines
& Resources,
580 Booth Street,
Ottawa, Ontario. K1A 0ER.

Dear Ministers,

Lithoprobe I, a multidisciplinary geoscience program to investigate the nature and evoluation of the lithosphere in Canada and funded by NSERC and EMR, has made considerable progress. Industry, both oil and gas and minerals, has had full input on its objectives, operations and interpretation of the results. The results to date are above our realistic expectations and will aid industry in its fundamental understanding of the earth's crust within Canada - important elements in the exploration for oil, gas and minerals. In addition, the application and interpretation of modern geophysical techniques benefits us in training geophysicists and developing a more knowledgeable research group capability within Government and University.

It is now proposed to undertake Lithoprobe II, a five-year program costing approximately 32 million dollars to be funded by NSERC and EMR. Industry would continue to have input on the objectives, operations and interpretation. The CPA believes that funding of such fundamental earch science research is essential to optimize the resource potential of Canada. When one considers the contribution of oil, gas and minerals to the economy of Canada and to government revenue, the CPA endorses and urges the Government of Canada to continue financial support to earch science research and specifically to Lithoprobe II.

Sincerely,

Chairman.

Office of the Minister of State / Cabinet du Ministre d'État

c.c. Mr. D. Organ, Chevron.
Mr. J. Rivette, Petro-Canada.

18 II 1985

Science and Technology / Sciences et Technologie

Alcan International Limited
Kingston Laboratories

Mail Address Box 8400, Kingston, Ontario, Canada K7L 4Z4
Telephone 613 544 4500 • Telex 05-[illegible] • Cable: Alcanint

29 January 1985

Office of the Minister of State / Cabinet du Ministre d'Etat

The Honourable Thomas Siddon
Minister of State for Science and Technology
Parliament Buildings
Ottawa, Ontario

7 II 1985

Science and Technology / Sciences et Technologie

Dear Sir,

The purpose of this letter is to indicate to you the value to Alcan, and we believe to Canadian industry in general, of the Natural Sciences and Engineering Research Council of Canada programs. We believe that they are one of the most effective ways for the government to foster:

a) Increasing contact and cooperation between universities and industry.

b) Development of skilled help to brighten Canada's technological future.

If Canada is to secure its future, solutions must lie in the increasing application of technology to maintain the competitiveness of existing industries, to expand their product line, and to develop new directions for product and process technology. If we in Canada are to achieve this solution, there must be closer cooperation between universities and industry, so that our science and engineering graduates develop the skills necessary to create new industries and improve the competitiveness of existing ones. We in industry must play our role in bringing Canada to this improved competitive position but we hope to do it in partnership with universities and government.

We have had experience with the NSERC programs and their predecessors. They have been invaluable to us in helping to expand our research capability and Alcan's competitive position. We hope that the Government will continue to fund the current NSERC efforts, as we have found them to be well oriented and valuable to us.

Yours truly,

J. P. McGeer
Director

JPM:aw

Copy to:

Dr. H. Wynne-Edwards: Montreal

SUPPORT OF NSERC FIVE-YEAR PLAN

FROM UNIVERSITIES

SUPPORT OF NSERC FIVE-YEAR PLAN
(FROM UNIVERSITIES)

J. Gordin Kaplan
University of Alberta

E.O. Anderson
CAUT

Roland Doré
NCDEAS

Rémi Arsenault
Ordre des ingénieurs
du Québec

Dr. Rudy Boonstra
University of Toronto

Roger Downer
University of Waterloo

L.T. Bruton
University of Calgary

Douglas Wright
University of Waterloo

D.P.S. Verma
McGill University

J. McNeill
Canadian Council of
University Biology
Chairmen

John M. Dewey
CAURA

J. Clair Callaghan
Technical University
of Nova Scotia

Dr. Anthony Manning Perks
University of British
Columbia

Ted Schaefer
University of Manitoba

John M. Webster
Simon Fraser University

D.W. Dunham
University of Toronto

Ellen W. Rapport
University of Toronto

H.C. Clark
University of Guelph

Mary Ann White
Dalhousie University

L. Harris
Memorial University of
Newfoundland

J.R. Nursall
Biological Council
of Canada

Gilles Boulet
Université du Québec

Roland Doré
École Polytechnique

A.T. Stewart
Queen's University

.../2

(University Support)

Stan Blecher
Canadian Association
of Anatomists

R.B. Church
University of Calgary

Dr. Rosemary Mackay
University of Toronto

Bernard J.R. Philogène
Université d'Ottawa

J.S. Riordon
Carleton University

R.B. Jordan
University of Alberta

Bulent Mutus &
Douglas W. Stephan
University of Windsor

G. Robin South
Biological Council
of Canada

QUOTES FROM LETTERS FROM UNIVERSITIES TO GOVERNMENT
IN SUPPORT OF NSERC FIVE-YEAR PLAN

"... all fundamental and most applied research in our Faculties of Science, Engineering and Agriculture are dependent upon NSERC for their very existence."

From:

J. Gordin Kaplan
Vice-President (Research)
University of Alberta

July 18, 1985 To: Hon. Tom Siddon
Rt. Hon. Brian Mulroney,
Rt. Hon. J. Clark
Hon. H. Andre
Hon. D. Mazankowski

"I would like to commend both Canada and NSERC for achieving administration without bureaucracy, support without rigid direction, and encouragement of talent without the production of small and grasping cliques."

From:

Dr. Anthony Manning Perks
Professor of Zoology
University of British Columbia
Honorary Faculty Research Scholar
College of Medicine,
University of Florida

January 31, 1985 To: Hon. Tom Siddon

"... NSERC is regarded as a model in the Western World for successful government and university partnership in supporting scientific and engineering research."

"The Progressive Conservative government should reinforce this important national resource."

From:

E.O. Anderson
President
Canadian Association of University Teachers/CAUT

August 27, 1985 To: Hon. Tom Siddon

"I know, of course, that money is scarce and that you are under tremendous pressure in your decision making. On the other hand, it seems to me that nowhere would money be better spent than for increased funding for NSERC in its next five year period. As an older researcher, I can say that perhaps it doesn't matter for me. It does matter for our young bright engineers and scientists, on whom the country will depend very much in the next 30 years."

From:

Ted Schaefer
University Distinguished Professor
University of Manitoba

March 26, 1985 To: Hon. Flora Macdonald

"The National Committee of Deans of Engineering and Applied Science (NCDEAS) wishes to express its full support for the second five-year plan of the Natural Sciences and Engineering Research Council (NSERC)."

"It is the opinion of the Committee that all of the major needs mentioned in the plan are important for the future of research in this country."

From:

Roland Doré
Chairman,
NCDEAS

September 9, 1985 To: Hon. Robert R. de Cotret
Hon. Tom Siddon
Hon. E. Neilsen
Hon. Sinclair Stevens
Hon. M. Wilson
cc G.M. MacNabb

"I strongly endorse your endeavors to obtain increased funding for NSERC. In view of the precarious financial state of many of our major research universities, it is of paramount importance in your development of a national science programme (related in part to industrial needs) that NSERC receives strong support for its long term plans and for its immediate needs."

From:

John M. Webster
Associate Vice-President
Simon Fraser University

June 19, 1985 To: Hon. Tom Siddon
cc Rt. Hon. Brian Mulroney
Hon. E. Nielsen
G. McNabb
S. Smith

"Est-il nécessaire d'insister sur l'importance de la recherche en milieu universitaire?"

"L'enseignement sera d'autant plus à point que la recherche occupera une place importante dans la vie de la faculté de génie."

"Nous croyons que le gouvernement fédéral devrait faire connaître ses intentions quant au financement du CRSNG."

"... nous sommes convaincus que si notre pays doit rester dans la course au développement technologique, il le fera en consacrant des efforts considérables, pécuniaires particulièrement, à la recherche universitaire, à la formation d'ingénieurs hautement compétents et capables d'assumer ce développement technologique."

"Nous avons envoyé pareille lettre à Messieurs Wilson et de Cotret."

From:
R. Rémi Arsenault
Président
Ordre des ingénieurs du Québec

February 8, 1985 To: Hon. Tom Siddon

"To a very large degree, our contribution to man's expanding knowledge of the universe around him, and the international reputation of Canadian science, depend on the success of NSERC granting programmes. I urge you to give this fine organization you full support."

From:
D.W. Dunham
Professor of Zoology
University of Toronto

February 11, 1985 To: Hon. Tom Siddon
cc Rt. Hon. Brian Mulroney
Hon. R. de Cotret
Hon. M. Wilson

"University research programs require steady, rather than erratic funding."

"University research has a number of significant spinoffs which benefit Canada."

"NSERC essentially provides the opportunity to develop the mental resources to meet the needs of an increasingly complex world."

"I believe that a Conservative government must be dedicated to excellence in basic research if we are to bring Canada into the 21st Century as an advanced nation."

From:

Dr. Rudy Boonstra
Associate Professor of Zoology
Scarborough College
University of Toronto

February 7, 1985

To: Hon. Tom Siddon
cc Hon. Flora MacDonald
Hon. Sinclair Stevens
Hon. Michael Wilson

"I am writing to convey to you my conviction of the vital importance of NSERC funding for creating a creative and productive environment in our research community."

"It is NSERC money which provides the essential infrastructure for a great deal of our contribution to science and technology. We cannot afford to diminish this fount of national creativity."

From:

Ellen W. Rapport
Associate Professor
Department of Zoology
University of Toronto

December 11, 1985

To: Hon. Robert de Cotret

"The five-year plan offers a compelling demonstration of the creative leadership that NSERC continues to provide to Canadian research and, if adopted, is likely to ensure effective utilisation of research resources for industrial and economic development."

From:
Roger G.H. Downer
Professor of Biology and Chemistry
Advisor on Research to the Vice-President, Academic
University of Waterloo

July 23, 1985

To: Hon. Tom Sidon
cc Rt. Hon. Brian Mulroney
Hon. Sinclair Stevens
Hon. Michael Wilson

"In requesting support for the NSERC five-year plan, we also recognize the need for very substantial increase in the funding of applied research and development in direct collaboration with the industrial sector."

"NSERC-funded science is an essential component of a balanced Canadian science system."

From: **H.C. Clark**
Vice-President Academic
University of Guelph

August 23, 1985

To: Rt. Hon. Brian Mulroney
cc Hon. Tom Siddon

"Implementation of the Second Five Year Plan is vital because it is the only significant mechanism available to the Federal Government that will give Canada the necessary source of highly qualified manpower required for the application of modern science in industry."

From:
L.T. Bruton
Dean of Engineering
The University of Calgary

July 17, 1985

To: Hon. Tom Siddon
Hon. Eric Nielsen
Hon. Harvie Andre
Hon. Flora MacDonald
Rt. Hon. Brian Mulroney

"NSERC's policy of supporting the best research and the best researchers, regardless of area, is extremely far-sighted, and truly a model for the international scientific community."

From:

Mary Anne White
Assistant Professor
Department of Chemistry
Dalhousie University

August 2, 1985

To: Hon. Michael Wilson
cc Hon. Tom Siddon

"For research funding, there are several reports and analyses that say that the federal research granting councils should move to a fully funded basis for research, following American practice. This would have an enormous beneficial influence for the research universities that are so important to this country. The recently published NSERC 5-year plan proposes a move in this direction."

From:

Douglas Wright
President
University of Waterloo

July 25, 1985

To: Rt. Hon. Brian Mulroney

"University researchers from across the country owe NSERC a vast debt for keeping us within reach of excellence during a period when government support of universities has fallen far below clearly indicated national needs."

From:

L. Harris
President
Memorial University of Newfoundland

August 29, 1985

To: G.M. MacNabb
cc Hon. Tom Siddon
Hon. John Crosbie

"... we must produce sufficient world-class Canadian researchers to meet the demands of our industries and universities. This can best be achieved by creating at least 50 centers of excellence (10/year) at major universities supported under the second 5 year plan of NSERC."

From:
D.P.S. Verma
Professor & C P Scholar
McGill University

May 8, 1985 To: Hon. Tom Siddon

"As the report points out (p. xxiv) the Five-Year Plan is budgetted at $200 million less than one year's subsidy of frontier and exploration through PIP. Oil exploration may bring in cash; NSERC's constituency will bring in cash but it will also maintain and enhance our national reputation because of the knowledge and values developed."

"The purpose of this letter is to confirm to you that the Biological Council of Canada, representing some 4000 biological scientists, stands solidly in support of NSERC and its plans to move sturdily into the future."

"NSERC is more than just an agency doling out cash; it is a pacemaker, closely attuned, by its association with scientists, to the needs of science in Canada."

From:
J.R. Nursall
President
Biological Council of Canada

July 12, 1985 To: Hon. Tom Siddon
cc Hon. Erik Nielsen

"We very much hope that the government will live up to its commitments to support the essential research base of the Canadian economy and that you will be in a position very soon to reassure us that the serious shortfall in NSERC funding will be made up."

From:
J. McNeill
President
Canadian Council of University Biology Chairmen

July 3, 1985 To: Hon. Tom Siddon

"Comme il est rappelé dans le Plan quinquennal du Conseil, le Canada se doit d'importer actuellement 90% de sa technologie et une part significative de sa main-d'oeuvre scientifique. C'est précisément en vue de contribuer à contrer une telle situation qu'ont été définies les orientations du Conseil pour les cinq (5) prochaines années."

From:
Gilles Boulet
Président
Université du Québec

September 9, 1985 To: Hon. Tom Siddon
cc Hon. Robert R. de Cotret
Hon. Sinclair Stevens
Hon. Michael Wilson

"NSERC has therefore put forward its second Five-Year Plan, which identifies Canada's requirement for highly qualified manpower as its top priority. We would urge your Government to accept and implement the Five-Year Plan as a king-pin to Canada's economic future."

From:
John M. Dewey
President
CAURA

August 20, 1985 To: Hon. Tom Siddon

"Une priorité dans les activités de recherche des universités francophones, depuis quelques années, a été la collaboration avec l'industrie."

"... la proportion des subventions du CRSNG accordées aux u;niversités francophones du Québec dans le cadre du nouveau programme conjoint universités-industrie a été de 16%, ce qui est sensiblement supérieur à la prportion d'environ 12,9% pour l'ensemble des subventions."

"... donner à la communauté scientifique l'aide dont elle a absolument besoin en accordant une réponse positive au plan du CRSNG."

From:
Roland Doré
Directeur
École Polytechnique

August 27, 1985 To: Rt. Hon. Brian Mulroney
cc Hon. R. de Cotret Hon. Eric Neilsen
Hon. Tom Siddon Hon. Sinclair Stevens
Hon. Michael Wilson

"You will probably recall that in the general election held last year, Mr. Mulroney gave strong support to increasing Canada's R&D effort. NSERC has just completed a first five year plan, and is about to embark upon a second one. Acceptance and implementation of this plan is essential if Canada is not to fall far behind the rest of the industrialised world."

From:
J. Clair Callaghan
President
Technical University of Nova Scotia

June 28, 1985

To: Stewart McInnes, Q.C., M.P.
cc G.M. MacNabb

"The Second Five Year Plan of President MacNabb is well thought out plan for the support of (mostly) university research in science and engineering in Canada."

"We should get on with the job as quickly as possible."

From:
A.T. Stewart
President
Academy of Science
Queen's University

September 9, 1985

To: Hon. Tom Siddon
cc Hon. Flora MacDonald

"Specifically we petition you, along with other members of the scientific community, to show this support by approving increased funding for the National Science and Engineering Research Council."

From:
Stan Blecher
Canadian Association of Anatomists
University of Guelph

January 3, 1985

To: Rt. Hon. Brian Mulroney
cc Hon. Tom Siddon
Hon. J. Epp
Hon. F. MacDonald
Hon. J. Fraser
Hon. S. Stevens
Hon. J. Wise
Hon. P. Carney
Hon. G. Merrithew

"Both academic and industrial researchers across Canada could give you dozens of examples of the strong support and direction which NSERC has given to research and development in Canada."

"A well directed R&D program is a vital investment in the future of Canada. I urge you to continue to support the outstanding work of the Natural Sciences and Engineering Research Council."

From:

J.S. Riordon
Dean of Engineering
Carleton University

February 19, 1985 To: Hon. Tom Siddon

"As a businessman, I fully support the efforts of the Federal Government in cuting the Deficit. I do recognize your Government has severe budgetary constrainsts facing it. Nevertheless, I believe that within present budgetary expenditures an investment in the future through university and university-industry research must be of highest priority for table funding."

"Suggestions that NSERC should fund fewer scientist of excellence would be an investment in current science, whereas the current broader grant program is an investment in the future!"

"I therefore am somewhat concerned when I see the size of research administration in Government Departments. Even MOSST is expanding, perhaps at the expense of effective and efficient granting agencies, which have NO long term commitment to those funded across the country. I feel that the Federal Government gets the biggest bang for its bucks through its granting agencies since the selection is done by volunteers."

"I applaud your proposals for tax incentives, government procurement policies, export market assistance and particularly, increased funding for research and development as long as it is based on a peer reviewed system to support the basic through to applied."

From:

R.B. Church
Medical Biochemistry &
Associate Dean (Research)
University of Calgary

September 13, 1985 To: Hon. Tom Siddon

"It is often forgotten in Canada that the basic research done at Universities is a cornerstone of a strong science and technology program. This research is the fuel for the program, providing the basic ideas, advice, and trained personnel that are required."

From:

R.B. Jordan
Chairman
Department of Chemistry
University of Alberta

November 23, 1984 To: Hon. Tom Siddon

"The process of funding by NSERC means that we can adjust the focus of the research if the results suggest a new line."

"Many of my colleagues in other countries are funded only for specific and rigorously applied projects; they are blind to the larger scientific discoveries that the work might reveal. I deeply appreciate the way NSERC operates, in allowing me as a scientist to work on a broad front that includes basic as well as applied perspectives."

From:

Dr. Rosemary Mackay
Associate Professor
Associate Chairman/Zoology
University of Toronto

January 7, 1985 To: Hon. Tom Siddon

"We have noted that you called for a doubling of the national expenditure on R&D and for the "building up of Canada's science and technology capabilities from existing strengths". The point needs now to be made that our applied science can never be better than the quality of the basic science we have available."

From:

Bulent Mutus &
Douglas W. Stephan
Department of Chemistry
University of Windsor

December 3, 1984 To: Hon. Tom Siddon

"Suivant la réaction du Cabinet et selon les fonds que le gouvernement fédéral décidera d'allouer au CRSNG on risque d'assister à un démembrement irréversible des équipes de recherches qui équivaudrait à un coup de grâce pour la science fondamentale dans notre pays."

From:

Bernard J.R. Philogène
Professeur et Vice-Doyen
Université d'Ottawa

November 12, 1984 To: Mr. B. Turner, M.P.
Carleton-East

"We have been encouraged by the Progressive Conservative Party's commitments to science, and hope that through an expression of these concerns you will endeavour to ensure that the additional funding needed by NSERC for the coming fiscal year will be provided, and that these funds will be incorporated in the A base in future years. Without this commitment and the ability to undergo long term planning, NSERC will be unable to implement the important programmes funded during the first phase of its 5 year plan."

From:

G. Robin South
President
Biological Council of Canada

November 2, 1984 To: Hon. Tom Siddon

"The 1979-80 Conservative government bravely initiated new scientific manpower programs, including the NSERC University Research Fellowships."

"It is essential that research support for young (and older) Canadian scientists be maintained in order to keep our most precious natural resource - mind power - in Canada."

From:

Mary Ann White
Assistant Professor(Research)
Dalhousie University

November 21, 1984 To: Hon. Tom Siddon

association des bibliothécaires et des professeurs de l'université de moncton
moncton, nouveau-brunswick E1A 3E9 canada

le 1 octobre 1985

L'honorable Tom Siddon
Ministre d'Etat aux Sciences et
à la Technologie
Chambre des Communes
Ottawa, Ontario
K1A 0A6

Monsieur le ministre,

Nous, du monde universitaire, nous étions ravis d'apprendre lors de la dernière campagne électorale que le parti progressiste conservateur allait porter une attention spéciale au financement de l'enseignement supérieur et particulièrement à la recherche et au développement.

Le Canada est constitué d'une mosaïque assez variée de régions qui ne sont pas toutes également équipées en possibilités de recherche pour explorer et exploiter les ressources naturelles et humaines qui font la richesse de notre pays. Cependant, tout nous laisse croire que le gouvernement est disposé à consacrer des sommes d'argent appréciables pour développer nos richesses bien à nous et à ne pas compter sur l'étranger pour fournir les chercheurs dont le Canada aura tant besoin au cours des prochaines décennies. Car il nous faut éviter à tout prix l'exode de nos cerveaux vers des régions plus ouvertes à l'investissement dans la recherche et le développement.

Nous nous réjouissons du fait que le Conseil de recherche en sciences naturelles et en génie a présenté un plan quinquennal qui contient des augmentations considérables pour renflouer le financement de la recherche universitaire. Il s'agit là, bien sûr, d'un calcul rationnel et généraux qui mérite l'appui des canadiens si nous voulons prendre en main notre propre développement.

Cependant, le financement de l'enseignement supérieur des dernières années n'a pas toujours semblé entrer dans les priorités des gouvernements fédéral et provinciaux au point de les amener à s'entendre volontiers sur un processus adéquat et stable de partager des responsabilités en la matière. Nous osons croire que sur cette question, l'avenir sera plus prometteur.

...../2

Le sous-financement de l'enseignement supérieur au Canada a eu pour effet d'une part d'affecter considérablement la qualité des enseignements sur les campus universitaires. Mais, d'autre part, ce qui est plus grave à longue échéance, c'est l'érosion du financement des coûts indirects de la recherche dans le maintien et l'amélioration du matériel de soutien dans nos bibliothèques et laboratoires. Ne serait-il pas approprié que le gouvernement réserve des fonds nouveaux pour réparer les dommages et arriérages occasionnés par la vision myope des gouvernements de la dernière décennie?

Nous qui demeurons dans une des régions les moins favorisées du Canada, nous en sentons le besoin urgent et nous voulons croire que vous ne ferez pas la sourde oreille.

Nous voulons souligner une fois de plus que le gouvernement du Nouveau-Brunswick ne se laisse pas influencer par l'exemple du gouvernement du Québec qui participe pour sa part au financement de la recherche. Et en plus, nous ne pouvons pas compter sur l'industrie si clairement parsemée dans nos régions pour renflouer les budgets restreints consacrés à la recherche.

Veuillez croire, Monsieur le ministre, que nous appuyons vos efforts pour assurer un financement généreux de la recherche au cours des prochaines cinq années. Nous savons que c'est l'ensemble de la vie économique, culturelle et sociale des canadiens qui en sera le premier bénéficiaire.

Veuillez accepter l'expression de nos sentiments les meilleurs,

Arsène Richard

Arsène Richard,
vice-président ABPUM

AR:mg

c.c. M. Charles McMillan
M. Ben Wilson
M. J. Gordon MacNabb
M. Stuart Smith
M. A.E. Collin
L'honorable Michael Wilson
M. Dennis Cochrane

Université du Québec
Institut national de la recherche scientifique
Case postale 7500, Ste-Foy, Québec G1V 4C7
Téléphone: (418) 654-2500

Québec, ce 24 septembre 1985

Monsieur Gordon MacNabb, président
Conseil de recherches en sciences
naturelles et en génie
200, rue Kent
Ottawa (Ontario)
K1A 1H5

Monsieur,

Vous trouverez ci-joint l'avis de l'Institut national de la recherche scientifique sur le deuxième plan quinquennal du CRSNG.

Les commentaires sont en deux parties:

> La première qui tient lieu d'introduction est destinée à un public élargi; la deuxième qui se présente comme une annexe à la première n'aura qu'une diffusion restreinte. En effet, il nous semble que la première partie seulement pourra constituer un poids suffisant auprès des décideurs gouvernementaux à qui nous l'enverrons. La seconde est beaucoup plus technique et risque fort de ne rencontrer chez ces décideurs qu'un intérêt mitigé pour ne pas dire médiocre.

Nous tenons à vous féliciter pour l'excellence du document qui a été préparé et nous formulons les voeux les plus chaleureux pour que le conseil et à travers lui la recherche canadienne obtienne gain de cause dans ses besoins financiers.

Je vous remercie de votre attention et je vous prie de croire à l'expression de mes sentiments les meilleurs.

Le Directeur scientifique

JEDesnoyers

Jacques E. Desnoyers

c.c. A. Lemay, Directeur de l'Institut
AL/mgl

COMMENTAIRES DE L'INSTITUT NATIONAL DE LA RECHERCHE SCIENTIFIQUE
SUR LE PLAN QUINQUENNAL DU CRSNG

Nous avons lu avec grand intérêt le deuxième plan quinquennal du CRSNG. Ce plan, par son sérieux et sa justesse est le reflet d'un Conseil subventionnaire qui a su, grâce à son efficacité, se mériter le respect des chercheurs et des administrateurs de recherche tant au Canada qu'à l'étranger. C'est un organisme de haute qualité qui a, au cours des années, établi une solide réputation d'équité envers les chercheurs, doublée de sollicitude pour le devenir des sciences naturelles et du génie au Canada. C'est donc avec enthousiasme que l'INRS s'est penché sur le rapport et ses annexes.

Ce plan se divise en trois grandes sections. Dans la première, les auteurs font une analyse très juste et objective des réalisations des cinq dernières années. La première constatation qui se dégage est d'ordre historique et concerne les résultats obtenus par le biais du premier plan quinquennal: nous estimons qu'il est remarquable d'avoir atteint la plupart des objectifs en dépit d'un budget restreint pour le Conseil et en dépit de la situation financière dramatique des universités pour la poursuite de leurs efforts de recherche.

.../2

La première section du rapport a également le mérite de souligner les programmes qui fonctionnent bien, ainsi que ceux qui mériteraient d'être repensés, modifiés ou améliorés. Là encore on doit féliciter le Conseil de s'attaquer en profondeur aux besoins comme aux moyens de parvenir à les combler.

La deuxième partie s'attaque à la problématique des cinq prochaines années. Les deux priorités, formation de chercheurs et amélioration des relations université-industrie, nous semblent très réalistes dans le contexte actuel. En effet, on assiste depuis quelques années à un changement d'orientation du mode de financement de la recherche universitaire par le CRSNG, causé en grande partie par la situation précaire du mode de financement de la recherche universitaire. A l'époque du CNRC (avant 1978) on parlait de programme d'aide à la recherche, alors que maintenant on semble s'orienter de plus en plus vers un financement complet de la recherche dans les universités. La tendance nous apparaît très marquée, et cette orientation ne représente pas, d'après nous, un mal en soi. Toutefois, on ne peut régler ce problème des frais d'infrastructure et de coût indirect de la recherche sans simultanément s'attaquer aux problèmes des accords fédéraux-provinciaux sur l'enseignement post-secondaire.

Dans la section trois, le CRSNG propose une série de solutions pour atteindre les objectifs qu'il s'est fixé. En général, les solutions proposées nous semblent réalistes et les budgets adéquats. Par contre, il faudra être prudent pour éviter un certain nombre de pièges, comme celui d'une multiplication indue des programmes en se rappelant que "le mieux est l'ennemi du bien". Ceci peut mener à une lourdeur excessive du système. Il serait souvent plus simple de rendre certains des programmes existants plus souples et d'augmenter le budget de ces volets.

Il faudra aussi être prudent pour s'assurer que les nouveaux programmes ne favorisent pas, d'une façon excessive, les grands centres universitaires. Il faut toujours maintenir un bon équilibre entre deux besoins, celui de concentrer les ressources et celui de développement régional. Dans cet esprit nous aurions préféré une augmentation plus marquée des programmes comme le développement de la recherche, dans la mesure où nos universités québécoises font figure de parent pauvre par rapport à nos voisines ontariennes.

Nous présentons, en annexe, une série de réflexions sur divers programmes qui pourraient peut-être apporter des éléments de solutions aux divers problèmes qui ont été soulevés dans ce plan et des moyens d'éviter les pièges que nous avons mentionnés ci-haut.

En résumé, nous considérons ce plan comme très réaliste et pouvant apporter des solutions à long terme au développement technologique du pays et ainsi atteindre les objectifs qui ont été fixés par le Gouvernement. Nous recommandons donc fortement au Gouvernement de donner des suites favorables à cet excellent plan de développement de la recherche canadienne présenté par le CRSNG.

Commentaires particuliers

1. RECHERCHES DISCIPLINAIRES ET THÉMATIQUES

Il y a une ambiguïté certaine dans l'utilisation des termes pour décrire les différents types de recherche (du moins dans la version française du plan) et cette ambiguïté se répercute sur la description des programmes. La recherche disciplinaire est celle qui est orientée vers l'avancement des connaissances d'une discipline, habituellement dans le cadre d'une préoccupation fondamentale, alors que la recherche thématique concerne un domaine scientifique plus orienté qui utilise souvent les connaissances de plusieurs disciplines. La formation de base du premier cycle universitaire est surtout disciplinaire, cependant la recherche actuelle se fait de plus en plus à l'interface des différentes disciplines et a l'intérieur de thèmes, tels que les ressources naturelles, l'énergie, les matériaux, les colloïdes, etc. Comme le souligne le plan quinquennal, une partie importante de recherche fondamentale est réalisée par les chercheurs canadiens et gravite autour de ces thèmes à partir du programme de dépenses courantes (voir tableau ci-joint).

Le programme de dépenses courantes constitue la pierre angulaire du CRSNG. Étant axé sur l'excellence des chercheurs, il assure la qualité de la recherche universitaire. Par contre, les comités étant souvent monodisciplinaires, ce programme ne favorise pas les recherches interdisciplinaires ni celles orientées vers les grands thèmes mentionnés plus haut.

Le programme de subventions thématiques a été instauré pour combler ces lacunes. Tel qu'il existe présentement, il comporte plusieurs avantages, dont celui d'avoir permis à plusieurs bons chercheurs d'orienter leurs recherches vers des thèmes prioritaires pour le pays et d'apporter une contribution significative à la solution de problèmes. Par contre, il possède plusieurs inconvénients que le CRSNG n'a pas encore corrigés:

.../2

TABLE 5/TABLEAU 5

OPERATING GRANTS AWARDED IN 1984-85 BY PRIMARY AREA OF APPLICATION (Individual, Team and Co-op Grants)/ SUBVENTIONS POUR DÉPENSES COURANTES OCTROYÉES EN 1984-1985, PAR DOMAINE PRINCIPAL D'APPLICATION (subventions individuelles, d'équipe et coop)

	NUMBER/ NOMBRE	TOTAL AMOUNT/ MONTANT TOTAL
		$
Agriculture, Fisheries, Forestry, Food/ Agriculture, pêcheries, foresterie, alimentation	461	10,736,636
Energy/ Énergie	336	8,075,179
Environment, Management, Protection and Restoration Environnement, gestion, protection et restauration	264	5,521,883
The Solid Earth, Hydrosphere and Atmosphere: Exploration and Exploitation La Terre, l'hydrosphère et l'atmosphère: exploration et exploitation	272	6,131,960
Health/ Santé	374	8,027,124
Construction: Urban and Rural Planning/ Construction: aménagement urbain et rural	271	6,083,072
Social Development and Services/ Développement et services sociaux	240	3,686,166
Industrial Productivity and Development/ Productivité et développement industriels	590	12,964,015
Transport and Telecommunications/ Transport et télécommunications	208	4,272,591
Space and Aeronomy/ Recherche spatiale et aéronomie	38	1,269,557
Northern Development/ Développement du Nord	37	939,491
General Advancement of Knowledge/ Avancement général de la science	2,694	60,666,122
Not Reported/ Non identifié	158	2,974,995
TOTAL	5,943	131,348,791

- La limitation de la durée des subventions nuit à la formation d'équipes stables et à la formation de chercheurs dans ces domaines. Il est donc difficile d'entreprendre des recherches à long terme à moins que ces recherches ne cadrent bien avec un contexte disciplinaire, ce qui n'est pas toujours le cas. La société a cependant de plus en plus besoin de chercheurs et de spécialistes susceptibles d'oeuvrer à l'intérieur des domaines thématiques.

- La possibilité de participer à la fois aux programmes pour dépenses courantes et aux subventions thématiques présente parfois l'illusion de double financement ce qui en fait une arme à double tranchant. Assez souvent, également, les comités disciplinaires ont tendance à réduire la subvention des chercheurs bénéficiant d'une subvention thématique. Ces chercheurs se retrouvent donc pénalisés à la fin de leur subvention thématique. A long terme, cette situation aura un effet de découragement envers la recherche thématique, ce qui va à l'encontre des objectifs du CRSNG.

Le CRSNG devrait donc repenser ces programmes. Par exemple, on pourrait plutôt parler de subventions pour la recherche libre et de subventions pour la recherche stratégique, et s'assurer que l'une n'a pas d'influence sur l'autre en ce qui a trait au niveau de financement d'un chercheur.

Le programme de subventions pour dépenses courantes pourrait donc être modifié pour inclure graduellement un certain nombre de thèmes d'ordre fondamental mais reflétant l'interface entre des disciplines classiques. Nous ne suggérons donc pas l'instauration de comités "sous-disciplinaires" mais bien de comités "interfaces" ou thématiques. Un chercheur choisirait alors de présenter sa demande au comité de son choix:

chimie, physique, environnement, matériaux, énergie, etc. Ce changement augmenterait certes le nombre de comités, mais diminuerait la tâche de certains gros comités disciplinaires. Le nombre total de demandes n'augmenterait pas puisque chaque chercheur ne pourrait en soumettre qu'une seule selon la tradition. Toutes ces recherches libres, qu'elles soient disciplinaires ou thématiques, suivraient les mêmes critères d'excellence. Le CRSNG pourrait, par contre, inciter le développement des recherches vers certains thèmes en accordant des subventions moyennes plus élevées.

Cette intégration des programmes de recherche disciplinaire et de recherche thématique enlèverait beaucoup d'inconvénients au programme thématique actuel puisque ces programmes ne seraient plus limités dans le temps et que les difficultés reliées au double financement seraient minimisées.

On pourrait alors remplacer le programme actuel de subventions "thématiques" par un de subventions "stratégiques" au sens français du terme. Ces subventions viseraient la solution de problèmes prioritaires pour le pays à court et moyen termes. Le budget serait fonction du projet ainsi que la durée de la subvention. On exercerait en même temps un suivi beaucoup plus serré des progrès du projet à long terme. En enlevant toutes les recherches thématiques à long terme de ce volet, on pourrait élargir la gamme de sujets couverts et rendre les programmes plus souples.

Il est évident que les changements proposés ici ne peuvent se faire du jour au lendemain, mais l'exploitation de ces idées permettraient de résoudre plusieurs des difficultés identifiées un peu partout dans ce plan.

2. FORMATION DE CHERCHEURS

La formation de chercheurs est identifiée avec raison comme une des priorités du CRSNG dans son deuxième plan quinquennal. Il y a deux façons d'aider au financement et d'augmenter le nombre des chercheurs en formation; soit pas des bourses aux chercheurs, soit par des subventions plus élevées aux directeurs de recherche. L'attribution de bourses encourage les meilleurs candidats à poursuivre leurs études, par contre, elle ne permet pas d'avoir beaucoup d'influence sur l'orientation ou la spécialisation de ces chercheurs. D'un autre côté, l'augmentation de subventions aux directeurs de recherche permet de diriger les étudiants vers les meilleurs professeurs, mais par contre on exerce alors peu de contrôle sur la qualité des candidats. Ces deux approches sont donc complémentaires et un bon équilibre doit être maintenu.

Les programmes de bourses d'été pour les étudiants de 1er cycle est une heureuse initiative qui a comme effet d'encourager des étudiants à poursuivre leurs études vers la maîtrise et le doctorat. Ce programme devrait être aussi utilisé pour inciter les étudiants à changer d'université et, en particulier, pour encourager les anglophones à faire des stages dans les universités francophones. Une prime pourrait même être accordée dans ces cas en plus des frais de déplacement. Il y aurait peut-être lieu aussi de mieux définir la procédure d'acceptation des candidatures.

Le nombre de bourses aux étudiants gradués devrait augmenter de façon sensible si le deuxième plan quinquennal était accepté. Toutefois, l'augmentation du budget pour ce volet est comparable à ceux des autres programmes, ce qui concorde mal avec les affirmations du plan qui mettent la plus haute priorité sur la formation de chercheurs.

Le programme de bourses postdoctorales est important pour préparer la relève . C'est durant cette période que le chercheur complète sa formation, oriente sa carrière pour prendre un certain recul par rapport à ses recherches doctorales et effectue une réflexion sérieuse sur ses recherches futures. Il faut donc encourager ces stages. On peut évidemment payer ces stagiaires à partir des subventions, mais pour les mêmes raisons d'équilibre que nous avons mentionnées au début de cette section, il serait souhaitable d'augmenter le programme de bourses postdoctorales et de l'élargir. Par exemple, pourquoi ne pas trouver une façon incitative d'encourager les gradués anglophones à venir se perfectionner dans les milieux francophones, puisque l'inverse se fait déjà, et qu'ainsi on contribuerait à une meilleure polyvalence des chercheurs canadiens.

Nous avons par contre des réserves sur le nouveau programme de bourses postdoctorales à l'intention des chercheurs invités. On peut déjà payer ces chercheurs à partir des subventions de recherche et on risque de rendre plus alléchant l'engagement de postdoctoraux étrangers plutôt que des canadiens. Nous recommandons plutôt que le CRSNG élargisse son programme de relations internationales pour permettre à des membres d'une équipe (étudiants, assistants de recherche, etc.) de pouvoir bénéficier du programme qui est présentement limité aux professeurs eux-mêmes. En d'autres termes, les stages de recherche dans une équipe d'un autre pays sont souvent plus utiles pour le jeune chercheur que pour le professeur établi.

Le programme de bourses postdoctorales de recyclage est louable en soi, mais le CRSNG devra être vigilant pour que les professeurs n'utilisent pas ce volet pour uniquement augmenter leur salaire durant leur congé sabbatique. Le recyclage des professeurs tombe aussi sous la responsabilité des gouvernements provinciaux.

Le programme de professeurs-chercheurs est intéressant à condition d'être bien utilisé. Il peut aider à créer des centres d'excellence dans des domaines prioritaires. Il faudra toutefois être vigilant pour qu'un tel programme ne favorise pas indûment les grandes institutions qui par la simple raison du nombre peuvent plus facilement regrouper une équipe autour d'un thème.

3. NIVEAU DES SUBVENTIONS

Le CRSNG a fait une analyse intéressante des coûts de la recherche afin de voir s'il n'est pas possible d'augmenter la productivité des professeurs en place faute de pouvoir augmenter le nombre de professeurs. Il faut se rendre compte que les coûts de la recherche peuvent se comptabiliser par tranche d'environ 15,000$. Si on tient compte des dépenses courantes, de voyages, de publications, etc., on peut dire que pour chaque tranche de 15,000$, on peut engager, soit un étudiant gradué, un demi-postdocteur, 1/3 d'assistant de recherche. Donc, si on considère que le professeur-chercheur moyen devrait pouvoir fonctionner avec un adjoint post-doctoral et 3 étudiants, cette subvention moyenne se situerait aux environs de 75,000$. Ceci, par contre, est basé sur tous les revenus de l'équipe du professeur, incluant les bourses aux étudiants, les subventions d'organismes provinciaux, etc. En réalité, le bon chercheur fonctionne déjà à pleine capacité et on n'augmentera que de peu sa productivité en augmentant sensiblement son budget, alors que le chercheur médiocre le demeurera quelle que soit le niveau de ses subventions. C'est donc au niveau des chercheurs intermédiaires qu'une amélioration sensible peut être faite. Une analyse plus poussée de ces coûts devrait donc permettre de mieux situer le niveau souhaitable des subventions moyennes, disciplinaires et thématiques dans l'esprit de la section 1 de nos commentaires.

4. APPAREILLAGE ET INFRASTRUCTURE

Le plan soulève un problème grave et réel. Les universités sont de moins en moins capables de supporter les coûts d'infrastructure et les frais indirects de la recherche. Ceci est vrai pour l'infrastructure, nécessaire pour le fonctionnement d'appareillage spécialisé et pour les installations spéciales, mais est aussi vrai pour les frais indirects de recherche: atelier de mécanique, soufflage de verre, espace pour les laboratoires de recherche, secrétariat, etc. On se dirige donc graduellement, mais sûrement, vers une situation où les organismes subventionnaires devront assumer les coûts réels de la recherche. On ne peut donc pas séparer l'étude de ce problème de celui des ententes fédérales-provinciales sur l'enseignement post-secondaire. Ici, le CRSNG devrait jouer un rôle important pour orienter ces négociations dans la direction souhaitée pour le bien de la recherche au Canada. Dans l'intérim, le CRSNG doit éviter le piège d'instaurer un nouveau programme pour corriger une situation qui ne serait particulièrement aiguë que dans une province (Ontario) ou une région (Maritimes) c'est via le programme "Développement de la recherche" qu'on doit régler les cas particuliers.

5. PROGRAMME INDUSTRIE-UNIVERSITÉ

Ce programme est trop récent pour vraiment pouvoir porter un jugement sur son impact. La seule remarque que l'on pourrait faire à ce stade-ci serait de suggérer au CRSNG d'interpréter le partenaire industriel d'une façon assez large. Par exemple, certains partenaires gouvernementaux (e.g. ministères provinciaux) ou organismes paragouvernementaux (IREQ, CRIQ) devraient pouvoir se qualifier dans le but d'atteindre les objectifs du programme.

6. PROGRAMME DÉVELOPPEMENT DE LA RECHERCHE

Nous avons déjà donné notre avis sur ce programme dans un autre document soumis au CRSNG.

DALHOUSIE UNIVERSITY
Centre for Marine Geology
Halifax, N.S. Canada B3H 3J5 Telephone (902) 424-6461 Telex 019-22818

September 20, 1985

The Hon. Thomas Siddon
Minister of State for
Science and Technology
119 East Block
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Mr. Minister:

I am writing on behalf of the professional scientific staff of the Centre for Marine Geology to ask for your support in obtaining the funding required for the new 5 year plan of the Natural Sciences and Engineering Research Council (N.S.E.P.C.).

We are a group of twelve researchers who are actively involved in a number of areas of marine geology, of which interaction with industry currently involved in the exploration for hydrocarbons in the East Canada offshore area is a main interest.

Since formal establishment of our group by the Board of Governors of Dalhousie University in May, 1983, we have established two dedicated chairs with industry involvement, and are extensively involved in collaborative and contract work with both major and local companies, as well as with Federal agencies. Our Centre Advisory Board has strong industry representation and is chaired by Mr. Steven M. Millan, Vice-President, Exploration, Eastern Canada, Petro Canada Resources.

While we are very encouraged with industry involvement in our Centre, financial support from industry currently only accounts for an average of ten percent of our annual budget. Dalhousie University provides salary, support for most Centre members, who also carry full teaching loads, but is unable to support research activities directly. Thus, just over half of our budget derives from N.S.E.R.C., through a large number of their programs, notably the Strategic Grants - Oceans competition area. Our total grant income from N.S.E.R.C. has been averaging close to $1,000,000 per annum for the last three years.

It is our view that the opportunities for further Canadian growth of effort in the area of Marine Geology are very good. Not only is there a great deal of potential for growth in our involvement with industry, but we also judge it very timely to expand our scientific strength and activities in a number of topical research fields, such as the evolution of sedimentary basins, with implications for hydrocarbon formation; the formation of copper bearing sulfide ore bodies by study of active mineral bearing hot springs on the deep ocean floor, the development of instrumentation for use at sea, and the training of young Canadians and geologists from the third world in the methodology and results of geological work at sea. The expansions we wish to see take place are very dependent on us being able to seek a substantial part of the necessary funding from N.S.E.R.C. While N.S.E.R.C. have been very supportive of growth in our area in the recent past, they have been quite frank with us about possible difficulties in continuing to fund key parts of our operations, such as the continued employment of key, highly trained technical staff, should they not receive sufficient funding from government.

For these reasons, then, I would ask you most strongly to support what is for us a most important and far seeing initiative by N.S.E.R.C. to provide funds for the necessary growth of research leading to economic development in Canada.

We remain,

Sincerely yours,

J. M. Hall, Director

Associate Director

Matthew H. Salisbury, Prof.

Mark A. Williamson Research Assoc.

Paul Schenk Professor

Scientific Staff,
Centre for Marine Geology
Dalhousie University

SIMON FRASER UNIVERSITY

DEPARTMENT OF PHYSICS

BURNABY, BRITISH COLUMBIA V5A 1S6
Telephone: (604) 291-4465

17 September 1985

To all involved in funding of
NSERC infrastructure grants

The following history may provide some guidance to NSERC staff and committees as an example wherein the best intentions of planners may not produce the best of results.

Permit me to start from the immodest position that I have demonstrated from time to time some insight into the future. As a single example I point out that at the C.A.P. meeting in St. Johns in 1974 I proposed from the floor of the general meeting precisely the program that is now known as the University Research Fellowships.

When the five year plan for NSERC was announced in 1979, I was delighted to hear that along with the need to support large capital investments in the equipment necessary for much of today's forefront research it was also recognized that such equipment requires matching support for maintenance, both materials and technical manpower.

In the spring of 1979 I was asked to address the tri-annual meeting of the International Conference on Magnetism to be held in Munich that fall. In the closing session I was supposed to give my opinion on "Where is magnetism research going in the next three years?" By chance that invitation arrived in the same mail as the March issue of Physics Today, which was devoted to the subject of Molecular Beam Epitaxy. The question I posed was "What can MBE do for magnetism?" The answer was immediately apparent to me, for it concerned the primary aim of a life in the field of magnetism.

A free atom with a half filled d shell of electrons has $5\mu_B$ of magnetic moment. The same atom in a dense lattice does not. Magnetism occurs in Cr, Mn, Fe, Co and Ni metals, where the lattice spacing is not quite as small as it would be if there were no remaining magnetic moment, but that moment is not as large as in the free atom. The correlation between increase in volume and increase in moment is the key to making magnetic materials with higher magnetization. This I have known since graduate school. The key to increase magnetization is negative pressure. Molecular Beam Epitaxy is a means of applying negative pressure.

This was essentially the message I gave in Munich. The man who invited me to give the talk spent $600,000 U.S. within a month to enter the field. I went back to Vancouver without any anticipation that I would be able to make the transition into the field of Ultra High Vacuum tenchology for which I lacked significant experience or expertise. How could I convince a committee to give me that magnitude of money when I had no background in the use of such equipment?

...2

A few months later, the British Columbia Minister of Science and Technology, Dr. Pat McGeer, had the idea of funding just such major equipment that would be difficult to get from NSERC. It happened just once in the recent history of the Province. The Science Council of British Columbia provided $270,000 of the $410,000 requested for the basic system. This was enough for the bare bones of a ultra high vacuum laboratory. Since then NSERC provided $130,000 which allowed us to bargain with suppliers to obtain not only the capability in Auger analysis required for a working system, but also the power of X-ray Photoelectron Spectrometry. The latter tool has been the key to our recent scientific successes. Not only have we achieved $5\mu_B$ of magnetic moment per atom in metallic manganese using epitaxy for negative pressure, but also we have given evidence for the first time that magnetism in the ferromagnetic metals should be reinterpreted in terms of time fluctuations of the magnitude of the magnetic moment on each lattice site.

My principal concern as I rejoiced in the good fortune of our department in obtaining the MBE was the problem of maintenance and the need for technical support. The five year plan of NSERC was a source of comfort, for I was sure that with proper planning we could build the MBE laboratory to the point where it would qualify under any reasonable criteria as a suitable installation for infrastructure support.

It is to my dismay that despite the best of plans we have been turned down for three years in a row for the support that I contend we clearly deserve. For this there is no one to blame. Each year the circumstances of funding have been adverse for different reasons. Nevertheless it remains that the vision that I showed over five years ago in going into UHV technology for magnetism and the vision shown in NSERC's five year plan has not been matched by the effectiveness of the system. Fortunately, despite the very bad financial problems of the University, the Physics Department and the University Administration have found ways to save us from disasters, so far. The replacement value of the present Surface Science Laboratory is close to $2,000,000 Cdn. The Surface Science Laboratory was put together with major equipment grants to Dr. R.F. Frindt and to Dr. A.E. Curzon; in addition to a grant for the MBE machine itself. It is directed by Dr. B. Heinrich, among the best of Canadian scientists.

The surface science laboratory does first rate physics. It offers and provides first rate facilities to the University and Technical community. Most politicians in Canada say that they are in favor of High Technology. Magnetism is the focus of the magnetic recording industry which is currently larger than the entire semiconducting industry with sales of over $30 Billion U.S. each year. Silicon Valley is really Iron Oxide Valley. A revolutation in magnetic recording is upon us and Canada is not participating. If Canadians want High Technology, they need to encourage it. Against the background of what is going on elsewhere in magnetism ours is a very small program, but is something upon which Canada could build.

No attempt is made here to list the lost opportunities that have followed the failure of the system to provide the infrastructure support promised by the five year plan. This letter is an appeal to all involved in the funding system, to not let this program be further jeopardized.

Sincerely,

Anthony S. Arrott

THE PRINCIPAL
AND VICE - CHANCELLOR

Queen's University
Kingston, Canada
K7L 3N6

September 16, 1985

Dr. G. M. MacNabb
President
Natural Sciences and Engineering
Research Council
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Gordon,

NSERC's five year plan was received at Queen's University several weeks ago, but I have only recently had the opportunity to review it. I must congratulate you and your colleagues at NSERC for producing such a comprehensive and extremely readable account of your past achievements and of your proposals to establish a bridge to the 90s.

Under your able leadership, NSERC has assumed a dominant role in making representations to the government on behalf of the Canadian research community. Your arguments for a budget which more than doubles in real terms over the next five years are well thought out and convincing. I hope that your report will have the same impact on Cabinet.

Please be assured of Queen's support. I have written to the Right Honourable Brian Mulroney expressing this support, and I am urging faculty members to write to Ministers.

Again, congratulations on a job well done. Please let me know if Queen's can be of any assistance in your task of guiding your proposals through to implementation.

Yours sincerely,

David C. Smith
Principal and
Vice-Chancellor

THE UNIVERSITY OF CALGARY
Health Sciences Centre
3330 Hospital Drive N.W., Calgary, Alberta, Canada T2N 4N1

Faculty of MEDICINE
Department of MEDICAL BIOCHEMISTRY

Telephone (403) 284-6876

September 13, 1985

G. MacNab

The Honourable Tom Siddon
Minister of State for Science and Technology
Government of Canada
Parliament Buildings
Ottawa, Ontario

Dear Tom:

As an original member of the Natural Sciences and Engineering Research Council, whose term has finally expired, I would like to take this opportunity of thanking you for your dedicated interest and enthusiastic support of Science and in particular, NSERC, since becoming Minister.

The objectives of the first five-year plan of NSERC were met in many instances through a considerable increase in real funding. However, the enthusiasm for a scientific career which this stirred in scientists and students; the awareness of science and technology; the transfer of technology from universities to industry and manpower training are now starting to wilt in Canada. The second NSERC five-year plan attempts to address this in a constructive manner with more real dollars on a long term basis to complement ERDA agreements.

As a businessman, I fully support the efforts of the Federal Government in cutting the Deficit. I do recognize your Government has severe budgetary constraints facing it. Nevertheless, I believe that within present budgetary expenditures an investment in the future through university and university-industry research must be of highest priority for table funding.

The university research community is facing increasing demands on time, facilities and finances. Under such conditions undergraduate and graduate students easily become disillusioned with educational opportunities and opt out. It has been my experience that in the last five or six years undergraduate and graduate students have shown an increased interest in technological and scientific carerrs. This enthusiasm for science and engineering is evident in both large and small institutions in this country. I suspect that relatively meagre NSERC operating grants in smaller institutions in less highly regarded or fashionable research programs may have more impact on the education of engineers and scientists who will lead Canada's technological thrust in the next decade. Suggestions that NSERC should fund fewer scientists of excellence would be an investment in current science, whereas the current broader grant

program is an investment in the future! A quick review of the grantees supported by the Natural Sciences and Engineering Research Council reveals that at least 25% of those receiving NSERC grants in 1978 no longer receive competitive grants. NSERC is at the point of deceminating many Departments who have been unable for various reasons to hire new competitive researchers but do have access to and influence on many students.

My impression is that university research grants and development programs such as university-industry programs of NSERC are the most responsive and effective investments in research the Federal Government can make. As the Wright Report correctly, in my opinion, points out many Government Department research and development programs get lost in big government. I therefore am somewhat concerned when I see the size of research administration in Government Departments. Even MOSST is expanding, perhaps at the expense of effective and efficient granting agencies, which have NO long term commitment to those funded across the country. I feel that the Federal Government gets the biggest bang for its bucks through its granting agencies since the selection is done by volunteers; they are 1 to 3 year awards with no long term salary commitments; and every dollar awarded is leveraged at least by a factor of 2 by provincial or private funds.

It is now fashionable to conclude that the performance of Canadian high technology industries are not competitive with other developed countries. This may be true when one looks at the deficit in high technology products. However, some high technology science and engineering sectors servicing agriculture and the petroleum industry for instance, do not take a back seat to anyone. We do need to continue to run on this treadmill of progress! I applaud your proposals for tax incentives, government procurement policies, export market assistance and particularly, increased funding for research and development as long as it is based on a peer reviewed system to support the basic through to applied. The high level of foreign ownership in Canada does not seem to me to be the major reason for the dismal performance of high tech industry in Canada. In agriculture and the petroleum exploration industry we have large investments and competitive technology.

May I take this opportunity of saying how much I enjoyed the opportunity of participating in the formation of NSERC and its new direction. If I can be of aid in helping you with promotional research and development in Canada, please call. I believe any investment in people appreciates with the future while capital investments depreciate in the past!

Sincerely,

Bob Church

R.B. Church, Ph.D.
Professor
Medical Biochemistry &
Associate Dean (Research)
Faculty of Medicine

RBC/njf

To: Prof. A.J. Coleman
Department of Mathematics and Statistics

From: D.T. Canvin

Queen's University Memorandum

Date: September 13, 1985

Subject:

Dear John,

Thank you for reminding us to lobby for support of the NSERC Five-year plan. Dr. A.R. Eastham, the new Director of Research Services, prepared draft letters for the Principal. It is my understanding that the Principal will be sending these letters (or his revised versions) to the Prime Minister, Mssrs. Siddon, Wilson, Stevens and Neilson and to Flora MacDonald. It is my understanding that Walter Light, Chairman of the Board of Trustees, has also written to all or some of the above.

Dr. Eastham also prepared a memorandum (copy attached) which was sent to faculty to encourage the faculty to write letters. We hope we will get a good response from the user group.

We strongly endorse the proposals that have been put forward by NSERC and SSHRC for the next five years. They are very realistic and are essential for the future well-being of research. We will, at every opportunity, continue to lobby in support of the proposals.

If you think we can take further initiatives, please let us know.

Best wishes,

David T. Canvin
Dean
School of Graduate Studies & Research

DTC/hc
cc: Principal D. Smith
Dr. D. Sinclair
Dr. A. Eastham

To: All Faculty Eligible for Support from SSHRC and NSERC

From: A.R. Eastham
Director of Research Services

Queen's University Memorandum

Date: September 9, 1985

Subject: SSHRC and NSERC Five-Year Plans

Both SSHRC and NSERC need our support!

The Five-Year Plan for funding research in the Social Sciences and Humanities (1985-1990), and NSERC's second five-year plan "Completing the Bridge to the 90's" was published during the summer. Principal D.C. Smith has written to Dr. G. McNabb and to Dr. W. Taylor expressing his support for these plans on behalf of the Queen's research community; and to the Right Honourable Brian Mulroney to urge that Cabinet approve the plans and provide the level of support so urgently needed to support research in Canadian universities.

In capsule form the funding requests, in millions of constant 1985 dollars, are as follows:

	84-85 (base year)	85-86	86-87	87-88	88-89	89-90
SSHRC	60.9	74.5	90.4	100.4	110.7	121.6
NSERC	311.6	409.8	503.2	564.9	633.8	702.9

The School of Graduate Studies and Research and the Office of Research Services have a limited number of copies of the SSHRC and NSERC five-year plans, which faculty may examine (we don't have enough to loan these out - departmental offices may have additional copies). In order to give you the flavour of the contents, I have assembled some choice extracts, as attached.

SSHRC and NSERC hope that these plans will be brought before Cabinet in October. We believe that they merit our wholehearted support. Whatever reservations faculty may have about specific components of these plans, it would be in the best interest of the Canadian research community for a ground swell of support to be heard. We should lobby unashamedly for what we believe to be right and necessary for the development of Canada as an enlightened and industrialized nation.

You are therefore urged to send letters of support for the SSHRC and/or NSERC plans to Tom Siddon, to Flora MacDonald, and to any other Ministers you feel may be receptive to your letters.

We would appreciate receiving copies of your correspondence at the Office of Research Services.

A.R. Eastham
Director of Research Services

ARE/ac

EXTRACTS FROM THE NSERC AND SSHRC FIVE-YEAR PLAN

Intellectual capital has become the most important asset by which an industrialized nation can maintain economic growth, enhance the quality of life of its citizens and strengthen its cultural heritage. The capacity of a nation to generate new ideas, to adopt to change, to innovate, to make the most effective use of its national resources and to improve its productivity and international competitiveness are all critically dependent on an educated citizenry.

A strong and dynamic social sciences and humanities research community is essential to an enlightened, democratic, progressive and equitable society. Canada needs to generate more of its own research: to contribute to the solution of economic problems; to compete internationally; and to have access to, and adopt, internationally produced knowledge. Only in this way can we move from a resource-based to a knowledge-based society, while avoiding the common assumption that information is knowledge and that technology alone provides solutions.

(Without the action proposed) we will continue to fall behind the efforts of competing nations and we will be inviting our most talented researchers to seek out more stimulating opportunities elsewhere.

While university-based research is the best possible R&D investment, producing both research and research talent, it is also one of the major casualties of the current squeeze on university budgets.

... critical need for improved infrastructure and expanded research training through Research Manpower and Discipline Research programs.

... capital equipment needs a sound base of infrastructure support to be truly effective.

(Operating) grants provide the continuity of support that is essential if professors are to effectively pursue shorter-term targeted contractual research endeavours.

The current federal-provincial arrangements for the support of university research are sadly failing this nation at a time when such research, and the associated research training, have become critically important to our economic future.

Canada must become far more self-sufficient with regard to our intellectual resources. Immediate action is required throughout our educational system as the problem will intensify in the 1990's.

The incremental investment being sought by (NSERC's) plan over the next five years for the existing and future research talent of this country is indeed impressive and well beyond past experience; however, the total five-year incremental investment is $200 million less in real terms that the one-year investment in frontier exploration through the Petroleum Incentives Program in 1983-84 alone.

The second-half of this decade will be a critical period because the universities in Canada will be faced not only with an aging professoriate but, more than likely, with continued severe funding shortages at a time when their role of research institutions will become vital and when the need for the products of their graduate schools will be urgent.

The emerging source of basic economic strength for any society is not capital investment or natural resources, as important as they are. It is brain power. Our industrial society is now brain-intensive. It centres on knowledge which creates sophisticated products and manufacturing processes, while forming the techniques of management itself.

The most important role for government in creating the conditions for commercial innovation is to support universities in their efforts to generate research and provide manpower. The most crucial issue we face is a lack of skilled manpower, a shortage of faculty for training that manpower and a deteriorating research capability because of shortages of both faculty and modern equipment for instruction and research.

... if the vigour of democracy is to be maintained, the essential analytical function of the social sciences and humanities must be nurtured.

Never before has our future been more dependent on the innovation, creativity and enterprise of our people, for we must move from a resource-based to a knowledge-based society.

Therefore, as a nation, we must give priority to the enhancement of our intellectual resources by improving the quality of education at all levels, by increasing our investment in new ideas and by encouraging innovation in every sector of our society. The risks sometimes will be high, but we have no other choice if we wish to develop the future leaders of our industries, universities and government and to sustain and improve the quality of life for our people.

University of Toronto TORONTO ONTARIO M5S 1A1

OFFICE OF THE PRESIDENT

September 10, 1985

Mr. Gerald C. Gummersell,
President,
Corporate-Higher Education Forum,
Suite 2501,
1155 Dorchester Blvd. West,
Montreal, Quebec.
H3B 2K4

Dear Gerry:

After a year in office, the Conservative government in Ottawa may be ready to tackle issues of research and development that are important not only for members of the Corporate-Higher Education Forum, but for the whole nation.

In June, the Natural Sciences and Engineering Research Council released its second five-year plan, which proposes a funding and program strategy for enhancing the scientific research and educational capacity of Canada's universities over the period from 1985-86 to 1990-91. In August, the Social Sciences and Humanities Research Council issued its five-year plan for the same period. The equivalent plan for the Medical Research Council was prepared last year and is on the Minister of Health's desk, although not yet publicly released.

While these research-council plans await government approval, the Councils are struggling to cope with annual 1985-86 budget allocations that are inadequate even for past programs much less for the programs that have been carefully evaluated and proposed in the five-year plans.

Because the research-support programs of NSERC are most closely related to the interests of CHEF, I have enclosed the introductory pages of its new five-year plan. These pages set out the highlights of the plan and summarize its underlying justification. You will be impressed, I believe, with the care and thought with which the document has been constructed.

The importance of the plan for university and industry research and especially for industry-university cooperative ventures will be apparent. The need to attract more young Canadians into graduate schools is emphasized and programs to create closer links between university and industrial research are highlighted. The need better to equip university laboratories is recognized and the value of maintaining concentrations of high-quality, basic research in strategic areas is shown.

.../2

At Canadian universities, our research projects provide windows on front-line research around the world. Even though our individual laboratories may contribute to only a small fraction of the advancement in some areas, the existence of these activities gives our staff and students (many of whom will become corporate employees) access to what is happening internationally. But this only occurs if our work is itself of international calibre.

It is increasingly difficult to maintain this window on international research. Our main source of funding for the direct costs of scientific research are the federal research councils. NSERC is so constrained that its President, Gordon MacNabb, announced during a visit to Toronto last week that the Council's budget for equipment grants had been completely eliminated this year.

Although the present government in Ottawa came to power on a platform that appeared to support the need for a greater research effort in Canada, its actions so far do not suggest that it places a very high priority on this outcome. Many of us in universities are concerned that there may be continuing delay in dealing with the plans and the needs of the research councils, especially because the role of the councils may be debated in the context of the larger issue of university funding through transfers of revenue to the provinces.

The universities have been making and will continue to make the case for better levels of research support. It is especially important that we be joined in this effort by those in the private sector who also believe that Canada's growth and development are dependent on our ability to contribute to scientific and technological innovation.

It has been said that a letter from one CEO of a private company to a cabinet minister is worth twenty letters from twenty presidents of universities. I am happy to concede this point and would like though the Forum to urge all our corporate members to make their views known in Ottawa.

Very specifically, I think that the federal government should learn the extent of corporate support for the new NSERC Plan. I am told that it would be especially productive for letters to go to the Prime Minister, to the Finance Minister, to the Chairman of the Economic Development Committee of Cabinet (Sinclair Stevens) and to the Deputy Prime Minister (Mr. Neilson). Copies of any such letters might also go to Dr. Siddon, the Minister of State for Science and Technology, who is strongly supporting the NSERC Plan.

Yours sincerely

G. E. Connell
President

Encls.

THE ROYAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE DU CANADA

Academy of Science / Académie des sciences

Department of Physics
Queen's University
Kingston, Ontario
K7L 3N6

September 9, 1985

The Honourable Thomas Siddon
Minister of State for
Science and Technology
House of Commons
122 Bank Street
Ottawa, Ontario
K1A 1A1

Dear Mr. Siddon:

I understand from the Science Council that you are seeking advice on the funding of the three federal granting agencies.

From my own experience and knowledge I can speak about the Natural Sciences and Engineering Research Council.

The Second Five Year Plan of President MacNabb is a well thought out plan for the support of (mostly) university research in science and engineering in Canada. As you know we have a long way to go to achieve the level of technical competence in our society which will enable us to compete and survive as a modern nation. President MacNabb's plans are steps in the right direction. I support them whole heartedly. We should get on with the job as quickly as possible.

There are two further relevant and important points to be made:

A A gradually increasing fraction of N.S.E.R.C. research funds are being used to pay for the periferal costs of research which universities used to support but which they cannot continue to do. The conclusion drawn in N.S.E.R.C.'s Second Five Year Plan (p.126) in stark: "The current federal-provincial arrangement for the support of university-based research is sadly failing this nation. A new arrangement that addresses the specific and vital research role of the universities is required urgently."

B Manpower Most demographic studies show that it is very unlikely that Canada can produce enough well qualified scientists and engineers to meet future needs. Thus international recruiting is forced upon us. (International competition will exist anyway and unless we compete in recruiting we shall see only emmigration or "brain drain".)

. . . 2

The solution I advocate is a much extended program like NSERC's very successful University Research Fellowships and Industrial Research Fellowships. The extended program should be open to international competition and rather carefully advertised. Aside from acquiring a good reputation for Canada this program has two obvious benefits:

- The recruited Fellows would have much of their training already.
- The youth of these Fellows would allow most to fit into Canadian society and to continue to contribute their energy and talent to this country.

I hope these comments are of use to you and I will be happy to extend or elaborate if you wish.

Yours sincerely,

A. T. Stewart

ATS:bi

A.T. Stewart
President

cc: The Honourable Flora MacDonald
Dr. Stuart Smith, Science Council

Université du Québec

2875, boulevard Laurier, Sainte Foy, Québec
G1V 2M3
Téléphone (418) 657-3551
BUREAU DU PRÉSIDENT

Le 9 septembre 1985

L'Honorable Thomas Siddon
Ministre
Ministère d'Etat chargé des
Sciences et de la Technologie
Ottawa, Ontario
K1A 1A1

Monsieur le Ministre,

Le gouvernement canadien aura à se prononcer au cours des prochaines semaines sur le deuxième Plan quinquennal du Conseil de recherches en sciences naturelles et en génie du Canada. Considérant vos fonctions et le rôle que vous serez appelé à jouer dans la prise de décision du gouvernement à l'égard du Plan, je tiens à vous faire part de ma première réaction sur ce document du Conseil.

Mon impression générale, tant à l'égard des grands objectifs du Plan que des grands moyens identifiés pour les atteindre, est des plus favorables et il m'apparaît de mon devoir de vous faire connaître l'appui entier que j'accorde à la démarche du Conseil de recherches en sciences naturelles et en génie. Dans l'ensemble, les arguments fournis sont très bien appuyés et rejoignent l'analyse que l'Université du Québec fait des grands besoins de la recherche universitaire et de la contribution de cette dernière au développement technologique et économique du Canada.

Si le budget prévu par le Conseil peut sembler élevé, il n'en demeure pas moins qu'il ne fait que refléter l'état des besoins de la recherche universitaire au Canada. A cet égard, il importe de rappeler que les dépenses canadiennes de recherche et de développement ne représentent encore que 1,25% du produit national brut, ce qui est nettement inférieur au pourcentage consacré par les autres pays membres de l'Organisation pour la coopération et le développement économique. Le Canada se doit de déployer des efforts particuliers afin d'assurer le rattrapage et d'empêcher l'édification d'un retard

...

2596

technologique trop marqué par rapport aux autres pays industrialisés. Lorsqu'on évoque les importants besoins de la recherche universitaire, c'est précisément en vertu de l'impérieux besoin pour le Canada de développer une expertise technologique et scientifique en vue de consolider son avenir économique.

Il est indéniable qu'un effort national significatif pour le développement technologique et scientifique passe par la nécessaire contribution de la recherche universitaire. Comme vous le savez sans doute, les politiques et les pratiques des pays industrialisés sont orientées en ce sens. A ce propos, il faut reconnaître que les dirigeants canadiens ont retenu une approche semblable, mais n'ont pas, jusqu'à ce jour, consenti suffisamment de ressources financières.

Comme il est rappelé dans le Plan quinquennal du Conseil, le Canada se doit d'importer actuellement 90% de sa technologie et une part significative de sa main-d'oeuvre scientifique. C'est précisément en vue de contribuer à contrer une telle situation qu'ont été définies les orientations du Conseil pour les cinq (5) prochaines années. Ainsi, on prévoit consacrer 120 millions de dollars à la formation de chercheurs en 1989-1990 comparativement à 51,5 millions de dollars en 1984-1985. Sans un effort important à ce chapitre, le Canada se retrouvera devant une pénurie grave de spécialistes de pointe dans quelques années. On projette également de doubler les montants de subvention affectés à la recherche orientée.

Les autres activités pour lesquelles le Conseil demande aussi une augmentation significative de budget concourent aux mêmes grands objectifs. Par exemple, le renforcement prévu du programme sur l'infrastructure de recherche s'avère essentiel si on veut maintenir la capacité de recherche des universités. Confrontées à des difficultés financières très sérieuses, les universités n'ont plus en effet les ressources nécessaires pour combler les besoins d'infrastructure.

Enfin, j'aimerais attirer votre attention sur l'action du Conseil de recherches en sciences naturelles et en génie face au développement régional. Les politiques du Conseil contribuent à développer une capacité de recherche et de formation dans la très grande majorité des régions canadiennes avec tout ce que cela implique en termes de développement social et économique. C'est d'ailleurs dans cette perspective que le Conseil soutient un programme de développement de la recherche destiné aux universités qui ont un besoin d'aide particulier pour leurs activités de recherche.

...

Je souhaite que ces quelques réflexions contribueront à vous sensibiliser encore davantage à l'importance que le gouvernement donne une suite favorable au deuxième Plan quinquennal du Conseil de recherches en sciences naturelles et en génie.

Je vous prie d'agréer, monsieur le Ministre, l'expression de mes sentiments les plus distingués.

Le président,

G. Boulet

Gilles Boulet

GB/mfp
c.c.: L'Honorable Robert R. de Cotret, vice-premier ministre et ministre de la Défense nationale
L'Honorable Sinclair Stevens, ministre de l'Expansion industrielle régionale
L'Honorable Michael H. Wilson, ministre des Finances
Les chefs d'établissement du réseau de l'Université du Québec
c.c.: M. Gaston Hétu

National Committee of Deans of Engineering and Applied Science

Comité National des Doyens de Génie et Science Appliquée

c/o Ecole Polytechnique
P.O. Box 6079, Branch A
MONTREAL (Québec) H3C 3A7 (514) 340-4943

September 9, 1985

The Honorable Thomas E. Siddon, P.C., M.P.
Minister of State
Science and Technology
235 Queen Street, 8°fl. West
OTTAWA (Ontario) K1A 1A1

Dear Dr Siddon:

The National Committee of Deans of Engineering and Applied Science (NCDEAS) wishes to express its full support for the second five-year plan of the Natural Sciences and Engineering Research Council (NSERC).

NCDEAS groups together all 31 deans of engineering of Canadian universities, as in the enclosed list.

It is the opinion of the Committee that all of the major needs mentioned in the plan are important for the future of research in this country. We note, in particular, that action is called for to preserve free research activities in universities, to forge closer links between the university and industrial research communities and to provide the initial mass and concentration of effort so essential for a competitive position in many of the rapidly expanding areas of research and technology. These are certainly among the main concerns for engineering schools at the present time.

Canada's position in a world where technological development plays a crucial role depends, to a great extent, upon its ability to train researchers and specialists. Even if we take into account the present difficulties of our economy, the committee is convinced that a significant increase in the commitment to research and development is necessary, and that the NSERC plan should generate a positive reaction from government.

In the hope that the above will help you support our position, I remain

Yours sincerely,

Roland Doré, P.Eng.
Chairman, NCDEAS

RD:nb
Enclosures (2 lists)
c.c. Mr Gordon M. MacNabb
President, NSERC
N.B.: A similar letter has been sent to the persons on the attached list.

Office of the Minister of State / Cabinet du Ministre d'État

13 IX 1985

Science and Technology / Science et Technologie

ANNEXE

The Honorable Robert R. de Cotret, P.C., M.P.
President
Treasury Board
Place Bell Canada
160 Elgin Street, 22°fl. West
OTTAWA (Ontario) K1A 0R5

The Honorable Eric Neilsen, P.C., Q.C., M.P.
Deputy Prime-Minister
Minister of National Defense
Central Building, Suite 209-S
House of Commons
OTTAWA (Ontario) K1A 0A6

The Honorable Thomas E. Siddon, P.C., M.P.
Minister of State
Science and Technology
235 Queen Street, 8°fl. West
OTTAWA (Ontario) K1A 1A1

The Honorable Sinclair Stevens, P.C., Q.C., M.P.
Minister of Regional Industrial Expansion
Central Building, Suite 426-N
House of Commons
OTTAWA (Ontario) K1A 0A6

The Honorable Michael H. Wilson, P.C., M.P.
Minister of Finance
Place Bell Canada
160 Elgin Street, 27°fl. North
OTTAWA (Ontario) K1A 0G5

Mr Claude Lanthier, P.Eng., M.P.
Parliamentary Secretary
Office of the Minister of Finance
160 Elgin Street, 27°fl.
OTTAWA (Ontario) K1A 0G5

September 9, 1985

NATIONAL COMMITTEE OF DEANS OF ENGINEERING
AND APPLIED SCIENCE

ROSTER

ALPHABETICAL BY UNIVERSITY

University	
Faculty of Engineering University of Alberta 5-1 Mechanical Engineering Building Edmonton, Alberta, T6G 2G8 (403) 432 3596	Dr. ~~Clarence~~ C. Capjack (Clarence) Acting Dean
Faculty of Applied Science The University of British Columbia 2324 Main Mall Vancouver, B.C. V6T 1W5 (604) 228 6412	Dr. L. M. Wedepohl (Martin) Dean
Faculty of Engineering The University of Calgary Calgary, Alberta, T2N 1N4 (403) 284 5731	Dr. T. H. Barton (Tom) Dean
Faculty of Engineering Carleton University Ottawa, Ontario, K1S 5B6 (613) 231 1616	Dr. J. S. Riordon (Spruce) Dean
Faculty of Engineering and Computer Science 1455 de Maisonneuve Blvd. W. Montreal, Quebec, H3G 1M8 (514) 879 5926	Dr. M. N. S. Swamy (Swamy) Dean
School of Engineering University of Guelph Guelph, Ontario, N1G 2W1 (519) 824 4120, Ext. 2430	Dr. J. R. Ogilvie (John) Director
School of Engineering Lakehead University Oliver Road, Thunder Bay, Ontario, P7B 5E1 (807) 345 2121, Ext. 509	Dr. J. G. Locker (Gary) Director
School of Engineering Laurentian University Sudbury, Ontario, P3E 2O6 (705) 675 1151, Ext. 591	Dr. ~~Paul~~ P. H. Lindon (Paul) Director

84-11-02/85-02-03

University

Faculte des Sciences et de Genie Universite Laval Quebec, Quebec, G1K 7P4 (418) 656 2354	~~Dr. L. Huot (Lucien)~~, Dr. F. TAVENAS (FRANÇOIS Doyen ~~Dr. M. Lecours (Michel)~~ Dr. J. FAILLE (JACQUES Vice-Doyen
Faculty of Engineering University of Manitoba Winnipeg, Manitoba, R3T 2N2 (204) 474 9806	Dr. E. Kuffel (Ed) Dean
Faculty of Engineering McGill University 817 Sherbrooke Street W. Montreal, Quebec, H3A 2K6 (514) 392 5859	Dr. P. R. Belanger (Pierre) Dean
Faculty of Engineering McMaster University Hamilton, Ontario L8S 4L7 (416) 525 9140 , Ext. 4288	Dr. A. C. Heidebrecht (Arthur) Dean
Faculty of Engineering and Applied Science Memorial University of Newfoundland St. John's, Newfoundland, A1B 3X4 (709) 737 8810	Dr. G. R. Peters (Ross) Dean
Faculte des Science et de Genie Universite de Moncton Moncton, New Brunswick, E1A 3E9 (506) 858 4301	Dr. F. Weil (Francis) Doyen Dr. M. Massiera (Michel) Vice-Doyen
Ecole Polytechnique de Montreal Campus de l'Universite de Montreal Case postale 6079, succursale "A" Montreal, Quebec, H3C 3A7 (514) 340 4711	Dr. R.Dore (Roland) Directeur de l'Ecole
Faculty of Engineering Sir Edmund Head Hall University of New Brunswick Fredericton, New Brunswick, E3B 5A3 (506) 453 4570/71	Dr. F. R. Wilson (Frank) Dean
Faculty of Engineering Technical University of Nova Scotia P.O. Box 1000 Halifax, Nova Scotia, B3J 2X4 (902) 429 8300	Dr. D. A. Roy (Donald) Dean

University

Faculty of Science and Engineering University of Ottawa Ottawa, Ontario, K1N 6N5 (613) 231 3223 or (613) 231 3457	Dr. A. Baer (Alec), DR J. GARDNER (John) Dean Dr. W. Steenaart (Bill) Associate Dean, Eng.
Department d'ingenierie Universite de Quebec a Chicoutimi 555 Chemin St. Thomas Chicoutimi, Quebec, G7H 2B9 (418) 545 5011	M. ~~R. Ghoumard~~ H. PAQUET (MARCEL) Directeur
Department d'ingenierie Universite de Quebec a Trois Rivieres B.P. 500 Trois Rivieres, Quebec, G9A 5H7 (819) 376 5429/376 5676	J. GARCEAU (JACQUES) ~~Dr. A. LeBlanc (Achille)~~ Directeur
Faculty of Applied Science Queen's University Kingson, Ontario K7L 3N6 (613) 547 2643	Dr. D. W. Bacon (Dave) Dean
Faculty of Engineering University of Regina Regina, Saskatchewan, S4S 0A2 (306) 584 4159	A. OPSETH (ART) Dr. ~~W. B. H. Cooke (Bruce)~~ Dean
Engineering College Royal Military College of Canada Kingston, Ontario, K7L 2W3 (613) 545 7371	Dr. C. Moffat, (Craig) Dean
College of Engineering University of Saskatchewan Saskatoon, Saskatchewan, S7N 0W0 (306) 343 2100	Dr. P. N. Nikiforuk (Peter) Dean
Faculte des Science Appliquees Universite de Sherbrooke Sherbrooke, Quebec J1K 2R1 (819) ~~565 4411~~ 821-7111	~~Dr. K. Johns (Ken)~~ R. THIBAULT (RICHARD) Doyen
Faculty of Engineering Simon Fraser University Burnaby, British Columbia V5A 1S6 (604) 291 ~~3224~~ 4371	Dr. D. George (Don) Dean
Faculty of Applied Science and Engineering University of Toronto 35 St. George Street Toronto, Ontario M5S 1A4 (416) 978 3131	Dr. G. R. Slemon (Gordon) Dean

University

Faculty of Engineering University of Victoria P.O. Box 1700 Victoria, British Columbia V8W 2Y2 (604) 721 7211	Dr. L. T. Bruton (Lou) Dean
Faculty of Engineering University of Waterloo Waterloo, Ontario N2L 3G1 (519) 885 1211, ext 3348	Dr. W. C. Lennox (Bill) Dean
Faculty of Engineering Science University of Western Ontario London, Ontario, N6A 5B9 (519) 679 3304	Dr. G. F. Chess (Gordon) Dean
Faculty of Engineering University of Windsor Windsor, Ontario, N9B 3P4 (519) 253 4232	Dr. C. MacInnis (Cam) Dean July 1, 1985 to dec. 31, 1985 on sabbatical Dr Murray C. Temple Interim Dean

---

NCDEAS EXECUTIVE COMMITTEE

Dr. E. Kuffel	Chairman	University of Manitoba
Dr. D. A. Roy	Past Chairman	Technical University of Nova Scotia
Dr. R. Dore	Secretary	Ecole Polytechnique de Montreal.

1984 11 02

National Committee of Deans of Engineering and Applied Science

Comité National des Doyens de Génie et Science Appliquée

c/o Ecole Polytechnique
P.O. Box 6079, Branch A
MONTREAL (Quebec) H3C 3A7 (514) 340-4943

xérox Mr C.Lajeunesse, NSERC
+ members, NCDEAS

September 9, 1985

The Honorable Robert R. de Cotret, P.C., M.P.
President
Treasury Board
Place Bell Canada
160 Elgin Street, 22°fl. West
OTTAWA (Ontario) K1A 0R5

Dear Mr de Cotret:

The National Committee of Deans of Engineering and Applied Science (NCDEAS) wishes to express its full support for the second five-year plan of the Natural Sciences and Engineering Research Council (NSERC).

NCDEAS groups together all 31 deans of engineering of Canadian universities, as in the enclosed list.

It is the opinion of the Committee that all of the major needs mentioned in the plan are important for the future of research in this country. We note, in particular, that action is called for to preserve free research activities in universities, to forge closer links between the university and industrial research communities and to provide the initial mass and concentration of effort so essential for a competitive position in many of the rapidly expanding areas of research and technology. These are certainly among the main concerns for engineering schools at the present time.

Canada's position in a world where technological development plays a crucial role depends, to a great extent, upon its ability to train researchers and specialists. Even if we take into account the present difficulties of our economy, the committee is convinced that a significant increase in the commitment to research and development is necessary, and that the NSERC plan should generate a positive reaction from government.

In the hope that the above will help you support our position, I remain

Yours sincerely,

Roland Doré, P.Eng.
Chairman, NCDEAS

RD:nb
Enclosures (2 lists)
c.c. Mr Gordon M. MacNabb
President, NSERC
N.B.: A similar letter has been sent to the persons on the attached list.

ANNEXE

The Honorable Robert R. de Cotret, P.C., M.P.
President
Treasury Board
Place Bell Canada
160 Elgin Street, 22°fl. West
OTTAWA (Ontario) K1A 0R5

The Honorable Eric Neilsen, P.C., Q.C., M.P.
Deputy Prime-Minister
Minister of National Defense
Central Building, Suite 209-S
House of Commons
OTTAWA (Ontario) K1A 0A6

The Honorable Thomas E. Siddon, P.C., M.P.
Minister of State
Science and Technology
235 Queen Street, 8°fl. West
OTTAWA (Ontario) K1A 1A1

The Honorable Sinclair Stevens, P.C., Q.C., M.P.
Minister of Regional Industrial Expansion
Central Building, Suite 426-N
House of Commons
OTTAWA (Ontario) K1A 0A6

The Honorable Michael H. Wilson, P.C., M.P.
Minister of Finance
Place Bell Canada
160 Elgin Street, 27°fl. North
OTTAWA (Ontario) K1A 0G5

Mr Claude Lanthier, P.Eng., M.P.
Parliamentary Secretary
Office of the Minister of Finance
160 Elgin Street, 27°fl.
OTTAWA (Ontario) K1A 0G5

September 9, 1985

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada
A1C 5S7

Office of the President

Telex: 016-4101
Telephone: (709) 737-8212

1985-08-29

Dr. G.M. MacNabb,
President,
Natural Sciences and Engineering
Research Council of Canada,
200 Kent St.,
Ottawa, Ont.
K1A 1H5

Office of the Minister of State / Cabinet du Ministre d'Etat

9 IX 1985

Science and Technology / Sciences et Technologie

Dear Dr. MacNabb:

This is to thank you for sending me the publications on NSERC's second five-year plan entitled "Completing the Bridge to the 90's". My colleagues and I have found this to be fascinating reading, not only for the sound and imaginative proposals for the next five years, but also for the documentation and the careful analysis of NSERC's splendid performance of the past five years. University researchers from across the country owe NSERC a vast debt for keeping us within reach of excellence during a period when government support of universities has fallen far below clearly indicated national needs.

During the past five years the Canadian research environment in the sciences and engineering has improved immensely: the stagnation that was beginning to set in has been arrested and several of your bold new initiatives have been clearly successful. That these achievements have been realized even though funding fell far short of any of the alternatives listed in your first five-year plan is both recognition of the severity of research needs and a tribute to your wise management of resources. From our Newfoundland perspective, we have benefited greatly from several of your programmes and look forward to implementation of your next thrust with enthusiasm, although, from first reading, we do have a concern or two as i note below.

Your programmes to meet scientific manpower needs have been very helpful to us, especially the scholarships and fellowships at all levels. These have enabled us to attract and keep students and post doctoral scholars - in many cases people who otherwise would not be with us. Your expansion of this programme and your proposed new initiatives, particularly the concept of NSERC Research Professorships, is very appealing to us. Memorial has been very fortunate in being a recipient of two of the Industrial Research Chairs which were harbingers of the Research Professor programme and we feel that these generous awards will play a major part in our offshore research.

We have benefited most from your operating grants which have allowed our best scientists to pursue their research free from the restrictions of closely specified goals and products. The infrastructure support, often closely tied

to the performance of these scientists, has allowed us to replace outmoded equipment and to keep at least a few of our laboratories at or near the forefront of their fields. I would be remiss if I did not compliment NSERC on its peer-adjudication system which has been satisfactory from its beginning but which nonetheless seems to improve year by year. One of the incidental fallouts from this system is the enormous contribution to community spirit that is created by faculty members serving on grants committees and taking part in site visits to other laboratories. At Memorial we now feel that our strengths and weaknesses are rather fully known and understood by the best scientists and engineers across the country. We know whom to call upon for advice and on occasion, we have been pleased to provide assistance to other universities.

One of Memorial's concerns about operating grants is the pressure on peer review committees to be increasingly selective, a pressure that you intend to maintain in the years ahead. To this point we have joined with others in applauding the trend but if carried much farther, selectivity could have adverse effects on several of our disciplines. In isolated universities such as Memorial, it is difficult in some disciplines to attract people at the cutting edge of research. Yet it is essential to have research undertaken in all major fields, particularly mathematics and basic sciences, in order to complement and support the efforts of our strong departments and in order to strengthen the interdisciplinary endeavours into which our cold ocean focus increasingly leads us. Selectivity carried too far too fast could have adverse effects on the morale and the progress of discipline groups that we are valiantly attempting to strengthen. Possibly the answer lies in some form of extension of your special research development project grants.

You are right to take pride in the great advances made in university-industry interactions over the past several years. I have referred already to our own pleasure in being chosen to receive two of the first Industrial Research Chairs. Additionally, several teams of our scientists and engineers have received generous grants to perform strategic and other forms of targetted research and we are rather proud of the manner in which small, high tech companies have grown out of C-CORE and our Ocean Engineering Group. Nonetheless, our isolation from the country's major concentrations of industry suggest that Memorial and other Atlantic universities might have difficulty taking full advantage of your projected expansion of targetted programmes, especially those involving university-industry initiatives. Again, I wonder if the answer might lie in an extension of your research development project that might enable us to attempt some initiatives of our own, e.g., in cold ocean science and engineering, that could eventually lead to joint projects with the companies planning to exploit our offshore resources. These are alternatives that I shall pursue in other letters or in a personal meeting.

In conclusion, I reiterate my own thanks and those of my colleagues for NSERC's financial support of our research effort over the past five years. With it we have kept at least two discipline units at the national cutting edge and two or three others still within reach of excellence. Without this support we would have perished for, unlike some other provinces, we have no provincial granting agency to help keep university research afloat. If there is any way

that my colleagues and I can lend support to your second five-year plan, please let us know. We are solidly behind it and NSERC.

With best personal regards.

Very sincerely yours,

L. Harris,
PRESIDENT.

cc - Hon. Tom Siddon ✓
- Hon. John Crosbie
- Hon. Sen. William Doody

xérox à M. Claude Lajeunesse,
CRSNG
Prés. & princ.
dir. fonct.
dir. dép.
adj. dir. rech.

ÉCOLE POLYTECHNIQUE

ÉCOLE D'INGÉNIEURS FONDÉE EN 1873
AFFILIÉE À L'UNIVERSITÉ DE MONTRÉAL

BUREAU DU DIRECTEUR

Campus de l'Université de Montréal
Case postale 6079, succursale A
Montréal, Québec H3C 3A7

le 27 août 1985

Le très honorable Brian Mulroney
Premier ministre du Canada
Chambre des communes
Edifice Central, pièce 309-S
Ottawa, Ontario
K1A 0A2

Monsieur le Premier ministre,

Au mois de juin, le Conseil de recherches en sciences naturelles et en génie du Canada (CRSNG) a rendu public son deuxième plan quinquennal intitulé "Préparer la voie vers les années 1990". Je désire vous communiquer, par la présente, l'appui total de l'École Polytechnique de Montréal aux demandes contenues dans ce document primordial pour l'avenir de la recherche au Canada.

Il est évidemment normal que les universités du pays expriment leur accord avec un projet qui vise à rehausser les investissements en recherche. Qu'il s'agisse de formation de chercheurs, d'achat d'appareillage ou de dépenses d'infrastructure, les lacunes mentionnées à l'échelle nationale dans le document sont les nôtres et nous devons trouver les moyens de les atténuer, en grande partie grâce aux subventions du CRSNG.

Si une bonne partie de l'investissement demandé dans le plan est consacrée à la recherche de base, une somme importante est également prévue pour former les chercheurs et les spécialistes dont le pays a besoin pour renforcer sa position concurrentielle dans les domaines de haute technicité. En effet, si des mesures rigoureuses ne sont pas prises dès maintenant, le Canada pourrait bien être à court de ressources humaines nécessaires pour assurer son développement technologique.

.../

Au Québec, et en particulier pour les universités francophones du Québec, le financement de la recherche constitue un défi de première importance. Le Gouvernement provincial a beaucoup investi à cette fin et il a accru sa contribution récemment en mettant sur pied des programmes nouveaux. Et pourtant, malgré cette contribution et malgré quelques progrès depuis une dizaine d'années, les universités francophones du Québec accusent encore un retard; on peut s'attendre, dans les prochaines années, à un accroissement de leurs activités de recherche et, par conséquent, des besoins qui seront exprimés de leur part auprès du CRSNG.

Une priorité dans les activités de recherche des universités francophones, depuis quelques années, a été la collaboration avec l'industrie. Une étude récente, par exemple, a montré que du 1er février 1984 au 31 mars 1985, la proportion des subventions du CRSNG accordées aux universités francophones du Québec dans le cadre du nouveau programme conjoint universités-industrie a été de 16%, ce qui est sensiblement supérieur à la proportion d'environ 12,9% pour l'ensemble des subventions et bourses accordées depuis quelques années par cet organisme à ces mêmes universités. L'Ecole Polytechnique, en particulier, joue un rôle de premier plan dans cette collaboration.

Nous sommes tous pleinement conscients des difficultés d'ordre économique auxquelles le pays fait face. Je veux insister, cependant, sur la nécessité de donner à la communauté scientifique canadienne, malgré ces difficultés, l'aide dont elle a absolument besoin en accordant une réponse positive au plan du CRSNG.

Veuillez agréer, Monsieur le Premier ministre, l'assurance de ma haute considération.

Le directeur de l'École,

Roland Doré, ing.

p.j.
c.c. Gordon M. MacNabb,
Président, CRSNG
ainsi qu'aux personnes indiquées
sur la liste en annexe

ANNEXE

L'honorable Robert R. de Cotret, P.C., M.P.
Président
Conseil du Trésor

L'honorable Eric Neilsen, P.C., Q.C., M.P.
Vice-Premier ministre
Ministre de la Défense nationale

L'honorable Thomas E. Siddon, P.C., M.P.
Ministre d'État
Sciences et technologie

L'honorable Sinclair Stevens, P.C., Q.C., M.P.
Ministre de l'Expansion industrielle régionale

L'honorable Michael H. Wilson, P.C., M.P.
Ministre des Finances

Monsieur Claude Lanthier, ing., M.P.
Secrétaire parlementaire
Cabinet du ministre des Finances

---

le 27 août 1985

caut acpu

canadian association of university teachers

association canadienne des professeurs d'université

August 27, 1985.

The Hon. Tom Siddon, M.P.,
Minister of State for Science and Technology,
240, Sparks Street,
C.D. Howe Building,
8th Floor West,
OTTAWA, Ontario.
K1A 1A1.

Office of the Minister

12 IX 1985

Science and Technology / Sciences et Technologie

Dear Mr. Siddon:

On behalf of the Canadian Association of University Teachers, I wish to urge you and, through you, the Government of Canada to adopt the proposed Five Year Plan of the Natural Sciences and Engineering Research Council entitled, "Completing the Bridge to the 90s: NSERC's Second Five Year Plan". The decision of the Government of Canada in regard to this plan will send a clear signal to the university researchers as to whether the government is seriously committed to research and development and to an enchanced role for the universities in this area.

The Prime Minister has clearly indicated on a number of occasions his commitment and that of the Progressive Conservative Party. For example, in an address to the University of Toronto P.C. Campus Association on March 14, 1984, he said that we would "double the collective Canadian contribution to this indispensable sector during our first term in office." Both before and after the election, you have indicated your own strong support of research and development.

You will be aware that NSERC is regarded as a model in the Western World for successful government and university partnership in supporting scientific and engineering research. The Wright Report clearly testified to this. The Council has developed very succesesful strategic programs and has been one of the pioneers in funding links between the universities and the private sector. Its decisions on funding are made competitively and professionally. The Progressive Conservative government should reinforce this important national resource.

.../2

For all these reasons I hope that you will persuade your colleagues to adopt the Five Year Plan as proposed.

Yours sincerely,

E.O. Anderson,
President, CAUT.

The Rt. Hon. Brian Mulroney, M.P.,
Economic and Regional Development Committee
Conservative M.Ps who represent university constituencies
Dr. A.E. Collin, MOSST
Mr. Robert Rabinovitch, Secretary of State
Mr. David Kirkwood, Health and Welfare
Dr. Pierre Bois, President, Medical Research Council
Dr. William E, Taylor, President, Social Sciences and Humanities Research Council of Canada
Professor Allan R. Sharp, Vice-President (External)
Professor Bob Kerr, Vice-President (Internal)

DCS/ka

UNIVERSITY OF GUELPH
OFFICE OF THE VICE-PRESIDENT ACADEMIC

GUELPH, ONTARIO, CANADA · N1G 2W1
Telephone (519) 824-4120

Rerum
Cognoscere
Causas

23 August 1985

The Right Honourable Brian Mulroney
Prime Minister
House of Commons
Room 309-S, CB
Wellington Street
Ottawa, Ontario
K1A OA6

Dear Mr. Prime Minister:

The University of Guelph was pleased with the announced determination of your Government to invest significantly greater rsources in research and development.

Our response to the five-year plan recently released by Mr. Gordon MacNabb is attached for your information. NSERC-funded science is an essential component of a balanced Canadian science system. We think NSERC has been conservative and responsible in their five-year plan proposal and we urge its approval.

In requesting support for the NSERC five-year plan, we also recognize the need for very substantial increase in the funding of applied research and development in direct collaboration with the industrial sector. The University of Guelph has taken steps recently to increase its capacity in this regard by the establishment of a Director of Industrial Services. Our objective is strong basic research and strong industry-related research, both in support of a balanced Canadian science system.

We will be appreciative of your continued commitment to research and development.

Yours sincerely,

H. C. Clark
Vice President Academic

cc: The Honourable Tom Siddon
Dr. W. C. Winegard, MP, Wellington
Mr. W. MacLean, MP, Waterloo

UNIVERSITY OF GUELPH
OFFICE OF THE VICE-PRESIDENT ACADEMIC

GUELPH, ONTARIO, CANADA · N1G 2W1
Telephone (519) 824-4120

23 August 1985

Mr. G. M. MacNabb
President
Natural Sciences and
Engineering Research Council
100 Sussex Street
Ottawa, Ontario
K1A OR6

Dear Mr. McNabb:

I should like to congratulate you on NSERC's second five-year plan "Completing the Bridge to the 90's". It presents a well-reasoned, well-documented plan for science support which, if adopted by Government, will provide an excellent base for scientific development in Canada. While your proposals have our full support, in the following paragraphs we comment on some areas which we feel deserve special emphasis and on some areas that present particular difficulty in Ontario and, in the process, make some suggestions for improvement.

We would support most strongly your emphasis on the need to develop the intellectual capacity of the country to ensure its economic and political survival. Of particular concern to us is the need to start now the process of training and introducing into the university system the young faculty needed to replace the large number of faculty who will retire in the nineties. This point was also made most strongly in the report of the Commission on the Future Development of the Universities of Ontario. (1)

NSERC's University Research Fellowship program is an excellent one which addresses this need but it should be pointed out that some universities are unable to take full

---

(1) "Options and Futures". December 1984

advantage of the program since they do not have the facilities for housing such fellows, given the current capital situation. This is another more subtle example of the necessity for harmonizing provincial and federal policies in the science and university areas.

This need was identified in the recently published report on EPF/PSE, prepared by Dr. Johnson. Like your own document, Dr. Johnson also pointed out the minimal increases in resources available to universities at a time when student numbers have increased substantially and the resulting reduction in support universities have been able to supply to researchers. Indeed, as he indicates, universities have had strong incentives to charge some infrastructure costs to research grants, thus reducing the amount available for research. For this reason we strongly support your proposal to increase infrastructure grants, at least until provincial funding more closely matches the federal funds for post-secondary education, made available through EPF. We note with regret your observation in Appendix II that Ontario universities supply only half of the research infrastructure available across the country. This, coupled with the fact that there has been a "capital freeze" in Ontario since 1972, has greatly hindered our ability to develop our research programs to their full potential.

We agree with your assessment that Operating Grants are at the heart of the research enterprise and would urge that they continue to command the major portion of NSERC funds. If hard choices have to be made, then excellence must continue to be supported, if necessary, at the expense of remedial programs. Also, we note with regret that at the end of the first five years, operating grants had not reached the desired level.

It should be emphasized that, while the industrial development of innovations created through operating grant projects is of great economic importance, such exploitation of these innovations can only occur if the innovations exist in the first place. Thus, while we have had good experience with industry-university projects and favour expansion of this program, we would be strongly opposed if funds for this expansion came at the expense of Operating Grants.

We concur with your assessment that the awarding process has improved over the past five years and offer the following suggestions for continued improvement:

1. There is need for continuity in the evaluation process so that there should not be too rapid a turnover in the peer review group.

2. Despite this and while stressing selectivity, the peer group should be prepared to take risks and recognize innovative proposals if they are well supported. Perhaps the inclusion of some very young scientists or some foreigners in the peer review group should be considered.

3. To the greatest extent possible, productive researchers should have some assurance of continuity in their research funding--short term budgeting leads to ad hoc research.

Your figure of $70,000 probably repreents a reasonable value of the average grant for a laboratory researcher in Southern Ontario, even though your analysis does not fully account for the reduced support universities now provide, given their reduction in core funding. We would caution, however, that this is an average and that there is still a place for much smaller grants in support of worthwhile projects just as there will always be the requirement for larger grants. We would also suggest that the present Northern supplement is inadequate to cover the very heavy costs of field research in Northern Canada.

We share your concern that business supports less than one percent of the reseach in universities. We have found the university/industry projects to be fruitful--as are the strategic grants--and we would hope that these joint projects may lead to greater industrial support. Even so, it is clear that NSERC will continue to be the main support for research in the universities.

In summary, firstly, we feel it is essential that government maintain its declared position to increase its R & D in Canada. Some of this increase must be that recommended in the five-year plan to assure we take our rightful place in the basic sciences. We also recognize that there needs to be a substantial increase in industrially centred cooperative research. Secondly, we strongly support your proposals and only caution that the estimates of need may err on the conservative side. In the past decade we have seen a massive and largely unpredicted expansion in molecular biology and feel sure that there will be some similar unpredicted development

in some other field or fields in the future. For this reason, we would counsel that some funds be set aside for bold innovative research and for funding unpredicted but emerging new fields.

We welcome this opportunity to comment on your proposals and stand ready to help in any way possible in the development of any future planning proposals.

Yours sincerely,

H. C. Clark
Vice Predent Academic

UNIVERSITY OF GUELPH
OFFICE OF THE VICE-PRESIDENT ACADEMIC

GUELPH, ONTARIO, CANADA · N1G 2W1
Telephone (519) 824-4120

Rerum
Cognoscere
Causas

23 August 1985

Office of the
Minister of State

Cabinet du
Ministre d'Etat

The Honourable Tom Siddon
Minister of State
Science and Technology
Ottawa, Ontario
K1A 1A1

Dear Mr. Siddon:

For your information, I have attached a copy of our response to Mr. Gordon MacNabb on the release of the NSERC five-year plan. This is a conservative and realistic proposal, in our view. It is important that the Government give it the careful consideration it deserves as the basic foundation for Canadian research and development.

Yours sincerely,

H. C. Clark
Vice President Academic

cc: Dr. W. C. Winegard, MP, Wellington
Mr. W. MacLean, MP, Waterloo

Office of the President

YORK UNIVERSITY

4700 KEELE STREET • NORTH YORK • ONTARIO • CANADA • M3J 1P3

August 20, 1985

Dr. Gordon M. MacNabb
President
Natural Sciences and Engineering
Research Council
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Dr. MacNabb,

Thank you most kindly for your letter of June 17, 1985 and for the copies of NSERC's Second Five-Year Plan and its appendices. I have arranged for these documents to be circulated among York's academic community.

Your budget target of over $700 million by 1990 is an ambitious one but, given the nature of research in science, the erosion of government support for universities, and NSERC's goals to support high quality work, it is clear that substantial annual increases are necessary. I support strongly the initiatives to attract more Canadians to graduate school, to provide university laboratories with state-of-the-art equipment and to strengthen links between universities and industry.

I will encourage colleagues to write to the Minister of Science and Technology in order to provide the government with comments on NSERC's Second Five-Year Plan.

With every good wish,

Yours sincerely,

HW Arthurs

Harry W. Arthurs
President

2074

caura Canadian Association of University Research Administrators
Association Canadienne d'Administrateurs de Recherche Universitaire acaru

20 August, 1985

The Honourable Dr. Tom Siddon,
Minister of State for Science and Technology,
OTTAWA, Canada, K1A 1A1

Dear Dr. Siddon:

I am writing to you as the President of the Canadian Association of University Research Administrators (CAURA), because I am receiving a growing number of expressions of concern from our members, with respect to the Government support of university research. Without polling our members, I am not able to speak formally for the Association, but I believe the concerns I shall express represent the concensus of our members.

We were heartened, during the election campaign, by the numerous televised messages of Mr. Mulroney, in which he described the urgent need to rapidly expand the research and development carried on in Canada, to a target expenditure of 2.5% of GNP. Unfortunately, since this Government has been in power, there has been little or no evidence of any will to achieve that goal. Almost all actions relative to research and development have been negative. It is recognized that a major intent of the budget was to encourage investment in research and development, but even if this approach is successful, it will have only second or third order impact on the support of university research. We all hope that Canadian individuals and corporations will invest in research, but it is the Government which must be the primary investor in university research, an investment which experience has shown will pay handsome dividends in the medium and long term.

A recent excellent study by NSERC illustrates that the major impediment to achieving the Government's goal of research and development expenditures of 2.5% of GNP, whether from private or government sources, will be the lack of highly qualified manpower. This lack can only be overcome by substantial direct support of university research, which is the environment in which our research scientists are trained. Such training is an essential link in the technological development of Canada on which we depend for our future prosperity. NSERC has therefore put forward its second Five-Year Plan, which identifies Canada's requirement for highly qualified manpower as its top priority. We would urge your Government to accept and implement the Five-Year Plan as a king-pin to Canada's economic future.

Our members know your personal commitment to research and development, particularly at Canadian universities. How may we

help you to convince your colleagues of the part which Canadian researchers must play in the future development of Canada?

Traditionally, the funding of university research in Canada has been a dual responsibility of the Provincial and Federal Governments, in which the cost of faculty salaries, buildings and infrastructure have been provided by Provincial Governments, with the direct cost of research funded by the Federal Government, via its Granting Councils and by contracts with government agencies. For several years, university research laboratories have been in a downward spiral, in which the reduction of direct support from the Federal Government has been used by Provincial Governments as an excuse to reduce the infrastructure support. It is essential that this spiral be reversed.

Although SSHRC and MRC are not direct responsibilities of your Ministry, may we urge your support for those Councils. The need for the finest of medical research in Canada is self evident, but I would draw your attention to the desperate state of funding provided via the Social Science & Humanities Research Council. This Council supports not only the cultural development of Canada, but many disciplines, such as economics, social affairs, public and business management, law and education, which are equally as important for the development of Canada as medicine and technology.

Finally, may I draw one other concern to your attention. It has been the policy of your Government to reduce the support of government research, in agencies such as NRC. The members of CAURA hope that the Government appreciates the close relationship and interdependance which has developed between these agencies and the universities. Graduate students have been the primary beneficiaries from this interaction, through the opportunity to use government facilities for their Master's and Ph.D research programmes. Some examples are TRIUMF, ship time made available to marine biology and oceanography students, and viewing time at Federal Observatories, to name a few. As these agencies are placed under fiscal pressure, it is the peripheral use of their facilities by graduate students which has often been the first to suffer.

In summary, the universities look to your Government to reverse the steady degradation of support for university research and graduate programmes implemented by previous governments. May I assure you that we seek this support, not to further our own ends, but because we believe that a constant supply of highly qualified young people, in all disciplines, and the basic research which is only done at universities, are the most essential requirements for the long term development of our Country.

Yours sincerely,

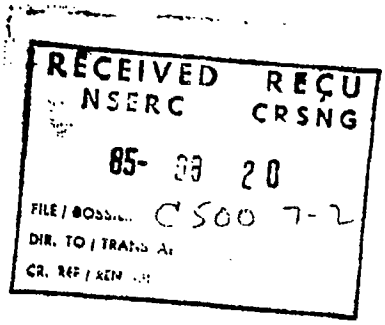
John M. Dewey,
President, CAURA

JMD:pr

Université de Montréal

Cabinet du recteur

le 13 août 1985



Monsieur Gordon MacNabb
Président
Conseil de recherches en sciences naturelles
et en génie du Canada
200 rue Kent
Ottawa K1A 1H5

Cher Gordon.

Monsieur le Président,

J'ai pris connaissance avec grand intérêt du deuxième Plan quinquennal du Conseil de recherches en sciences naturelles et en génie du Canada. Ce plan semble être la suite logique des objectifs que s'est donnés le Gouvernement canadien et il est à souhaiter que celui-ci voudra bien donner son accord au programme et accepter de le financer, au moins en bonne partie.

Le deuxième Plan quinquennal offre en plus une continuité avec le premier qui, comme il est bien connu, a permis un développement important des études supérieures et de la recherche dans les universités canadiennes. Il va de soi que nous l'appuyons intégralement.

Bien que je n'aie pas l'intention de commenter le document point par point, je me permettrai de faire quelques commentaires sur certaines des propositions qui y sont contenues: en premier lieu, l'Université de Montréal est heureuse de constater que le Conseil maintient, comme sa plus haute priorité, les subventions de recherche "par discipline dont la plupart sont accordées à des chercheurs individuels en fonction de leur excellence, pour les activités courantes de recherche plutôt que pour des projets précis de durée limitée". En effet, cette politique laisse toute la liberté au chercheur d'utiliser ses fonds de la façon la plus efficace pour atteindre les objectifs que lui dictent ses propres recherches. Nous appuyons fortement cette politique car elle répond vraiment aux besoins de la recherche universitaire.

C.P. 6128, succursale A
Montréal (Québec)
H3C 3J7

le 13 août 1985

En deuxième lieu, et tel que souligné dans le Plan, nous croyons que c'est l'ensemble de la recherche canadienne qui pourrait être mis en péril si on n'accordait pas une priorité suffisante aux appareillages et aux ressources humaines.

Nous appuyons aussi fortement les propositions du Conseil sur l'infrastructure, question d'une grande importance pour les universités dans le contexte d'austérité actuelle.

Nous souhaiterions aussi que la question des frais indirects soit réglée une fois pour toutes. En effet, les universités en général sont financées essentiellement sur une base du nombre d'étudiants inscrits, sans tenir compte du degré d'activité scientifique qui s'y exerce. Aucune ressource particulière n'est prévue pour la recherche, ce qui amène les universités les plus actives en recherche à assumer les coûts indirects. C'est un problème qu'il est urgent de régler, même si la solution ne relève pas du CRSNG mais plutôt des gouvernements fédéral et provinciaux.

Je me permets enfin de souligner le problème de la répartition régionale. Bien que nous appuyions fortement la philosophie actuelle du CRSNG fondée sur l'excellence et non sur une distribution régionale, nous croyons que le problème québécois francophone en est un qui mérite une attention particulière et qu'une amélioration de la performance des universités québécoises peut s'effectuer dans le respect des critères d'excellence déjà établis. Nous sommes prêts à travailler avec le Conseil de recherches en sciences naturelles et en génie et avec les organismes provinciaux afin d'améliorer le rendement des universités québécoises.

En terminant, je désire vous féliciter, Monsieur le Président, de l'excellent travail de leadership que vous avez assumé afin de produire un Plan qui, de l'avis de tous, est un modèle à imiter. Vous pouvez compter sur l'entière collaboration de l'Université et la mienne.

Je vous prie d'agréer, Monsieur le Président, l'expression de mes meilleurs sentiments.

Le recteur,

Gilles G. Cloutier

cc M. R.J.A. Lévesque

le 13 août 1985

En deuxième lieu, et tel que souligné dans le Plan, nous croyons que c'est l'ensemble de la recherche canadienne qui pourrait être mis en péril si on n'accordait pas une priorité suffisante aux appareillages et aux ressources humaines.

Nous appuyons aussi fortement les propositions du Conseil sur l'infrastructure, question d'une grande importance pour les universités dans le contexte d'austérité actuelle.

Nous souhaiterions aussi que la question des frais indirects soit réglée une fois pour toutes. En effet, les universités en général sont financées essentiellement sur une base du nombre d'étudiants inscrits, sans tenir compte du degré d'activité scientifique qui s'y exerce. Aucune ressource particulière n'est prévue pour la recherche, ce qui amène les universités les plus actives en recherche à assumer les coûts indirects. C'est un problème qu'il est urgent de régler, même si la solution ne relève pas du CRSNG mais plutôt des gouvernements fédéral et provinciaux.

Je me permets enfin de souligner le problème de la répartition régionale. Bien que nous appuyions fortement la philosophie actuelle du CRSNG fondée sur l'excellence et non sur une distribution régionale, nous croyons que le problème québécois francophone en est un qui mérite une attention particulière et qu'une amélioration de la performance des universités québécoises peut s'effectuer dans le respect des critères d'excellence déjà établis. Nous sommes prêts à travailler avec le Conseil de recherches en sciences naturelles et en génie et avec les organismes provinciaux afin d'améliorer le rendement des universités québécoises.

En terminant, je désire vous féliciter, Monsieur le Président, de l'excellent travail de leadership que vous avez assumé afin de produire un Plan qui, de l'avis de tous, est un modèle à imiter. Vous pouvez compter sur l'entière collaboration de l'Université et la mienne.

Je vous prie d'agréer, Monsieur le Président, l'expression de mes meilleurs sentiments.

Le recteur,

Gilles G. Cloutier

cc M. R.J.A. Lévesque

En deuxième lieu, et tel que souligné dans le Plan, nous croyons que c'est l'ensemble de la recherche canadienne qui pourrait être mis en péril si on n'accordait pas une priorité suffisante aux appareillages et aux ressources humaines.

Nous appuyons aussi fortement les propositions du Conseil sur l'infrastructure, question d'une grande importance pour les universités dans le contexte d'austérité actuelle.

Nous souhaiterions aussi que la question des frais indirects soit réglée une fois pour toutes. En effet, les universités en général sont financées essentiellement sur une base du nombre d'étudiants inscrits, sans tenir compte du degré d'activité scientifique qui s'y exerce. Aucune ressource particulière n'est prévue pour la recherche, ce qui amène les universités les plus actives en recherche à assumer les coûts indirects. C'est un problème qu'il est urgent de régler, même si la solution ne relève pas du CRSNG mais plutôt des gouvernements fédéral et provinciaux.

Je me permets enfin de souligner le problème de la répartition régionale. Bien que nous appuyions fortement la philosophie actuelle du CRSNG fondée sur l'excellence et non sur une distribution régionale, nous croyons que le problème québécois francophone en est un qui mérite une attention particulière et qu'une amélioration de la performance des universités québécoises peut s'effectuer dans le respect des critères d'excellence déjà établis. Nous sommes prêts à travailler avec le Conseil de recherches en sciences naturelles et en génie et avec les organismes provinciaux afin d'améliorer le rendement des universités québécoises.

En terminant, je désire vous féliciter, Monsieur le Président, de l'excellent travail de leadership que vous avez assumé afin de produire un Plan qui, de l'avis de tous, est un modèle à imiter. Vous pouvez compter sur l'entière collaboration de l'Université et la mienne.

Je vous prie d'agréer, Monsieur le Président, l'expression de mes meilleurs sentiments.

Le recteur,

Gilles G. Cloutier

cc M. R.J.A. Lévesque

TMENT OF CHEMISTRY
TELEPHONE 902-424-3305

DALHOUSIE UNIVERSITY
HALIFAX, CANADA
B3H 4J3

August 2, 1985

Mr. Michael Wilson
Minister of Finance
Government of Canada
Ottawa, Ontario

Dear Mr. Wilson:

I am writing to you to support the recommendations of the Second Five Year Plan of the Natural Sciences and Engineering Research Council (NSERC) that is now before you. I particularly wish to underline the importance of support for basic research, by illustration through an example from my own work.

I have received NSERC support for the past ten years, first as a Ph.D. student with a 1967 Science Scholarship, then as an NSERC Postdoctoral Fellowship (held at Oxford University), and as an NSERC University Research Fellow, first at the University of Waterloo and now at Dalhousie University. The initial scholarship and fellowship allowed me to complete my research training and the University Research Fellowship has allowed me to initiate an independent research program.

Although my research has been primarily what one would call "academic" or "curiosity-driven", part of my work has led to a new type of energy storage material. This was certainly not my aim at the outset, nor would I likely have contributed to this area by design. This is just one of many examples in which pure science leads to tangential discoveries of great utility. There presently are several companies examining these heat storage materials as the basis for new products, so it is my hope that this work (and my future research) will "pay back" the Canadian economy for the investment in my education and research support.

Of course not all basic research leads directly to financially justifiable ends. However, it is not possible to predict those projects

2 . . .

Science and Technology

that will be most productive. NSERC's policy of supporting the best research and the best researchers, regardless of area, is extremely far-sighted, and truly a model for the international scientific community.

The NSERC request for funds for the second five year plan is relatively modest, as the Report points out. The returns can be great.

Yours sincerely,

MAW

Mary Anne White, Ph.D.
Assistant Professor (Research)

MAW/djc

cc: T. Siddon, Minister of State for Science and Technology ✓
S. McInnis, MP, Halifax West

University of Waterloo

Waterloo, Ontario, Canada
N2L 3G1

519.885-1211

Telex Number
069-55259

July 25, 1985

Office of the Minister of State — Cabinet du Ministre d'Etat

-9 VIII 1985

Science and Technology — Sciences et Technologie

The Right Honourable Brian Mulroney
Prime Minister of Canada
House of Commons
Room 309-S, Centre Block
Parliament Buildings
Wellington Street
Ottawa, Ontario
K1A 0A6

Dear Mr. Mulroney:

The University of Waterloo is widely recognized for its success.

Waterloo brought cooperative undergraduate education to Canada in 1957, and with 8,500 students and 1,500 employers in those programs today, has the second largest co-op system in the world. Today, Waterloo's cooperation with industry embraces many kinds of relationships, including research, technology transfer, special professional education, and so forth. The Waterloo region has become a centre of high-technology industry. Major multinational companies have established new operations here, including NCR, HP, and GM/EDS. As well, there are many dozens of start-up high tech spinoffs by students and faculty.

Waterloo's achievement is based upon fundamental academic strength. Industry comes not because Waterloo is willing to follow research agendas set by industry, but because of the importance of basic research performed here. The strength of Computer Science at Waterloo is its basis in a very strong Faculty of Mathematics (which incidentally has the largest enrolment of mathematics students in the world).

Waterloo has achieved world class distinction in numbers of areas. These include high-tech areas in engineering, mathematics and science. They also include excellence in our Faculty of Arts. The project for the New Oxford English Dictionary, which has great importance for Canada in both intellectual and commercial terms, was won for Waterloo because of strengths in both mathematics and humanities.

These achievements are not only a source of pride, but a vital resource for Canada at a time when it is becoming clear that the most important competitive edge in the North American economy is the intellectual resource, the capacity to innovate in process and product.

What has been achieved at Waterloo is obviously envied by people in many other countries. We have an unending stream of delegations seeking to learn what we have done. Fifteen years ago, the French Government established a new University at Compiegne, which was developed very much on the model of the University of Waterloo, through cooperation with us. Last month, French Prime Minister Fabius said that France would create five new universities based on the model of Compiegne, in the next five years.

It is probably important to note that no one in government, no one outside the University of Waterloo, in fact, has ever "planned" what has happened here. Instead, there has been a striving here for excellence and relevance -- attributes which are not mutually exclusive.

If this letter were intended only to be a piece of self-congratulation, it could stop here, with an expression of pride in what has been achieved. Unfortunately, there is a crisis at the University of Waterloo which threatens what has been achieved, and most of all threatens the will to achieve.

During the past few years, a stream of reports -- Fisher, Bovey, Johnson and other related reports (including one by Wright), have pointed out the importance of healthy universities to this country, presenting evidence as to the financial crisis in the universities, and recommending various solutions.

Because we still manage to keep the grass cut here, the funding crisis at Waterloo is perhaps not particularly conspicuous. But we have to teach our students on obsolete scientific equipment. Our library spending has been cut back year after year. Class sizes and teaching loads are outrageously large, so that we are unable to give individual attention to students who are the most talented this country can produce, and upon whom so much of our future depends. We have approximately 23 students for every member of faculty. Our success in winning research grants from the federal granting councils is chilled by the fact that these grants cover only a half or less of the real cost, thereby increasing the pressure and frustration.

If Waterloo (or for that matter, Toronto, Queen's, McMaster, or Western) were picked up and set down in Michigan, Ohio, New York, or Massachusetts (to say nothing of California), they would receive between $2.00 and $2.50 for every dollar they receive now in research. (In the USA, the federal agencies supporting university research pay for the full cost of that research, even including faculty salary costs.) No less strikingly; for the instructional function, we would, in any one of those American states, receive an additional 20% to 50% income.

It is often noted that Canada has no MIT. The reason is very simple. Our policies do not allow one to arise. If MIT were picked up and moved to Canada, it would shrivel up and die.

The picture in Europe is, if anything, even more generous than in the USA. The University of Compiegne, noted above, has a faculty/student ratio of

about seven to one. Imperial College in London has a ratio of about eight to one. MIT has a ratio of about nine to one. Our ratio, as noted above, is twenty-three to one!

At Waterloo, there is a crisis. We believe that without early relief, the spirit that has made Waterloo what it is will be crushed. We believe that if that happens, it would be extraordinarily difficult thereafter to revive it.

What is so frustrating about this, and in fact adds to the sense of despair, is that we see more and more opportunity to do what we have learned to do so well, yet find ourselves struggling desperately just to keep going in the face of annual cutbacks - with no capacity for initiative.

It is acknowledged that the provincial and federal governments themselves face financial crises. But it has to be noted that in the USA, Europe and Japan, appropriations for higher education generally, and for university research particularly, are much more generous and for the most part have been increasing significantly, recently. Ironically, in the USA as in Europe and Japan, governments and industry are often looking for policies that would produce the sort of institution that Canada already has at Waterloo.

What should be done? We reject one suggestion made by Bovey, that enrolment should be reduced so as to allow the present resource to serve more effectively a smaller enrolment. Accessibility must be maintained. Resources must then be increased.

There are only four available sources; provincial grants, tuition, federal research funding, and private support.

Waterloo has done exceptionally well in winning private support. We have over $40 million worth of computing equipment given us by industry, more than given to any other university in North America. We have done well with corporate philanthropic contributions, and are developing an effective alumni program. But nowhere in the USA do such contributions support more than a small fraction of university operating costs. In the USA, industry supports only about 5% of university research, only 10% even at MIT.

Provincial operating grants in Ontario are the lowest in Canada. Bovey said that at least 10% more is needed to maintain minimum instructional standards: the cost of this, for all 15 Ontario universities, would be $91 million in 1985-86.

Tuition in Canada is ridiculously low. Basic annual tuition at Waterloo is now only about 5% of what students expect to earn as a starting salary on graduation. It has never been lower. Under provincial policy we cannot increase tuition. On economic terms, it would be easy to justify doubling or even tripling present tuition levels. A cumulative debt of $10,000 or even $15,000 on graduation is not unreasonable when starting salaries are in the range of $25,000 to $30,000 a year. It is often argued that increased

tuition would limit accessibility. Given reasonable loans, and grants for students from poor families, there should be no effect on accessibility.

For research funding, there are several reports and analyses that say that the federal research granting councils should move to a fully funded basis for research, following American practice. This would have an enormous beneficial influence for the research universities that are so important to this country. The recently published NSERC 5-year plan proposes a move in this direction. Bovey said that Ontario's research universities needed, for 1982, $71 million from the federal government, and $54 million from the province.

Because of Waterloo's style and achievement, the financial crisis now affects us more severely than any other university. We have tried to do a great deal. Universities that have not made such efforts are not hurting so much.

If it were desired in Canada, as seems to be the case almost everywhere else, that more universities should behave like Waterloo, then policies are needed that encourage rather than penalize the kind of achievement we have made.

Perhaps the efforts we have made are not needed. But if you believe that Waterloo is important as an institution and as an example, then the financing options noted above must be addressed, and quickly. We believe that we are experiencing an erosion of our capacity to create and produce that could, within a year, become irreversible. The crisis in funding at the University of Waterloo is a result of the constraints imposed by government; it can only be relieved by government action. More than that, however, we believe that governments are missing an opportunity to make a most advantageous investment -- an investment that can yield significant returns in terms of job creation and economic growth in both the short and longer terms. There is growing recognition now that Japan has achieved its current manufacturing supremacy by investing heavily in education, especially in the applied sciences, and in computer research and development. We have some natural advantages that the Japanese do not, and yet we will not achieve the potential that is within our reach unless our federal and provincial governments recognize university development as a first priority and an essential prerequisite to intelligent and constructive capital investment and massive job creation. The University of Waterloo cannot continue to contribute effectively without financial relief.

Because both the federal and provincial governments are directly involved in the situation that has led to the crisis at Waterloo, a copy of this letter is being sent also to Premier Peterson.

Copies of this letter are being sent to the Honourable Walter McLean, the Honourable Tom Siddon, the Honourable Sinclair Stevens and the Honourable Michael Wilson because of their obvious interest in the issues raised.

We would be pleased to meet with you to discuss further the concerns that have led us to write this letter.

Yours sincerely,

J. Trevor Eyton
Chairman, Board of Governors

Douglas Wright
President

DW:pv

University of Waterloo

Waterloo, Ontario, Canada
N2L 3G1

Faculty of Science
Department of Biology
519 885-1211

Telex Number
069-55259

July 23, 1985

The Honorable Thomas Siddon,
House of Commons,
Ottawa, Ontario.

Dear Sir:

In order that Canada can fully embrace and exploit the new technologies that will form an essential component of industrial and economic development during the next decade, it is imperative that current investment in research and development is substantially increased. This position has been clearly espoused by the present government and both the business and academic research communities have been encouraged by the government's commitment to this objective. It is, of course, equally important that such investment should be appropriately channelled and should recognise the associated responsibility of providing a highly trained manpower capable of developing and using the opportunities that are provided by the expanded research effort.

The five-year plan released recently by Dr. Gordon M. MacNabb, President, Natural Sciences and Engineering Research Council (NSERC) offers an eminently sensible approach to the attainment of national goals in research and development. Since the inception of NSERC, the council has achieved a highly respected position internationally because of its demonstrated ability to innovate rather than merely respond to prevailing pressures. The five-year plan offers a compelling demonstration of the creative leadership that NSERC continues to provide to Canadian research and, if adopted, is likely to ensure effective utilisation of research resources for industrial and economic development.

I am pleased to offer enthusiastic and unconditional support for the five-year plan.

Yours sincerely,

Roger G.H. Downer
Professor of Biology and Chemistry
Advisor on Research to the
Vice-President, Academic

.cc The Rt. Hon. Brian Mulroney
The Hon. Eric Nielsen
The Hon. Sinclair Stevens
The Hon. Michael Wilson
Dr. Gordon M. MacNabb

/kmc

University of Alberta
Edmonton
Canada T6G 2J9

Office of the
Vice-President (Research)
3-2 University Hall, Telephone (403) 432-5353/5355

July 18, 1985.

The Rt. Hon. Joe Clark, M.P.,
Minister of External Affairs,
House of Commons,
Ottawa, Canada.
K1A 0A6

Dear Mr. Minister:

Re: NSERC Five-Year Plan

We at the University of Alberta have now had the opportunity of studying this document and President Horowitz has asked me to convey to you our viewpoint. While the government of Alberta has instituted many valuable research initiatives, such as Farming for The Future, The Alberta Oil Sands Technology and Research Authority and the Alberta Heritage Foundation for Medical Research, essentially all fundamental and most applied research in our Faculties of Science, Engineering and Agriculture are dependent upon NSERC for their very existence. Thus, the programs of NSERC and the level of funding of this agency by the federal government are of vital concern not only to the universities, but also to the economic well-being of the people of Alberta and of Canada.

The goals outlined in the five-year plan strike us as reasonable, realizable and highly desirable. They are also consistent with the announced intentions of the government of which you are a member. We are expecially impressed by the proposed new initiatives and by the arguments in favor of a relatively modest increase in the established programs, especially the University-Industry initiatives, the funding of capital equipment and of infrastructure, and the various types of support of skilled research personnel, from graduate students to research professors.

. . . . . .

We urge you to do all you can to assure early implementation of this plan. My colleagues and I would be happy to discuss these questions in detail with you at your convenience.

Yours sincerely,

J. Gordin Kaplan,
Vice-President (Research).

JGK/gf

c.c. Rt. Hon. Brian Mulroney, M.P.
Hon. Tom Siddon, M.P.
President M. Horowitz.
Mr. Gordon McNabb.
Members of the Alberta Caucus.

University of Alberta
Edmonton
Canada T6G 2J9

Office of the
Vice-President (Research)
3-2 University Hall, Telephone (403) 432-5353/5355

July 18, 1985.

The Hon. Don Mazankowski, M.P.,
Minister of Transport,
House of Commons,
Ottawa, Canada.
K1A 0A6

Dear Mr. Minister:

Re: NSERC Five-Year Plan

We at the University of Alberta have now had the opportunity of studying this document and President Horowitz has asked me to convey to you our viewpoint. While the government of Alberta has instituted many valuable research initiatives, such as Farming for The Future, The Alberta Oil Sands Technology and Research Authority and the Alberta Heritage Foundation for Medical Research, essentially all fundamental and most applied research in our Faculties of Science, Engineering and Agriculture are dependent upon NSERC for their very existence. Thus, the programs of NSERC and the level of funding of this agency by the federal government are of vital concern not only to the universities, but also to the economic well-being of the people of Alberta and of Canada.

The goals outlined in the five-year plan strike us as reasonable, realizable and highly desirable. They are also consistent with the announced intentions of the government of which you are a member. We are expecially impressed by the proposed new initiatives and by the arguments in favor of a relatively modest increase in the established programs, especially the University-Industry initiatives, the funding of capital equipment and of infrastructure, and the various types of support of skilled research personnel, from graduate students to research professors.

. . . . . .

1856

We urge you to do all you can to assure early implementation of this plan. My colleagues and I would be happy to discuss these questions in detail with you at your convenience.

Yours sincerely,

J. Gordin Kaplan,
Vice-President (Research).

JGK/gf

c.c. Rt. Hon. Brian Mulroney, M.P.
Hon. Tom Siddon, M.P.
President M. Horowitz.
Mr. Gordon McNabb.
Members of the Alberta Caucus.

University of Alberta
Edmonton
Canada T6G 2J9

Office of the
Vice-President (Research)
3-2 University Hall, Telephone (403) 432-5353/5355

July 18, 1985.

The Hon. Harvie Andre, M.P.,
Minister of Supply and Services,
House of Commons,
Ottawa, Canada.
K1A 0A6

Dear Mr. Minister:

Re: NSERC Five-Year Plan

We at the University of Alberta have now had the opportunity of studying this document and President Horowitz has asked me to convey to you our viewpoint. While the government of Alberta has instituted many valuable research initiatives, such as Farming for The Future, The Alberta Oil Sands Technology and Research Authority and the Alberta Heritage Foundation for Medical Research, essentially all fundamental and most applied research in our Faculties of Science, Engineering and Agriculture are dependent upon NSERC for their very existence. Thus, the programs of NSERC and the level of funding of this agency by the federal government are of vital concern not only to the universities, but also to the economic well-being of the people of Alberta and of Canada.

The goals outlined in the five-year plan strike us as reasonable, realizable and highly desirable. They are also consistent with the announced intentions of the government of which you are a member. We are expecially impressed by the proposed new initiatives and by the arguments in favor of a relatively modest increase in the established programs, especially the University-Industry initiatives, the funding of capital equipment and of infrastructure, and the various types of support of skilled research personnel, from graduate students to research professors.

. . . . . .

We urge you to do all you can to assure early implementation of this plan. My colleagues and I would be happy to discuss these questions in detail with you at your convenience.

Yours sincerely,

J. Gordin Kaplan,
Vice-President (Research).

JGK/gf

c.c. Rt. Hon. Brian Mulroney, M.P.
Hon. Tom Siddon, M.P.
President M. Horowitz.
Mr. Gordon McNabb.
Members of the Alberta Caucus.

THE UNIVERSITY OF CALGARY
2500 University Drive N.W., Calgary, Alberta, Canada T2N 1N4

DEAN'S OFFICE
FACULTY OF ENGINEERING
Telephone (403) 220-5738

Office of the Minister of State Cabinet de la Ministre d'État Sciences et Technologie

1985-07-17

The Hon. Thomas Siddon
Minister of State for Science and Technology
119 East Block
Parliament Bldgs.
Ottawa, K1A 0A6

Dear Dr. Siddon:

Re: The Second Five Year Plan of the Natural Sciences and Engineering Research Council (NSERC)

My purpose in writing to you is to ask the Federal Government to give full and serious consideration to NSERC's recently published Second Five Year Plan.

As you know, the only hope for Canada to succeed as a major trading nation in the face of fierce international competition is to be outstandingly effective in the development and application of new technologies in areas of strategic importance. Implementation of the Second Five Year Plan is vital because it is the only significant mechanism available to the Federal Government that will give Canada the necessary source of highly qualified manpower required for the application of modern science in industry.

Under the leadership of President Gordon MacNabb, the NSERC has developed into a highly responsive and significant force for the enhancement of science and engineering in this country. NSERC has introduced a number of new programs that have encouraged university researchers to work closely with Canadian industry on projects of mutual interest. It has been my experience, both in industry and as an educator involved in official visits to a large number of our universities, that NSERC's programs have significantly enhanced the transfer of advanced technology from universities to Canadian industry. I am completely convinced that the accelerated funding that is requested in the Second Five Year Plan will be a wise investment of the taxpayers' money, leading to the new generation of highly qualified Canadian scientific manpower that is so vital if our industries are to compete in international markets.

I believe you will find that the Second Five Year Plan is well conceived, concentrating much of the new funds in key areas related to university-industry interface, infrastructure support for research and retention of qualified manpower. It will lead to jobs and a more competitive Canada.

Sincerely

L. T. Bruton
Dean of Engineering

LTB:mh

THE UNIVERSITY OF CALGARY

2500 University Drive N.W., Calgary, Alberta, Canada T2N 1N4

DEAN'S OFFICE
FACULTY OF ENGINEERING

Telephone (403) 220-5738

1985-07-17

The Hon. Eric Nielsen
Deputy Prime Minister
209-S Centre Block
Parliament Bldgs.
Ottawa, K1A 0A6

Dear Mr. Nielsen:

Re: The Second Five Year Plan of the Natural Sciences and Engineering Research Council (NSERC)

My purpose in writing to you is to ask the Federal Government to give full and serious consideration to NSERC's recently published Second Five Year Plan.

As you know, the only hope for Canada to succeed as a major trading nation in the face of fierce international competition is to be outstandingly effective in the development and application of new technologies in areas of strategic importance. Implementation of the Second Five Year Plan is vital because it is the only significant mechanism available to the Federal Government that will give Canada the necessary source of highly qualified manpower required for the application of modern science in industry.

Under the leadership of President Gordon MacNabb, the NSERC has developed into a highly responsive and significant force for the enhancement of science and engineering in this country. NSERC has introduced a number of new programs that have encouraged university researchers to work closely with Canadian industry on projects of mutual interest. It has been my experience, both in industry and as an educator involved in official visits to a large number of our universities, that NSERC's programs have significantly enhanced the transfer of advanced technology from universities to Canadian industry. I am completely convinced that the accelerated funding that is requested in the Second Five Year Plan will be a wise investment of the taxpayers' money, leading to the new generation of highly qualified Canadian scientific manpower that is so vital if our industries are to compete in international markets.

I believe you will find that the Second Five Year Plan is well conceived, concentrating much of the new funds in key areas related to university-industry interface, infrastructure support for research and retention of qualified manpower. It will lead to jobs and a more competitive Canada.

Sincerely

Les Bruton

L. T. Bruton
Dean of Engineering

LTB:mh

bc: Dr. R. Church
Dr. R. Kavanagh
Dr. R.O. Lindseth
Dr. G.M. MacNabb

Series of letters sent to:
Hazen Argue
Flora MacDonald
Brian Mulroney
Eric Nielsen
Tom Siddon

Office of the Minister of State
Cabinet du Ministre d'État

22 VII 1985

Sciences et Technologie

BIOLOGICAL COUNCIL OF CANADA • OFFICE OF THE PRESIDENT
CONSEIL CANADIEN DE BIOLOGIE • BUREAU DU PRÉSIDENT

Department of Zoology
University of Alberta
Edmonton, Alberta
Canada T6G 2E9
Telephone: (403) 432-4165
(403) 432-3308
Telex: 037-2979

July 12, 1985

The Honourable Tom Siddon, MP
Minister of State for Science
and Technology
The House of Commons
OTTAWA, Ontario
K1A 0A6

Dear Mr. Siddon:

One of the highlights of the recent Canadian Congress of Biology, held at the University of Western Ontario, 23-29 June, 1985, was the explanation of the new Five-Year Plan of NSERC by Dr. Gordon MacNabb. He spoke at a plenary session on Wednesday, 26 June, to a full house. The audience was curious, attentive and appreciative, for the effective functioning of NSERC is vital to the successful progress of basic science in our universities. That, in turn, is the basis of a Canadian presence and influence in science and technology in its local and global relations.

The Canadian scientific community has noted with growing dismay the attrition of NSERC's ability to plan ahead and then to support the requests that are brought to it. At the present time NSERC has had to curtail markedly its support of science, because of governmental unwillingness to allow it to work at a level of support equivalent to that in other countries with which we compete. For instance, it is widely seen as a tragedy that requests for equipment grants are practically unanswerable because no money is available. This means that our labs are rapidly falling into absolescence so that our best scientists are forced to fall behind and our training of young scientists becomes second rate. This is deeply resented and widely discussed. We watch in wonder as successive governments claim to want to push the support of science to 1.5% of GNP, while each year that support fails to advance to target and the deadline is moved back another year or two.

Our scientists have the intelligence, the imagination, the drive and the impulse to lead the world, yet they are not allowed to, despite governmental claims that research and development shall help lead the way to economic well-being. The words and actions are distinctly counter to each other. As scientists we believe what we can see and measure and we base our hypotheses on past experience. Unsupported statements and pious hopes are not the stuff of progress.

...continued on Page 2

I have examined "NSERC's Second Five-Year Plan: Completing the Bridge to the 90's" with care and deep interest. One of the labours put upon the granting councils by successive governments has been the demand for five-year plans. This has forced the councils to look closely at their operations, the expectations of those that depend on them, and the realities of the world. In the case of NSERC, the latter means the potentialities of science, how Canada can utilize these to maintain a respectable place in the world and to face up to the burgeoning effect of technological advancement. That is to say science is important intellectually, politically and economically. And it does not matter what order one puts those in, for they are inseparable.

NSERC has approached this task, twice now, with diligence and care. One sees the Second Five-Year Plan as being nearly impeccable. The first section of the plan, dealing with the last five years, establishes a firm foundation from which the new plan is developed. Three things stand out: the first of these is the amazing proportion of the budget of NSERC that goes directly to the support of science. That only about 3% goes to administrative costs reflects the devotion and efficiency of the small NSERC staff and the sense of participation of the scientific community. A request to serve NSERC voluntarily is considered to be an honour by a scientist.

The second thing that is quickly apparent is the failure of governments to support the First Five-Year plan. (see Fig. 2, p. 6, to get a picture of the chaotic financing of NSERC, through which the Council struggled to adapt and keep Canada on the scientific tracks. That it managed largely to do so and maintain the respect of its constituency speaks loudly for its effectiveness and the strength of the system that has evolved). The failure of support has placed an incredibly heavy load on NSERC and constraints on its planning that colour everything that follows.

The third thing that shows up early is illustrated in Fig. D, p. xxiii. Financial requirements for the next five years will be relatively greater as NSERC and the scientists dependent on it struggle to make up ground lost owing to insufficient support during the last few years. NSERC's inability to provide the latest equipment to applicants has been particularly important. Scientists thus deprived must work more slowly, less accurately and in fewer fields of investigation than those elsewhere. Thus we consign ourselves to the second rank, "a scenario of dismal dependency" to make use of NSERC's words (p. 119, NSERC's Second Five-Year Plan).

The second section of the Plan reassesses the position of Canada as a scientifically productive nation. There is hope in this section, but it is contingent upon recognition both of the problem and of the utility of financing science. From among the many cogent arguments of this section let me fasten on two points. One of these is the expectation of MOSST that indistry will move to a dominant position in the gross expenditure on R + D (GERD). One recognizes the ideological advantages in such an expectation, but

...continued on Page 3

it is unreal, as life unfolds. In 1979 industry contributed 39.6% to GERD; in 1984, it contributed 40.1% (Table 41, p. 122, NSERC's Second Five-Year Plan). There is no significant difference between those figures. At the same times federal Government support measured 36.0% and 38.1%, respectively. There is little difference there, either. Yet in 1985, MOSST expects Federal Government support to drop to 33.3% and industrial support to rise to 50.0%. The moon is green cheese! The first can happen by governmental fiat, and indeed we tremble that such is happening: let us cut staff here, remove a program there, abandon responsibility somewhere else. But, by and large, the motivation of industry bears only a coincidental relationship to the development of Canada as an advanced nation. It will take advantage of achievements of science and the subsidies of government in very specific ways. It will pluck what it needs and maybe even develop those things further. Its vision is precise and focussed on a well-defined target. It knows when the target is struck. It will go no further and will not waver from its defined line.

The end point for a scientist, chasing phenomena rather than a market, is something else. His conclusion is with an explanation. Invariably the explanation is actually a system of more profound questions. The interface between research and development is with the marketable utilization of some element of the phenomenon, something that can be picked out and worked with for commercial advantage. What industry requires is a sharp eye for the marketable element. Sometimes it is the scientist himself who recognizes the marketable element and decides to follow it to success. Here industry can play a strong role, by being receptive and supportive. NSERC too can play its part with its interface activities (see Chap. 18, NSERC's Second Five-Year Plan and the Technology Transfer Handbook, 1985). But industry will not provide the basic science.

A second point raised in the section on reassessment concerns the recurrent problems of Established Program Financing. As the report points out, financing of science is closely tied to resolution of federal-provincial differences in modes of university support. I can only echo the NSERC statement (p. 126) that "The current federal-provincial arrangement for support of university-based research is sadly failing this nation." That problem must be resolved so that NSERC's role can be unequivocally defined.

The NSERC plan deals with human rsources (p. 127 ff.). It must be recognized that Canada is a debtor nation in terms of intellectural resources. NSERC's own figures show that more than half our productive scientists are foreign-born and trained and that a large proportion of Canadians are at least partly foreign-trained, especially at the advanced levels (p. 133, footnote, NSERC's Second Five-Year Plan). However, Canadian universities and Canadian students have the capacities to give and benefit from education to a level equal to any in the world. The contribution of NSERC to that process is incalculable, although I suppose it could be done in terms of dollars, for a large part of NSERC grant funds go to the direct

...continued on Page 4

support of students and postdoctoral fellows. Expansion of direct support is suggested to Research Professorships, Reorientation Fellowships and Visiting Post-doctoral Fellowships. These sorts of things provide the critical support, that of the people who are learning and doing the science. To be able to move and mingle learners and researchers, which these support programs propose, is well-demonstrated as a means of shaking out ideas and getting projects into high gear.

The Second Five-Year Plan itself is outlined concisely, reasonably and firmly fixed to the foundation of the recent history of NSERC. It is a plan for what can be done to keep Canada respond to the economic and intellectual challenges of the next five years. It represents a modest investment into limitless prospects. As the report points out (p. xxiv) the Five-Year Plan is budgetted at $200 million less than one year's subsidy of frontier and exploration through PIP. Oil exploration may bring in cash; NSERC's constituency will bring in cash (though not as starkly accountable as that of an oil company) but it will also maintain and enhance our national reputation because of the knowledge and values developed. Shakespeare, in Othello, spoke wisely of the relative worth money and reputation. Libya has lots of oil. We can do better than that. We can develop our own resources because we have our own talent, capabilities and understanding of how to bring together people and resources, science and the marketplace, a tradition of knowledge and a tradition of work.

The purpose of this letter is to confirm to you that the Biological Council of Canada, representing some 4000 biological scientists, stands solidly in support of NSERC and its plans to move sturdily into the future. This is not the place to debate specific items of a plan, although we shall be prepared to discuss particular things in the Second Five-Year Plan if asked. Here we make our support known. Scientists in Canada find NSERC forward-looking, reasonable and deeply concerned for the best interests of the nation. They are a part of us and we of them, because of the voluntary association of literally thousands of scientists through the years, who have contributed to peer review, judgement of results, planning and program analysis. NSERC is more than just an agency doling out cash; it is a pacemaker, closely attuned, by its association with scientists, to the needs of science in Canada.

I urge you, on behalf of my fellows in the Biological Council of Canada, to consider carefully and to act promptly and positively to secure the Second Five-Year Plan as a major component of your government's efforts to improve the Canadian condition. I reiterate the willingness of the Biological Council of Canada to assist you in any way possible with your analysis and evaluation of the NSERC Second Five-Year Plan. Our members are widely experienced and expert in many fields. Members would be honoured to be asked to be able to help in matters so critical to the future of Canada.

Respectfully submitted,

J. R. Nursall
Professor of Zoology

JRN/jcs
cc: Mr. Erik Nielsen, MP

BIOLOGICAL COUNCIL OF CANADA • OFFICE OF THE PRESIDENT
CONSEIL CANADIEN DE BIOLOGIE • BUREAU DU PRÉSIDENT

Department of Zoology
University of Alberta
Edmonton, Alberta
Canada T6G 2E9
Telephone: (403) 432-4165
(403) 432-3308
Telex: 037-2979

July 11, 1985

The Honourable Tom Siddon, M.P.
Minister of State for Science and Technology
The House of Commons
Ottawa, Ontario
K1A 0A6

Office of the Minister of State
Cabinet du Ministre d'État
17 VII 1985
Science and Technology
Sciences et Technologie

Dear Mr. Siddon,

The requirement that NSERC reduce its manpower by even a small percentage is greeted with incredulity by its constituency, the productive university scientists of Canada. None of these is a fan of bureaucracy in any form or of administrative largeness. Indeed, NSERC is our best example of an effective organization that runs with the smallest possible staff. It is able to do this because of the devotion of its staff, especially the executives, and the huge effort expended by its voluntary workers, i.e., the Council itself, the Advisory Committees, the Group Chairmen, the 19 Grant Selection Committees and the special groups assembled for special purposes. There is a rich sense of loyalty, unity and understanding that this is labour designed for the betterment of the Canadian weal. You must understand that this sense of collective purpose does exist. NSERC represents a specifically Canadian operation that works, the efficiency of which is admired far beyond our borders. Because it works, it provides a standard by which Canadian scientists measure themselves.

NSERC administrative costs hover at about 3% of the budget (look at Table 1, p xx, Completing the Bridge to the 90's: NSERC's Second Five-Year Plan). What other organization can show that level

... 2

of performance? Even charitable organizations are allowed up to 20% for internal purposes. Savings will surely be miniscule and will not make up for reduction in NSERC productivity. What also will be lost will be any sense that the government is serious when it talks about R & D as important components in economic recovery. One cannot promote R & D by slowing down the mechanism for its promotion. Nor can there be any expectation that somehow there will be an industrial boost to make things go faster. That sort of operation is entirely foreign to industry. NSERC is unique in its positive effect on research in Canada, because it works and because the scientists of the country have a significant participating voice, through their voluntary service. You may be sure that the pulse of NSERC is monitored closely by those scientists and they will immediately recognize the slowdown in its beat. Slowing down is not what we must do to revitalize our productivity. Penny wisdom is not the answer. Productive, clear-sighted, future-oriented organizations such as NSERC should be bolstered and encouraged by our government, not cut back. Without political axes to grind, by their promotion of the best science and by the results they produce, such agencies provide tangible benefits to the country and with that, gifts to the government that can claim enlightened support of their activity.

Yours truly,

J. R. Nursall,
President

JRN:tm
cc: Jim Edwards, M.P.
David Berger, M.P.
Michael Cassidy, M.P.
Bobbie Sparrow, M.P.
Charles Caccia, M.P.
Howard McCurdy, M.P.

DALHOUSIE UNIVERSITY
HALIFAX, N.S.
B3H 3J5

July 4, 1985

The Honourable Tom Siddon
Minister of State for Science
and Technology
House of Commons
Ottawa, Ontario

Dear Mr. Siddon:

I have just read the document, 'Completing the Bridge to the 90's, NSERC's Second Five Year Plan'. May I say that I regard this as an excellent report. I am sure that you would agree with me that Canada's economic, social and intellectual future is strongly dependent on the maintenance and growth of a strong Canadian scientific community. I believe I speak for the Faculty of Arts and Science at Dalhousie in urging you to do your utmost to convince your Cabinet colleagues to adopt NSERC's new Five Year Plan, including the funding provisions.

Yours sincerely,

Donald D. Betts

Donald D. Betts, Ph.D.,F.R.S.C.
Dean, Faculty of Arts & Science

DDB:jw

cc: Dr. W.A. MacKay, President
Dalhousie University

CCUBC
CUDBC

Canadian Council of University Biology Chairmen
Conseil universitaire des Directeurs de Biologie du Canada

IVE COMMITTEE 1985

ident
M. McNeill
Dept. of Biology
University of Ottawa
Ottawa, Ontario
K1N 6N5
Telephone (613) 231-2336

Vice-President
J.P. Williams
Dept. of Botany
University of Toronto
Toronto, Ontario
M5S 1A1

Past President
K. Nair
Dept. of Biological Sciences
Simon Fraser University
Burnaby, B.C.
A 1S6

Committee Members
McIver
Dept. of Environmental Biology
University of Guelph
Guelph, Ontario
N1G 2W1

E. Pater
Dept. Zoology
University of Alberta
Edmonton, Alberta
G 2E9

Stewart
Department of Entomology
Macdonald College
P.O. Box 229
Ste. Anne de Bellevue, P.Q.
H9X 1C0

J.E. Thompson
Dept. of Biology
University of Waterloo
Waterloo, Ontario
N2L 3G1

Weisbart
Dept. of Biology
St. Francis Xavier University
Antigonish, N.S.
B2G 1C0

Secretary
J.T. Arnason
Dept. of Biology
University of Ottawa
Ottawa, Ontario
K1N 6N5
Telephone (613) 231-3458
(613) 231-2338

July 3, 1985

Honourable Tom Siddon, P.C., M.P.
Minister of State, Science & Technology
House of Commons
Ottawa, Ontario
K1A 1A1

Dear Mr. Siddon:

I was glad to receive your letters of November 28, 1984 and April 9, 1985 responding to the concern I had expressed on behalf of the Canadian Council of University Biology Chairmen regarding the funding of the Natural Sciences and Engineering Research Council.

In particular, I was pleased to read that an early resolution of the uncertainty surrounding NSERC budgets remained very high on your list of priorities, and, of course, we, as a Council, are very appreciative of your efforts that secured the release of the $20 million of supplementary funding for equipment in the 1984-85 fiscal year announced in March.

Nevertheless, it is a fact that funding for Scientific Research and Development in Canadian Universities is in a more perilous situation than at any time over the past five years. At the present time, NSERC's budget for 1985-86 represents a cut of $29 million, almost 10%, on the 1984-85 allocation. This is an even graver situation than that which presaged many of the last minute supplemental funding decisions for which we both criticized the previous government.

Our Council is very pleased to see the publication of NSERC's Second Five-Year Plan, and we will give you our views on this, as soon as we have had time to review it. For the moment, however, we would press upon you the urgent need, if the present government's goals for Canadian economic development are to be achieved, to bring NSERC's budget for 1985-86 up to the baseline projected under the revised Alternative III of the first 5-year plan.

. . . / 2

We very much hope that the government will live up to its commitments to support the essential research base of the Canadian economy and that you will be in a position very soon to reassure us that the serious shortfall in NSERC funding will be made up.

Yours sincerely,

J. McNeill
President

JMcN/sr

P.O. Box 1000
Halifax, Nova Scotia
Canada B3J 2X4

Telephone (902) 4[illegible]

June 28, 1985

Dr. Gordon MacNabb
President
Natural Sciences & Engineering
Research Council of Canada
Ottawa, Ontario
K1A 0R6

Dear Dr. MacNabb:

Re: NSERC's Second Five Year Plan

I write to congratulate you most warmly on the clarity and cogency of argument that is contained in the document "NSERC's Second Five Year Plan".

It is quite probable that in the future, as in the past, I shall feel impelled to write to you about the functioning of NSERC as it touches the Technical University of Nova Scotia. However, I have no doubt that the "big picture" as developed by you and your colleagues, is a masterly overview of Canada's R and D needs, and that it deserves to become required reading for all M.P.s.

Enclosed is a copy of a letter which I am sending to the M.P. for Halifax, Mr. Stewart McInnes, Q.C., and to other Nova Scotia M.P.s. My hope is that University Presidents across Canada will be equally supportive of your document, and that a very broad spectrum of political support for it will result.

Once again, my congratulations on a very fine document.

Yours sincerely,

J. Clair Callaghan, P.Eng.
President

JCC/gg

Enclosure

June 28, 1985

Mr. Stewart McInnes, Q.C., M.P.
2624 Windsor Street
Halifax, Nova Scotia
B3K 5C8

Dear Mr. McInnes:

I write to commend to you the document "NSERC's Second Five Year Plan" that was recently promulgated by the President of NSERC, Dr. Gordon MacNabb. The plan is for the years 1985 to 1990.

In the quest for Canada to be internationally competitive in higher technology, one of the key players, perhaps the most important single entity, is the Natural Sciences and Engineering Research Council of Canada (NSERC). It is the agency through which most of the research support to Canadian Universities flows, and its programs are vital in fostering applied research of the kind that links universities and private industry, and results in new, state-of-the-art products of Canadian manufacture appearing in the market place.

There is common agreement, among all people involved, that Canada must in future spend a larger percentage of GNP on research and development than it has done in the past, if the country is to be internationally competitive in "high-tech" industries. You will probably recall that in the general election held last year, Mr. Mulroney gave strong support to increasing Canada's R and D effort. NSERC has just completed a first five year plan, and is about to embark upon a second one. Acceptance and implementation of this plan is essential if Canada is not to fall far behind the rest of the industrialised world.

I believe that the plan is excellently conceived and also realistic in its financial implications. As originally conceived five years ago, the percentage of GNP devoted to research and development was planned to rise to 1.5% by 1983 and to 2.5% by 1990. It has not been possible to hold to this conception, because of its cost. What the NSERC Second Five Year Plan does is to bring the R and D effort to 1.5% of GNP by the year 1990, instead of the originally planned 1983. It seems to me that this revised goal is realistic, financially responsible, and the minimum that Canada should be committing itself to.

. . /2

June 28, 1985

Mr. Stewart McInnes, Q.C., M.P.

Finally, may I note that although increased spending on R and D will benefit all Canadians, the benefits will be especially large in your own constituency of Halifax, when the research health of the universities in the constituency is directly linked to the NSERC Plan.

Yours sincerely,

J. Clair Callaghan, P.Eng.
President

LGJ/gg

cc: Dr. Gordon M. MacNabb, President - NSERC

THE PRINCIPAL
AND VICE - CHANCELLOR

Queen's University
Kingston, Canada
K7L 3N6

September 16, 1985

Dr. G. M. MacNabb
President
Natural Sciences and Engineering
Research Council
200 Kent Street
Ottawa, Ontario
K1A 1H5

Dear Gordon,

NSERC's five year plan was received at Queen's University several weeks ago, but I have only recently had the opportunity to review it. I must congratulate you and your colleagues at NSERC for producing such a comprehensive and extremely readable account of your past achievements and of your proposals to establish a bridge to the 90s.

Under your able leadership, NSERC has assumed a dominant role in making representations to the government on behalf of the Canadian research community. Your arguments for a budget which more than doubles in real terms over the next five years are well thought out and convincing. I hope that your report will have the same impact on Cabinet.

Please be assured of Queen's support. I have written to the Right Honourable Brian Mulroney expressing this support, and I am urging faculty members to write to Ministers.

Again, congratulations on a job well done. Please let me know if Queen's can be of any assistance in your task of guiding your proposals through to implementation.

Yours sincerely,

David C. Smith
Principal and
Vice-Chancellor

SIMON FRASER UNIVERSITY, BURNABY, BRITISH COLUMBIA, CANADA V5A 1S6. (AREA CODE 604) 291-4636
VICE-PRESIDENT ACADEMIC

19 June 1985

VIA COURIER

Dr. Tom Siddon, P.C., M.P.
Minister of State, Science
and Technology, Room 449WB
House of Commons
OTTAWA, Ontario, K1A 0A6

Dear Dr. Siddon:

Having just returned from Ottawa and the unusual events surrounding last week's Science Council of Canada meeting, I am strongly encouraged to write to you, our Minister, as a university scientist and as a member of the Science Council. I do so to make two particular points: -

1) I strongly endorse your endeavors to obtain increased research funding for NSERC. In view of the precarious financial state of many of our major research universities, it is of paramount importance in your development of a national science programme (related in part to industrial needs) that NSERC receives strong support for its long term plans and for its immediate needs. I cannot, in view of the inordinate pressures on the university system, and also on our national economic development, overemphasize the importance of the two pronged needs of NSERC. I know that I speak for a large number of experimental scientists across the country.

cont'd...../2

2) I would like to encourage you to believe of the passionate interest and concern of myself and fellow Science Council members for the nation's science and technology. I know that this passion is no less than your own, and it was this strong belief in the value of the Science Council that brought us to your door last week. We must work together, the Ministry on the one hand and the Council on the other, to achieve a difficult task in the country as a whole. I do believe, that Canada, and our Prime Minister and his government, urgently need the Council's collective wisdom, independence of thought and (with your help) ability to respond to the magnitude of today's complex challenge to Canada.

My colleagues and I look forward to taking the great opportunities of today and to improving the scientific and technological base for contemporary and future Canadians.

Yours sincerely,

John M. Webster, Associate Vice-President
Academic and Dean of Graduate Studies.

mmc

c.c. S. Smith, President, Science Council of Canada
G. McNabb, President, NSERC
E. Nielsen, Deputy Prime Minister
B. Mulroney, Prime Minister
C. Cook, M.P.

THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
Department of Family Studies

Winnipeg, Manitoba
Canada R3T 2N2
(204) 474-9225

May 9, 1985

The Hon. Ray Hnatyshyn
President, Queen's Privy Council for Canada
Room 209S Centre Block
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Mr. Hnatyshyn:

Re: Support for the Social Sciences and Humanities Research Council, the Medical Council and the Natural Sciences and Engineering Research Council

The level of funding to the above cited granting Councils is of grave concern to my colleagues and I in the Faculty of Human Ecology at the University of Manitoba. On the one hand, we have been encouraged by the interest and commitment your Government has shown in research and development; on the other hand, we are deeply concerned about the uncertainties surrounding the level of funding that will be available to the three Councils.

We are particularly concerned with the serious underfunding of the Social Sciences and Humanities Research Council of Canada, both in terms of absolute dollars and in relation to the other two Councils. This underfunding, which has occurred for a long time, in spite of repeated appeals to the previous Government, has had a serious effect on research in the social sciences and the humanities. The understanding of research in these areas has had and will continue to have, if not corrected, a direct effect on the well-being of Canadians and on the quality of life in this country of ours. Members of our Faculty are frustrated by the general lack of funds available for research into the impact of social and economic changes on families. Projects such as the integration of children with special needs, the influence of ethnoreligious background on the attitudes of children towards the care of their elderly parents and studies into dual-career families limp along because of inadequate financial support.

We are also concerned with the uncertainty of funding to the Natural Sciences and Engineering Research Council and the Medical Research Council. Although funding to these Councils has been superior to that to the Social Sciences and Humanities Research Council, it is critical that Canada not simply keep abreast of scientific and technological developments

.../2

but, where appropriate, that we lead them. The present level of funding to these granting councils has made it particularly difficult for young scientists to obtain grants in aid of research. If we do not support these young scientists we will lose a generation of researchers. It is no accident that the United States leads in computer technology and Japan in robotics.

In addition to the inadequate levels of funding provided to the existing granting councils it is also important to note that an important Canadian funding agency was eliminated prior to your Governments taking power. I am referring to the Non-Medical use of Drugs Directorate. This agency funded alcohol and drug use research in Canada. Since the dissolution of this funding agency there has been no funding agency in Canada assigned to pick up the types of research originally funded by this agency. This problem is particularly acute for social science researchers. SSHRC does not have the mandate or the resources to fund alcohol and drug use researchers.

My colleagues and I appreciate the serious fiscal problems faced by your Government. Nevertheless, we are deeply concerned with the present uncertainties regarding the level of funding to these granting Councils for 1985/86. Imposing budget restraints on the Councils would be shortsighted. A healthy investment in research now will secure a better future for all Canadians.

Yours truly,

Gordon E. Barnes, Ph.D.
Head & Associate Professor

GEB/dah

McGill University

Department of Biology
Genetic Manipulation Research Group
1205 Avenue Docteur Penfield
Montreal, PQ. Canada H3A 1B1

May 8, 1985

The Honourable Tom Siddon
Minister of State
Science and Technology Canada
Ottawa, Canada
K1A 1A1

Dear Sir:

I would like to thank you for your letter of April 9th, 1985 and was pleased about the additional support that you provided recently for the NSERC programs. Science is a backbone of any industrialized nation and the progress in this area can only be sustained on long range bases. In this respect the idea of 5 year plans of NSERC has been very useful. In a recent meeting with Dr. Gilles Julien, we discussed some of the objectives of the 2nd five year plan which, I understand, has been presented to the parliament.

One specific problem that became apparent is that, Canada not only faced with the lack of availability of high quality researchers and trained manpower in advanced technology area during the next 5-10 years, but may not be able to produce them under the current support structure. This problem is more or less a global one, however, other major industrialized nations have begun to concentrate their efforts by creating centers of major activities in each field. NSF in the United States has recently formed several major centers in basic sciences.

While in the short range the immigration regulations must be relaxed for foreign graduate students and post doctoral fellows to encrease the pool of scientific manpower, ultimately, we must produce sufficient world-class Canadian researchers to meet the demands of our industries and universities. This can best be achieved by creating at least 50 centers of excellence (10/year) at major universities supported under the second 5 year plan of NSERC. These centers should be free of any political, regional or other affiliation and should be solely based on the quality of research. They should be rigorously reviewed every five years to maintain their competitive edge. These centers would serve as catalyst in improving the overall standard of Science in Canada and help make it internationally competitive. This has been well illustrated in the Johnson report and, I believe, such a move would find favourable support from the scientific community at large.

Thank you for your consideration.

Sincerely yours,

D.P.S. Verma
Professor & C P Scholar

c.c. Dr. G. MacNabb
Dr. A. Collin

Office of the Minister of State / Cabinet du Ministre d'Etat

16 V 1985

Science and Technology / Sciences et Technologie

cc-NSERC
for info

Department of Nutritional Sciences
Faculty of Medicine, University of Toronto
Toronto, Ontario, M5S 1A8

April 29, 1985

The Honourable Tom Siddon, P.C., M.P.
Minister of State, Science and Technology
Ottawa, Ontario
K1A 1A1

Dear Dr. Siddon:

It was very kind of you to write and share with us the good news of the 20 million of supplementary funding for NSERC. On behalf of my colleagues and myself let me thank you for the great concern you have shown to ensure that meaningful research and the development of ideas generated will continue in Canada. There is no better place for such dollars than NSERC and we can only hope that the second five year plan will be able to be viewed in this light.

Once again our genuine thanks.

With best wishes

Sincerely,

David J.A. Jenkins, MD, PhD
Professor

DJAJ/mmh

Office of the Minister of State / Cabinet du Ministre d'Etat

09 V 1985

Science and Technology / Sciences et Technologie

5105 308

THE UNIVERSITY OF MANITOBA
FACULTY OF GRADUATE STUDIES
500 University Centre
Winnipeg, Manitoba
Canada R3T 2N2
(204) 474-9377

April 9, 1985.

The Right Hon. M. Brian Mulroney,
Prime Minister's Office,
Langevin Block,
Ottawa, Ontario, K1A 0A2.

Dear Mr. Mulroney,

Re: Support for the Social Sciences and Humanities Research Council of Canada, Medical Research Council, and Natural Sciences and Engineering Research Council.

I would like to convey my concern over the present uncertainties facing the 1985/1986 budgets of the three granting councils.

While the individual circumstances of the three councils vary considerably (as I assume you have already been thoroughly apprised), they do share a common and essential role which is of central concern from my perspective as a graduate dean. Canadian universities, in their graduate programs in particular, serve two major functions in our society: the development of new knowledge, and the preparation of successive generations of new scholars and highly skilled professionals. The role of the granting agencies in promoting that first responsibility is obvious and copiously documented. Their role in the second is sometimes less clear. The various programs of these councils provide cumulatively the single greatest source of graduate student support, on the one hand, and systematic research experience, on the other. For this reason it is absolutely imperative that the levels of support available through the councils be consistent and dependable. Only in this way will the universities be in a position to plan and maintain in concert with concerned public and private agencies, a pattern of graduate enrolment in some reasonable concert with national and regional needs. Sporadic funding will inevitably result in chaotic enrolment patterns, to the detriment of the country as much as to the universities themselves.

The Canadian universities have been very much encouraged in the last while by the present government's statements concerning research and development. I would like to be sure that the issue of maintaining a permanent and stable base of researchers and skilled professionals receives appropriate attention in that agenda.

Sincerely,

Kenneth R. Hughes, Ph.D.
Dean.

KRH/jp

ORIGINAL TO M. Sloan
ORIGINAL ENVOYE A
C.C. PMO FILE M00002
C.C. DOSSIERS CPM

THE UNIVERSITY OF MANITOBA DEPARTMENT OF CHEMISTRY Winnipeg, Manitoba
Canada R3T 2N2

March 26, 1985.

The Honourable Flora Macdonald,
Planning and Priorities Committee,
Government of Canada,
Ottawa, Ontario,
K1P 5A2.

Dear Ms. Macdonald:

RE: Funding for the Natural Sciences of Engineering Research Council (NSERC)

I am aware of how very busy you must be and that letters from private citizens may not always be helpful. However, I cannot help but write to you concerning funding for NSERC.

The initial 5-year plan of NSERC, approved by the Clark government and only partially funded by the last government, made an excellent start towards the rejuvenation of research and manpower training activities in Canadian universities, as well as providing strong encouragement to interaction of university researchers with industry. In my opinion, much of its success depended on the high qualities of Gordon MacNabb and his dedicated staff (they work incredibly hard).

I say this as an active research scientist, as a member of a number of NSERC's committees and as a former Council member. Having travelled a great deal in Canada in these capacities, I am also impressed by the social consequences of NSERC funding. It has done much to link disparate regions of Canada and to counteract some of the centrifugal tendencies in Canada. I am reminded of the building of the railway some hundred years ago and find it curiously apt that the president of NSERC is also an engineer.

More specifically, I would like to congratulate and thank your government for its recent allocation of an extra $20M to NSERC. This sum has made a tremendous difference to researchers. For example, it made possible a grant to our university to replace an antiquated 20 year old mass spectrometer used in research and to train technical personnel. The new instrument will allow, for example, the rapid structure-determination of new anticancer agents (known as anthracycline derivatives) being synthesized by a colleague in chemistry. His morale and that of a number of his coworkers has been raised substantially and the award has piqued the interest of a number of senior undergraduate students.

Such grants also rejuvenate middle aged professors, who may previously have felt that their hard work over the years was no longer appreciated. In my own case, an equipment grant in 1983 again allows me to do good work, to compete internationally, to train graduate students and (unofficially) senior undergraduates in modern techniques, and to draw foreign colleagues to spend summers in my laboratory. It also puts short shrift to recent enquiries from a Texas university about my possible interest in joining their program (they must be expanding markedly if they are going after "old" men like me).

However, the example of the current award also demonstrates the continuing shortage of research funds. Good work and training cannot be done with 12 year old, much less 20 year old, instruments. There are still many such antiques in Canadian Universities. Two years ago we wanted very much to bring back to Canada a brilliant young physical chemist who had specialized in laser chemistry at Stanford University. He was willing to come, being a good prairie patriot, but needed substantial equipment funds. These could not be found. He is now a professor in the state of New York.

Another severe shortage is that in technical support. Sophisticated equipment needs sophisticated attention, as any industrial laboratory director knows and supplies. In our universities their exists a great lack of such persons. We can train them but not fund them. For many years I spent my weekends doing the necessary repairs and maintenance on my machines. This detracted from family life but also, to put it pompously, took time better spent on advanced research and teaching.

I know, of course, that money is scarce and that you are under tremendous pressure in your decision making. On the other hand, it seems to me that nowhere would money be better spent than for increased funding for NSERC in its next five year period. As an older researcher, I can say that perhaps it doesn't matter for me. It does matter for our young bright engineers and scientists, on whom the country will depend very much in the next 30 years. This may be trite, but it is also trenchant (my niece graduated in electrical engineering two years ago and is now working in Virginia -- she was not impressed by the graduate research funding available).

With best wishes for continued strength and enthusiasm for your heavy work.

Yours sincerely,

Ted Schaefer,
University Distinguished Professor.

TS:dmh

UNIVERSITY OF GUELPH
COLLEGE OF BIOLOGICAL SCIENCE
School of Human Biology

GUELPH, ONTARIO, CANADA N1G 2W1
Telephone (519) 824-4120

Rerum
Cognoscere
Causas

10 March, 1985

The Hon. Perrin Beatty
The Constituency Office
245 St. Andrew Street W.
Fergus, Ontario

Dear Perrin:

This is a request for your help. At this time of the year the 1985/86 budget for the Natural Sciences and Engineering Research Council (NSERC) is being decided in Ottawa. My request to you is for you to do anything you can to support the latest five year plan from NSERC. NSERC plays a vital role in the most fundamental research in the natural sciences. This is the research which is so basic that it is going to have its impact on the economic, material and health welfare of our country ten and twenty years from now. Many scientists in university now obtain funding from private foundations, i.e., ex-government. Nevertheless, NSERC plays a critical role in maintaining the most basic of that research and many of us could not run our laboratories if it were not for that central federal funding.

As I think you will recognize, it really is not feasible to switch that type of support on and then off again. Success in these basic research fields comes from an all-consuming personal commitment on the basis of the scientists. I imagine it is just this kind of personal commitment that the government would like to see evoked across the workplace. Can you do what you can to ensure that the funding basis described in the upcoming five year plan for NSERC is maintained.

I do recognize that you have a busy schedule and apologize for troubling you. The matter is, however, of such importance that I have both ventured to use your time and also to turn briefly away from the central research affairs that involve me. I look forward to talking with you again in Fergus in the future.

Kind regards,

Yours sincerely,

J.D. Brooke, Ph.D.
Professor

JDB/vew

THE UNIVERSITY OF CALGARY
Health Sciences Centre
3330 Hospital Drive N. W., Calgary, Alberta, Canada T2N 4N1

Faculty of MEDICINE
Telephone (403) 284-6541

1985-03-05

The Honorable Dr. Thomas Siddon, M.P.
Minister of State for Science and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Dr. Siddon:

I would like to take this opportunity of saying how much I appreciated your enthusiastic and positive comments concerning research funding for the Natural Sciences and Engineering Research Council at its recent reception for members of the Grant Selection Committees. Your comments certainly set a positive tone for a week of very hard work from those 400 odd volunteers who make up the Grant Selection Committees this year. As Gordon McNabb has probably indicated to you, most of the Committees finished some time on Friday and one or two did not complete their efforts until Saturday even though they had worked on the average of 15-hour days.

Thanks very much for your support and commitment to funding to NSERC's budget this year.

Sincerely,

R. B. Church, Ph.D.
Associate Dean (Research)

RBC:smh

DALHOUSIE UNIVERSITY
HALIFAX, NOVA SCOTIA
CANADA B3H 4J1

DEPARTMENT OF BIOLOGY

March 1, 1985

Hon. T. Siddon
Minister of State for Science & Technology
House of Commons
Wellington Street
Ottawa, Ontario
K1A 0A6

Office of the Minister of State — Cabinet du Ministre d'État

07 III 1985

Science and Technology — Sciences et Technologie

Dear Mr. Siddon:

This is a letter to express my concern that the NSERC 5-year plan should be adopted without any financial cut backs. It is particularly important that basic research be supported so that it can be applied for the newer high technologies. A recent example in my own field of Marine Aquaculture relates to the recent formation of the Atlantic Institute of Biotechnology (AIB). This institute will be conducting industrially-oriented projects for clients from private industry and is of particular significance for the establishment of the new aquaculture industries in the Maritimes.

Whilst the Institute has financial support under the Industrial and Regional Development Program (IRDP), it is important to realize that this support will only be used for the salaries of a few full-time scientists. The majority of research will be conducted by Professors and Research Associates funded under NSERC programs in cooperation with AIB. Thus, it is essential that the level of research conducted under NSERC programmes, be maintained so that it may be directed to the "new technologies."

Yours sincerely,

C.J. Corkett
Research Associate

CJS/nk
cc. S. McInnes, M.P.

Carleton University
Ottawa, Canada K1S 5B6

February 19, 1985

Office of the Minister of State / Cabinet du Ministre d'Etat

26 II 1985

Science and Technology / Sciences et Technologie

The Honourable Thomas E. Siddon,
Minister of State for Science and Technology,
House of Commons,
Parliament Buildings, Wellington Street,
Ottawa, Ontario K1A 0A6

Dear ~~Sir:~~ T. Siddon

In a remarkably short time the Natural Sciences and Engineering Research Council has become established as a major factor in promoting the strength of both university and industrial research in Canada. This strong performance has resulted from two factors: one is the farsighted planning and excellent leadership given to NSERC by Dr. Gordon MacNabb; the second, as indicated by your presentation to the Miscellaneous Estimates Committee on 4 December 1984, was the approval by the Conservative government of 1979 of Dr. MacNabb's Five Year Plan. The presentation also states that "even the most modest funding scenerio presented by the Five Year Plan in 1979 has failed to materialize during the intervening period. While the Council had achieved a great deal with the increments that have been forthcoming, its efforts have been hindered ... by a very fragmented and uncertain approach to the overall funding needs".

Both academic and industrial researchers across Canada could give you dozens of examples of the strong support and direction which NSERC has given to research and development in Canada. In the Ottawa region, I might mention as an example the excellent backing which industry and the educational institutions have received in the establishment of the Ottawa Carleton Research Institute.

A well directed R & D program is a vital investment in the future of Canada. I urge you to continue to support the outstanding work of the Natural Sciences and Engineering Research Council.

Yours sincerely,

J. J. Riordon

A

J. S. Riordon,
Dean of Engineering.

Office of the Dean □ Faculty of Engineering □ Room 360
C.J. Mackenzie Building □ (613) 231-2616

artment of
ogy

Mount Saint Vincent University

166 Bedford Highway 902 443 4450
Halifax
Nova Scotia
Canada
B3M 2J6

Office of the Minister of State

Cabinet du Ministre d'Etat

26 II 1985

Science and Technology

Sciences et Technologie

February 18, 1985

The Hon. T. Siddon
Minister of State for Science
and Technology
House of Commons
Ottawa, Ontario
K1A 06A

Dear Dr. Siddon:

I am writing to indicate my strong support for the NSERC 5 year plan.

It seems to me essential that we support training of people for biotechnology and newer high technologies in order to keep Canada in the mainstream of industrial activity. "Hands on" experience is required to prepare Canadians for the opportunities of the future.

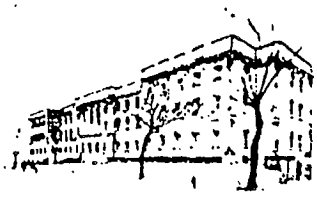
My university is primarily an undergraduate institution. Our basic and applied research activities are an important element in encouraging bright young Canadians to pursue careers in science.

Yours truly,

Lillian K. Wainwright
Professor and Chairperson

LKW/sv

c: Howard Crosby, M.P.



Sir James Dunn Science Building

DALHOUSIE UNIVERSITY
DEPARTMENT OF PHYSICS

Halifax, Nova Scotia, Canada. B3H 3J5
Departmental Telephone: (902) 424-2337
Telex: 01921863

February 18, 1985

The Honourable T. Siddon
Minister of State for Science and Technology
Government of Canada
Ottawa, Ontario.

Office of the Minister of State / Cabinet du Ministre d'Etat

12 III 1985

Science and Technology / Sciences et Technologie

Dear Dr. Siddon,

As an NSERC grant recipient, I urge you to make an early and positive decision regarding the next NSERC 5-year plan.

The NSERC operating grant to our group has enabled us to stay in the foreground of research into the magnetic properties of compounds and alloys, as well as in the techniques to measure extremely small biological signals. Because of our good contacts with industry and research institutes, it has been possible for us to transfer our acquired knowledge to other groups in Canada. As part of a university, we were able to use part of the grants to educate and train students in measuring techniques which utilize high tech. apparatus which, for the large part, was bought in Canada.

NSERC Operating Grants are, in my view, an extremely important part of the overall dynamics of the modern technological developments in Canada.

I hope that you are prepared to support and encourage NSERC's plan to increase research in this country to a level that approaches that of other industrialized countries.

Sincerely yours,

Dr. G. Stroink
Associate Professor of Physics
Dalhousie University

Adjunct Associate Professor
Technical University of Nova Scotia.

GS/ra

University of Toronto
DEPARTMENT OF ZOOLOGY

RAMSAY WRIGHT ZOOLOGICAL LABORATORIES
25 HARBORD ST.
TORONTO 5, ONTARIO, CANADA M5S 1A1

February 11, 1985

The Honourable Thomas E. Siddon
Minister of State for Science and Technology
c/o The House of Commons
Ottawa, Ontario
K1A 0A6

Office of the Minister of State / Cabinet du Ministre d'Etat
26 II 1985
Science and Technology / Sciences et Technologie

Dear Mr. Siddon,

It is vital that the Natural Sciences and Engineering Research Council receives adequate funding to carry out its mandate of supporting basic scientific research in Canada. The NSERC programme is a good one, designed to stimulate excellence in our scientists and technologists, working outside of government laboratories, in universities and industry. To a very large degree, our contribution to man's expanding knowledge of the universe around him, and the international reputation of Canadian science, depend on the success of NSERC granting programmes. I urge you to give this fine organization your full support.

Sincerely,

D.W. Dunham
Professor of Zoology

cc: The Right Honourable Mr. Brian Mulroney, Prime Minister of Canada
The Honourable Mr. Robert de Cotret, President of the Treasury Board
The Honourable Mr. Michael Wilson, Minister of Finance
Mr. David Berger, MP

DWD/rs

ORDRE DES INGÉNIEURS DU QUÉBEC

2020, rue University, 14e étage
Montréal (Québec) H3A 2A5
(514) 845-6141

BUREAU DU PRÉSIDENT

Le 8 février 1985

Office of the Minister of State / Cabinet du Ministre d'Etat

28 II 1985

Science and Technology / Sciences et Technologie

Monsieur Tom Siddon, P. Eng.
Ministre de la Science et de la Technologie
270, rue Albert
14e étage, bureau 1400
OTTAWA (Ontario) K1P 5G8

Monsieur le ministre,

L'Ordre des ingénieurs du Québec (OIQ) regroupe plus de 25 000 ingénieurs dont la très grande majorité sont diplômés des établissements universitaires canadiens en général et québécois en particulier.

La mission de l'Ordre est d'assurer la compétence des ingénieurs admis dans ses rangs et la qualité des services qu'ils offrent au public. Vous comprendrez alors que tout ce qui concourt à la formation de nos futurs membres nous intéresse au plus haut point.

Nos nombreux contacts avec les doyens des facultés de génie du Québec, au sein du Comité de liaison universités-OIQ, nous ont permis de comprendre et de partager leur inquiétude et leurs préoccupations face aux ressources réduites avec lesquelles ils doivent assurer non seulement la bonne marche de leur faculté mais aussi leur progrès.

L'un des facteurs les plus importants de ce progrès est la recherche universitaire. Dans un mémoire qu'il remettait, en octobre 84, à la Commission de l'éducation et de la main-d'oeuvre sur l'étude du financement des universités québécoises, l'Ordre insistait longuement sur le rôle de la recherche dans la formation universitaire. Permettez-nous de vous citer un bref extrait de ce mémoire.

"Est-il nécessaire d'insister sur l'importance de la recherche en milieu universitaire? Il existe une relation évidente entre un secteur de recherche dynamique, à l'avant-garde de la technologie, et le réinvestissement des connaissances acquises dans l'enseignement aux étudiants. L'enseignement sera d'autant plus à point que la recherche occupera une place importante dans la vie de la faculté de génie."

... /2

Nous savons que les différentes subventions de recherche accordées par le Conseil de recherche en sciences naturelles et en génie du Canada (GRSNG) représente près de 40% des fonds de recherche et développement externes des universités. Pour les universités, ces fonds sont essentiels afin qu'elles puissent poursuivre leurs programmes de recherche de base et de formation de personnel qualifié.

Ces fonds sont également essentiels pour les programmes d'infrastructure de la recherche, de recherche et développements coopératifs (universités-industries) et d'acquisitions d'équipements scientifiques dont les universités ont un besoin immense en cette époque de développements technologiques accélérés.

Dans le mémoire précité, l'Ordre insiste aussi longuement sur les relations suivies que doivent entretenir les universités et les industries canadiennes. Cette collaboration industries-universités nous apparaît comme le meilleur moyen de "rentabiliser" en quelque sorte la recherche universitaire et d'en faire profiter les industries canadiennes qui doivent demeurer concurentielles dans un marché en expansion, ouvert maintenant sur le monde entier.

Nous savons que les décisions en ce qui regarde le financement du CRSNG tant pour l'année 1984-85 que pour le nouveau plan quinquennal sous étude, se prendront bientôt. Nous croyons que le gouvernement fédéral devrait faire connaître ses intentions quant au financement du CRSNG, en particulier pour ses programmes thématiques et ses programmes coopératifs industries-universités, en acceptant d'emblée le second plan quinquennal du CRSNG.

Reprenant en cela notre mémoire, nous sommes convaincus que si notre pays doit rester dans la course au développement technologique, il le fera en consacrant des efforts considérables, pécuniaires particulièrement, à la recherche universitaire, à la formation d'ingénieurs hautement compétents et capables d'assumer ce développement technologique.

Nous avons envoyé pareille lettre à vos collègues du cabinet Messieurs Wilson et de Cotret pour les sensibiliser à ce problème et leur faire part de nos préoccupations comme ordre professionnel.

Nous vous prions d'agréer, monsieur le ministre, l'expression de nos sentiments les plus cordiaux.

Le président,

R. Rémi Arsenault, ing. M.B.A.

Scarborough College
University of Toronto

Division of Life Sciences

West Hill, Ontario
M1C 1A4

7 February 1985

Office of the Minister of State / Cabinet du Ministre d'État

Honourable Thomas E. Siddon
Minister of State for Science and Technology
c/o The House of Commons
Ottawa, K1A 0A6

18 II 1985

Science and Technology / Sciences et Technologie

Dear Honourable Mr. Siddon:

I am writing in response to the submission by the Natural Sciences and Engineering Research Council (NSERC) of Canada to you for its second five-year plan. NSERC funding for university research is vital for the health and progress of our nation. When the Conservative government was in power under the Honourable Joe Clarke, an ambitious and progressive plan was undertaken to raise spending on R & D to 1.5% of GNP. This was an attempt to approach other advanced countries such as Japan and the U.S. in their level of spending on R & D and to allow us to be leaders in basic and applied research.

The Universities have responded well to this positive initiative both with increased productivity and with increased manpower in critical areas. Your government has promised that R & D will be increased to 2.5% of GNP. This should result in increased funding for research at universities and I am confident that they will respond effectively to this stimulus. University research programs require steady, rather than erratic funding. If we are to remain at the fore front of the scientific community, funding must be sufficient and continuous.

University research has a number of significant spinoffs which benefit Canada. First, the future of technology and industrial expansion depends heavily on basic and applied research carried out at universities. These discoveries are ultimately exploited by industry. Second, universities are crucial in increasing the supply of highly qualified manpower through the training obtained in advanced degrees in graduate school and this cannot but have significant positive effects on the economic development of the country. NSERC programs assist in this training by providing scholarships and fellowships to our brightest young people. NSERC essentially provides the opportunity to develop the mental resources to meet the needs of an increasingly complex world. In addition, NSERC research grants to our best scientists serve to provide training in advanced techniques of individuals employed under those grants. Universities are the principal sources of our expertise in 'discovery' science and for much of the applied sciences as well and NSERC is a major source of funds for this.

My own area of expertise is in the factors which are responsible for the regulation of mammal and bird populations, and in particular how rodent populations are regulated. In 1983-84, because of an NSERC travel grant, I was able to go to Australia and collaborate with Australian scientists who were studying the causes of house mouse plagues and the possible control of this species. In the 1979-80 plague, the house mouse was conservatively estimated to have caused $50,000,000 damage to agriculture areas. While I was there, the house mice again reached plague proportions in certain areas. I examined hormonal mechanisms of reproductive control, while others examined the role of odour. While we did not discover the ultimate cure to this problem in so short a time and for so complex a problem, the ground work was laid and the objective is clear. In Canada, I have applied some of these techniques to the study of our own rodent problems. The ultimate objective is to understand why rodent populations increase in order to assist in their management to stimulate our agricultural industry, our forestry industry (rodents are major factors depressing seedling survival and directly consuming tree seeds, preventing regeneration), and our native fur industry (muskrat populations at times collapse for reasons that are not clearly understood).

Government funding to NSERC and thus to university supported research is crucial if we are to meet and solve Canadian problems. I believe that a Conservative government must be dedicated to excellence in basic research if we are to bring Canada into the 21st Century as an advanced nation.

Sincerely yours,

Dr. Rudy Boonstra,
Associate Professor of Zoology

CC: The Honourable Bob Hicks
The Honourable Flora MacDonald
The Honourable Sinclair Stevens
The Honourable Michael Wilson

Registered

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X9

Department of Biochemistry

Telex: 016-4101
Tel.: (709) 737-8530

FEB 12 1985
FEV

February 6, 1985

(9)

The Rt. Honorable James A. McGrath
MP St. John's East
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Mr. McGrath:

Re: Research funding by NSERC and MRC

It is generally acknowledged that the future of Canada's industrial and economic growth, and of its educational and health care delivery systems depends largely upon the "Research and Development" (R & D) efforts of the scientific community. Recent concerns have been expressed by Dr. Gordon McNabb and Dr. Pierre Bois, Presidents of the NSERC and MRC respectively, regarding the future budgetary status of these two most important Federal granting agencies for "R & D". This concern has been echoed all across the country, especially for the young and upcoming group within the research community who may be hit hard in case of a cut back.

The success in Research and Development is often a story of hard work by a small dedicated group of entrepreneurs. For example, right here in St. John's a small but vigorous group of scientists in the Department of Biochemistry at Memorial, have made great strides in Biomedical, and Food and Nutrition-related research in the last 10 years. This is a success story of 17 faculty members, who have worked relentlessly and imaginatively to expand their research horizons withstanding fierce competition to obtain research grant support from the Federal Government and other national agencies. Starting from a research support budget of about $250,000 dollars, 7 to 8 years ago, the Department now receives over 1.287 million dollars a year in Operating grants for Research. In the last 5 years, it has also received, through similar national competition, equipment grants worth $713,045 for research purposes. All this has resulted in 8 new contractual academic jobs (Post-doctoral fellows, Assistant Professors Research, worth $131,790), 22 jobs of research assistants and technicians (worth $387,649) and 38 job support for graduate and undergraduate students (worth $134,852). It is estimated that it takes about 10 years to train a research personnel with all the modern developments in a particular area of research. With this research grant support, the Department has built a sophisticated infrastructure capable of advanced state of the art technology, and a battery of research personnel who can handle this technology to advance our knowledge and discover the secrets of nature. The documentation

. . . 2

for the above are all enclosed herewith. The title of research grants listed show our involvement in various facets of Biochemistry with the following broad categories: Nutritional and Metabolic Biochemistry (related to health care research in nutrition of the infant, the elderly and the obese); Macromolecular, Membrane, Protein and Glycoprotein Biochemistry (related to protein, lipid and enzyme technology); Toxicological Biochemistry (related to carcinogens, asbestos, oil spill hazards); Biochemistry of genetic evolution and recombinant DNA technology (related to genetic engineering, hydrocarbon degradation technology); Food Processing and post harvest physiology of fish and marine produce (related to enzymes from fish waste to produce cheese and other food products, use of peat for fermentation, heat-resistant bacteria in milk). All this research represents a prudent blend of basic and applied research which is in the heart of all enthusiasts of "R & D".

However, this is a young group vulnerable to the winds of change in Ottawa. If the NSERC and MRC do not receive their expected level of budget in the coming years, dreams of the group who built this unique research base at St. John's could be seriously hurt. Also the jobs of 68 trained academics, research personnel and students will be in jeopardy.

It is probably our fault that we did not contact you before to tell our story. But I wish to invite you, at your convenience, to visit the Department to know first hand of our work and of our concerns.

We are fortunate to have on our Faculty, Dr. Margaret Brosnan, who has been elected this year as President of Canadian Federation of Biological Societies (CFBS) the principal representative group of Biomedical Scientific researchers in Canada with about 3000 scientists as members. In such proposed meeting Dr. Brosnan and other members of the Faculty, some on various national committees, will surely apprise you of our concerns from a national perspective.

Please let us know when you can visit us at your convenience.

Yours sincerely,

S.S. Mookerjea
Professor & Head

Enclosure - Appendices I-IV
cc: President, MUN
Vice-Presidents, MUN
Deans, MUN
University Relations/Press Release
Heads of Science Departments, MUN
Biochemistry Department Faculty
P.S. A similar letter has been sent to Rt. Honorable Mr. J.C. Crosbie

THE UNIVERSITY OF BRITISH COLUMBIA
6270 University Boulevard
VANCOUVER, B.C., CANADA
V6T 2A9

DEPARTMENT OF ZOOLOGY

January 31, 1985

The Honourable Tom Siddon
Minister for State for Science
and Technology
Parliament Buildings
Ottawa, Canada

Dear Mr. Siddon,

I understand that outside comments concerning NSERC (Natural Science and Engineering Research Council) would be welcome. I feel strongly that I would like to write in support of the Council's work and policies. I should add I carry out research with their support, but I have no special rank within the organisation.

The reason I wish to support NSERC is that I have been in the unusual position of being able to compare their work directly with similar organisations in the United States. I am Professor of Zoology in the University of British Columbia, but I am regularly invited to work on problems concerning Hyaline Membrane Disease in the University of Florida, in the States. I am not paid or granted by that organisation, but research as a guest. I must say immediately that I greatly appreciate the kindness and hospitality I receive. However, I cannot help comparing the systems operating there with those in Canada, and I feel that Canada has made all the right decisions. Firstly, the general decision to limit grant money to research itself has avoided the siphoning - even pillaging - of 50% of the grant money as "overheads", which happens throughout the U.S.A. The use of grants as a source of university income is a way of life in the States. Secondly, NSERC itself has carried out policies which genuinely aid research, without the constant administrative intrusion I see in the University of Florida. In the United States the rules and regulations which govern the smallest items waste money by requiring a heavy and large bureaucracy. The purchase of a needed calculator, worth a few hundred dollars, needed a phone call to Washington, because the available money was listed for another purpose. The rigidity of following the granted programs prevents the following up of new and exciting observations. Banting and Best would have had great bureaucratic difficulty in discovering insulin, unless the idea had been submitted in full, some years before! In addition, the policy of NSERC to fund widely, if a little less richly, maximises the potential of all workers, including those starting on their careers. In the United States, the high funding of a few individuals leads to the build-up of small, feuding and often vicious groups. The many people who remain unfunded, often because of unfair peer review due to outside rivalries, or because their ideas follow new, sometimes heretical paths, remain wasted. In addition, the university and the students suffer, because such people feel rejected, and lose their energy for teaching. The policies of NSERC have avoided all these pit-falls.

.../2

In conclusion, I would like to commend both Canada and NSERC for achieving administration without bureaucracy, support without rigid direction, and encouragement of talent without the production of small and grasping cliques. I trust these productive policies will continue to allow Canada to achieve its remarkable standards.

May I thank you for your attention,

Yours sincerely,

A. Manning Perks

Dr. Anthony Manning Perks

Professor of Zoology
University of British Columbia

Honorary Faculty Research Scholar
College of Medicine, University
of Florida

AMP/vj

cc: Dr. Peter Larkin
Associate Vice-President, Research

Operating grant # 35288 (84-85) (2)

DALHOUSIE UNIVERSITY
HALIFAX, NOVA SCOTIA
CANADA B3H 4J1

DEPARTMENT OF BIOLOGY

January 28, 1985

Hon. Tom Siddon
Minister of State for Science & Technology
Room 119, East Block
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Sir:

Attached is a copy of a letter which was recently posted in my department. As you can see, the letter contains distressing news for those struggling to do scientific research within the Canadian university community. Already basic research is underfunded and facilities are generally poor in the universities. This of course, has serious consequences for the careers of Canadian scientists and for their ability to contribute, through their research, to progress in Canada. Such a situation is not only demoralizing to the individuals involved, but represents a waste of human resources which cannot be afforded as Canada tries to compete with other countries in science and technology.

It is time that you as Minister of State for Science and Technology, begin immediately to improve the situation by ensuring that NSERC receives the funds necessary to support, and even improve, its programs. I await your letter describing the action you intend to take regarding this important matter.

Yours truly,

Thomas MacRae, Ph.D.

TMacR/bac
Enclosure

UNIVERSITY OF GUELPH
ONTARIO AGRICULTURAL COLLEGE
Department of Environmental Biology

GUELPH, ONTARIO, CANADA N1G 2W1
Telephone (519) 824-4120

Return
Copy to
Canada

January 14, 1985.

The Honourable Thomas Siddon, M.P.,
Minister of State for Science and
Technology,
House of Commons,
Ottawa, Ontario.
K1A 0A6

Dear Mr. Siddon;

Re: Second five year plan of NSERC

As the Chairperson of one of the largest departments of primarily applied biology in the country, I would like to emphasize the fundamental importance of healthy and vigorous basic science in this country. The sophisticated technological, medical and agricultural advances which are easily recognized and appreciated simply are not possible without the initial, sometimes apparently unrelated, work in basic science. Additionally, the funds to basic scientists which come primarily through NSERC should be steady to those projects deemed worthy of support. It takes several years to build up a productive research program; pulsatile funding results in stopping and starting of work which results in inefficient management of resources.

In closing I would like to point out that NSERC programs have been in part responsible for the supply of highly qualified manpower in areas critical to the future economic development of the country. Ultimately a country's economy rests on its human resources. NSERC through its various basic and more applied programs helps to produce the individuals who make the scientific and technological, and ultimately the business, wheels of Canada turn.

Thank you for considering these points.

Sincerely yours,

Susan McIver,
Professor and Chairperson.

Office of the Minister of State — Cabinet du Ministre d'État

23 I 1985

Science and Technology — Science et Technologie

cc: The Hon. Sinclair Stevens, Minister of Regional Industrial Expansion.
The Hon. Flora MacDonald, Minister of Employment and Immigration.
The Hon. Michael Wilson, M.P., Minister of Finance.
Dr. Wm. Winegard, M.P., Guelph & Wellington South.
Mr. David Berger, M.P., Montreal.

University of Toronto
DEPARTMENT OF ZOOLOGY

RAMSAY WRIGHT ZOOLOGICAL LABORATORIES
1 HARBORD ST.
ORONTO 5, ONTARIO, CANADA

Jan. 7, 1985

Thomas E. Sinder, M.P.
Minister, Science & Technology
The House of Commons
Ottawa

Dear Sir

A nations contributions to world science is something everyone can be proud of. Canada has made significant contributions, as it should — must — continue to in the future. Much of our success has been through the NRC-(USERC funding) progams whereby the creativity of the individual scientist has been fostered.

I am sure you are aware of the value and importance of continuing support to Canadian Science — traditionally Basic Science.

Remember, the brash act of financial cut-back will strangle growth that has taken decades — and would take even longer to resurrect.

The NSERC research funding programs are essential for the continuing growth of Canada.

Yours truly

K. W. Wright

Professor and
Nematologist.

DEPARTMENT OF ZOOLOGY □ UNIVERSITY OF TORONTO

Office of the Associate Chairman

Toronto, Canada M5S 1A1

January 7, 1985

The Hon. Mr. Thomas E. Siddon
Minister of State for Science and Technology
The House of Commons
Ottawa, Ontario K1A 0A6

Office of the Minister of State
Cabinet du Ministre d'Etat
07 JAN 1985
Science and Technology
Sciences et Technologie

Dear Mr. Siddon,

I understand that you will shortly be considering a five year plan submitted by the Natural Sciences and Engineering Research Council of Canada (NSERC).

I am writing this letter to express my appreciation of funds I have received from NSERC. This being my tenth year as a professor and researcher at the University of Toronto, I am now enjoying my third 3-year operating grant. The funds have not been enormous - I am not a "big money" scientist. But thanks to NSERC funding, my graduate students and I have been able to do a great deal of research, most of which has focussed on the ecology of organisms living in streams and rivers. The rivers are those close to Toronto which are inevitably affected by such disturbances as agricultural drainages, gravel pits, housing developments, paved road run-off (including de-icing salt) and sewage. Our work has resulted in some 20 papers published in reputable scientific journals. I think you may safely conclude that the research is considered by knowledgeable people to be worthwhile.

The NSERC funding system is both cautious yet rewarding. Applications from university professors are assessed by a panel of peers who are experts in the field (in my case: population ecology). Those of us who are applying for a renewal of our 3-year operating grants know that we have to show proof of performance in the form of research reported in highly esteemed journals or Proceedings. We have to present clear and concise reasons why our new proposals should be funded. We are always very much aware of the competition for government funds. We also know that if we have performed as truly reputable scientists should, then we will be funded again. Maybe we will not get what we ask for - there are limits to the government purse and some of our projects will rank lower than those proposed by others. However, there is still the sense that worthwhile research will be able to continue and therefore we can plan on the long term for at least some aspects of our research, as long as we are continually striving for significant results.

The process of funding by NSERC - relatively small amounts but with a good chance of continuity - means that we can adjust the focus of the research if the results suggest a new line. We can also afford to put some emphasis on basic research if this kind of work is going to benefit science in the long

/...2

term. I want you to know that this is one of the privileges I most respect as a Canadian scientist. Many of my colleagues in other countries are funded only for specific and rigorously applied projects. This approach to science tends to turn all involved into mere technicians; they are blind to the larger scientific discoveries that the work might reveal. I deeply appreciate the way NSERC operates, in allowing me as a scientist to work on a broad front that includes basic as well as applied perspectives.

My own work has been based on the observation that it is unrealistic to hope that all streams and rivers can remain in their pristine condition. Rivers in densely populated drainage basins, or in areas affected by forestry or mining or acid precipitation, will inevitably respond to the inputs or changes caused by land use in the surrounding area. I have focussed on particular resistant species of insects in running water that the layman might dismiss as too esoteric. In fact I have found that these insects can reveal the quality of the water more simply than sophisticated chemical tests. At the same time I have gained knowledge of the ways in which the insects cope with their polluted environment, and this in turn has allowed me to draw general conclusions about stress-surviving strategies in disturbed habitats. Because this kind of work requires much manual labour (to sample streams and rivers and to sort and identify the revealing species) I have used my NSERC funds mainly to fund part-time assistants. Several of these have gone on to graduate school or careers where they have become qualified as fisheries biologists, stream hydrologists, environmental consultants, museum taxonomists (qualified to differentiate good bugs and bad ones!) and also professional research specialists and professors. I think I may therefore take some credit for using my NSERC funds to train people who can assess the effects of industry and both urban and agricultural development on the environment. This kind of assessment is obviously necessary as the population of Canada increases its numbers and its demands. The future of Canadian industrial expansion depends on the materials it uses and the waste materials it generates, directly or indirectly. My research on our inland waters is showing that many natural systems are surprisingly resilient; they can tolerate a high degree of disturbance without suffering complete disruption. However, we still need to do more experimental work before we can thoroughly explain these observations and predict the critical distinctions between disturbance and disruption.

Recent funding by NSERC has resulted in an exciting atmosphere in my laboratory and has allowed me to expand the scope of our research. We are all extremely grateful.

I urge you to be far sighted when you evaluate the NSERC 5-year plan.

Yours sincerely,

Rosemary Mackay

Dr. Rosemary J. Mackay
Associate Professor
Associate Chairman of Zoology
Freshwater ecologist

RJM/rs

UNIVERSITY OF GUELPH
COLLEGE OF BIOLOGICAL SCIENCE
School of Human Biology

GUELPH, ONTARIO, CANADA · N1G 2W1
Telephone (519) 824-4120

Rerum
Cognoscere
Causas

3rd January 1985.

5014 C19

Prime Minister Brian Mulroney,
House of Commons,
Ottawa, Ontario.

Dear Prime Minister Mulroney:

I write to you on behalf of the Canadian Association of Anatomists, to urge you and your colleagues in Government to demonstrate your full support for science, and in particular, your support for basic scientific research in Canada. Specifically we petition you, along with other members of the scientific community, to show this support by approving increased funding for the National Science and Engineering Research Council and the Medical Research Council.

With thanks in anticipation for your support,

Yours sincerely,

SRB/ms

Stan R. Blecher, MD, FCCMG
Professor and Director,
School of Human Biology.
Chairman, Science Policy Committee
of the Canadian Association of
Anatomists.

cc: Ministers:
T. Siddon (Science & Technology)
J. Epp (Health & Welfare)
F. MacDonald (Employment & Immigration)
J. Fraser (Fisheries & Oceans)
S. Stevens (Regional Industrial Expansion)
J. Wise (Agriculture)
P. Carney (Energy, Mines & Resources)
G. Merrithew (Forestry)

Dr. G. M. MacNabb, President, NSERC
Dr. P. Bois, President, MRC
Dr. Stanley Wainwright, Vice-President for Science Policy, CFBS
Dr. D. G. Osmond, President, CAA
Dr. M. H. L. Gibson, Secretary-Treasurer, CAA
Dr. Margaret Brosnan, President, CFBS

ORIGINAL TO
ORIGINAL ENVOYE A
C.C. PMO FILE
C.C. DOSSIERS CPM

University of Toronto

Erindale Campus
Mississauga, Ontario
Canada L5L 1C6

Biology
(416) 828-5361

December 20, 1984

Cabinet du
Office of the
Minister of State

87 I 1:05

Science and
Technology

Sciences et
Technologie

Hon. T. Siddon, M.P.,
Minister of State for Science
and Technology,
House of Commons.

Dear Mr. Siddon:

I wish to express my support for a continued strong commitment by the government to the funding of basic scientific research in Canada. Quite aside from the invaluable direct contribution such investigation makes to the social and technical fabric of the country, there is the important indirect effect that only trained individuals have the capability to understand and apply technical advances made by other nations of the world.

My own research interests are in freshwater ecology. The research I do along with my graduate students is very directly related to the management of aquatic resources in Canada, clearly one of the primary natural assets of our country. I employ six graduate students, a senior Research Associate, a full-time technician, and a number of part-time undergraduate assistants. Thus we are not only contributing basic scientific information and advances, but also serve as a major employer. When one thinks of the large number of such laboratories in universities throughout the country, the importance of a strong, permanent funding commitment is obvious.

I sincerely hope that your caucus will continue strong financial support of fundamental research.

Yours truly,

W.G. Sprules
Professor of Zoology

DEPARTMENT OF ZOOLOGY □ UNIVERSITY OF TORONTO

Professor D.F. Mettrick. BSc: PhD. DSc: FRSA: FRS(C). Toronto. Canada M5S 1A1

December 18, 1984.

The Honourable T. Siddon, M.P.
Minister of State for Science and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Office of the Minister of State — Cabinet du Ministre d'Etat

07 1 1985

Science and Technology — Sciences et Technologie

Dear Minister,

First let me congratulate you on your appointment as Minister of State for Science and Technology, and to wish you every success in your portfolio.

As a senior biologist in Canada I have had the opportunity to become familiar with the National Research Council, the Natural Sciences and Engineering Research Council, the Medical Research Council, and other organizations involved in biomedical research funding.

I would like, in particular, to comment on the operations under the control of the NSERC. The first five-year plan of the NSERC has been very successful, with important new programmes being initiated. We applauded the decision of the previous Conservative government to increase Research and Development spending, and note the more recent promise to increase funding even higher towards a goal of 2.5% of the GNP.

With a total budget for 1984-85 of $281 million, NSERC supported 6,464 research grants, 4,296 manpower awards, $45.8 million was spent on equipment and infrastructure grants, as well as PRAI grants, and an additional 555 research fellowships and scholarships were awarded. This resulted in 11,315 individuals being assisted, in one way or another, with their studies in science and technology.

In terms of individual grants, those awarded by NSERC are, on the average, only half the size of those awarded by the MRC. NSERC funds worthwhile research programmes; MRC funds specific projects. The importance of steady funding by NSERC cannot be overstressed; drastic cuts in funding or significant new funds cause considerable difficulty for NSERC and for the investigators concerned. Steady funding should continue to be available to those research programmes that are worthy of support.

Obviously there is a relationship between funding for research programmes and for manpower training. Both are vitally important to the continued success of new developments at the level of basic and applied research that enhance the contributions made by Canadian scientists to the nation's science and technology.

Yours sincerely,

David F. Mettrick.

DFM/mp

Ramsay Wright Zoological Laboratories, 25 Harbord Street, Toronto (416) 978-3588

University of Toronto
DEPARTMENT OF ZOOLOGY

Y WRIGHT ZOOLOGICAL LABORATORIES
..ABORD ST.
ONTO X, ONTARIO, CANADA M5S 1A1

December 18, 1984

The Hon. Mr. Thomas Siddon, MP
Minister of State for Science and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Office of the Minister of State — Cabinet du Ministre d'État

07 1 1985

Science and Technology — Sciences et Technologie

Dear Sir,

As a concerned professor at the University of Toronto for the past 23 years, whose research activities have been supported throughout that time by grants from the National Research Council and then by NSERC, I wish to impress on you the importance of continuing, and indeed expanding financial support of research in "pure" science in this country.

The universities are the principal source of expertise in pure or "discovery" science and NSERC is its main course of funding. I urge you not to underestimate the importance and value to the future well-being and prosperity of Canada, of the kind of research I and my university colleagues engage in.

There is a well established direct relationship between the output of pure or "discovery" science and progress in the applied or goal orientated sciences. "Discovery" science provides the base of knowledge from which new solutions emerge, and provides the experience and training for young people to develop an imaginative, flexible and broadly based approach to problem solving.

You may think my own research on the ways in which insects regulate the water contents of their bodies is pretty esoteric. It is in fact directly related to the immensely important need to control of insects in horticulture and agriculture because the methods employed in control, frequently involve upsetting the insect's capacity to maintain a viable level water in the body. The bright young people who emerge from my laboratory broadly experienced in the skill of problem solving, have much to offer our technological society.

NSERC programs have been in part responsible for the increasing supply of highly qualified manpower in areas critical to the future of the development of the country. This has occurred not only through the provision of scholarships and fellowships but in addition through the technical training of individuals employed in our laboratories under the research grants themselves. Indeed the future of Canadian industrial expansion will be heavily dependent on the universities to provide both the basic and applied research which will ultimately be exploited by new industries.

/...2

Finally, concerning the quality of research supported provided by NSERC. I have participated in appraising research grant applications for the National Science Foundation of the United States for many years and have many close associations with British and American scientists. Both the participation in the funding of pure science of another country and the opinions of my foreign colleagues have convinced me of the superiority of the system we have in Canada. The present peer review system which is both fair, flexible and able to respond effectively to real need and real creativity has evolved through the sensitive interaction of representatives of government and those who use it, the scientific community.

In addition, the importance of steady rather than fluctuating funding cannot be overstressed. The training of skilled and experienced technical assistants and the attraction of gifted students to participate in university research programs cannot take place in a climate of fiscal uncertainty.

Yours sincerely,

J. Machin, Ph.D., D.Sc.
Professor of Zoology

cc: The Hon. Mr. Brian Mulroney, Prime Minister of Canada
The Hon. Mr. Robert de Cotret, President of the Treasury Board
The Hon. Mr. Michael Wilson, Minister of Finance

JM/rs

UNIVERSITY of TORONTO RAMSAY WRIGHT ZOOLOGICAL LABORATORIES
Department of Zoology 25 HARBORD STREET TORONTO M5S 1A1, ONTARIO, CANADA

December 17, 1984

Office of the Minister of State
Cabinet du Ministre d'État

The Honorable Mr. Thomas Siddon,
House of Commons,
Ottawa, Ontario.

20 XII 1984

Science and Technology
Sciences et Technologie

Dear Mr. Siddon;

As a professor of Zoology at the University of Toronto, I was encouraged by the plan of the previous Conservative Government to increase spending on Research and Development to 1.5% of the GNP, and even more encouraged when the present Conservative Government indicated that it planned to increase this funding to 2.5%. There is no question in my mind that investment in R&D is the most profitable thing that any country can do. One only has to look at Japan and West Germany to see what sort of a payoff there is in the long run for strong Government support of R&D, coupled with a good educational system and a well integrated industrial policy. I believe that all of these elements are interrelated and essential for the well being of Canada in the future.

I realize that at the present time your Government is primarily striving to bring our enormous debt under control and I heartily support this goal. I hope, however, that you do not lose sight of the importance of steady support for R&D. This area of human endeavour is particularly sensitive to fluctuations in funding. To prepare for a career in science or engineering requires long-term commitment. If a country has a history of continuous strong support for worthy R&D projects, its brightest young people are encouraged to commit themselves to careers in these areas. If support for R&D is variable and at times falls to low levels compared to that of other countries, it is much harder for these talented people to make the necessary lifetime commitment.

I, and most of my colleagues, get our major research support from the Natural Sciences and Engineering Research Council of Canada (NSERC). Over the years, this support has allowed me to train students, both graduate and undergraduate, in various aspects of research biology and to help many of them to decide that they could have a successful and rewarding career if they devoted themselves to basic science. These students are very special people who should be cherished by our Government and given assurance that their careers will not be interrupted by fluctuations in the support for basic research. If one studies the payoff for support for "pure" or "discovery" research on a historical basis, it has proven to be the best investment that

any Government can make for the future.

There has always been a direct relationship between pure science and applied science and increases in funding for pure science have always paid off in the areas of applied science and industrial technology. The "Green Revolution" in agriculture, our recent advances in genetic engineering, and all of the peaceful applications of nuclear technology in industry and medicine in the post-war era are the result of work begun decades earlier by scientists dedicated to basic research. Universities have been the principal places where pure science has been practiced and have been the major source of supply of the type of highly trained people necessary to support the science base essential for the future economic development of Canada.

Keep up the good work, and press on with your determination to increase your support for R&D and NSERC. Give our scientists an atmosphere in which they can flourish and future generations of Canadians will bless you for it.

Yours sincerely,

W. G. Friend
Professor, Zoology.

cc: The Honorable Brian Mulroney
The Honorable Michael Wilson
The Honorable Flora MacDonald
The Honorable Sinclair Stevens

YORK UNIVERSITY

FACULTY OF SCIENCE

4700 KEELE ST., DOWNSVIEW, TORONTO, CANADA M3J 1P3

DEPARTMENT OF PHYSICS

December 17, 1984

Tom Siddon, MP
Minister of State for
Science and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Mr. Siddon,

I was pleased to see that at long last Canada has a full time Minister for Science and Technology in the person of yourself. I was also gratified to hear of your party's commitment to increased support for research and development. My purpose in writing to you is to express my hope that your government will not overlook support for basic research at the university level and that increased funding will be given to the Natural Sciences and Engineering Research Council for this purpose.

I am sure you are aware that applied science cannot be carried out without a firm foundation in basic research. Research and development will soon founder without the ideas and methods of pure science to drive it. Thus continuing and increased support for NSERC is vital.

As you know, Canadian Universities have undergone a period of severe financial stringency. Without the support given by NSERC university research will largely dry up and we will lose the upcoming generation of new scientists which are needed to provide the manpower for increased technological activity in Canada. I stress once again how important it is that such funding be made available.

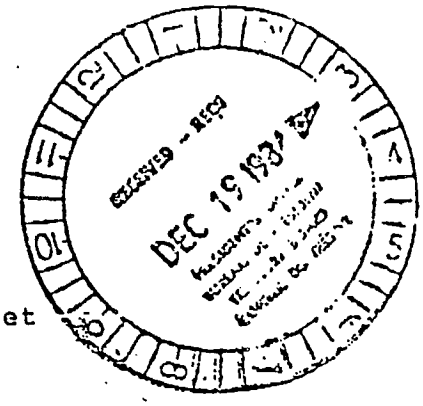
Yours sincerely,

A.D. Stauffer
Professor of Physics

ADS:vp

University of Toronto
DEPARTMENT OF ZOOLOGY

RAMSAY WRIGHT ZOOLOGICAL LABORATORIES
25 HARBORD ST.
TORONTO 5, ONTARIO, CANADA



December 11, 1984

The Honourable Mr. Robert de Cotret
President of the Treasury Board
c/o The House of Commons
OTTAWA, Ontario
K1A 0A6

Dear Mr. de Cotret,

As NSERC submits its second five year plan to the Minister of State for Science and Technology I am writing to convey to you my conviction of the vital importance of NSERC funding for creating a creative and productive environment in our research community. As a lecturer in a large introductory genetics course I am delighted by the interest and enthusiasm of the students in the expanding horizons of molecular genetics. It is crucial that the most highly motivated of them have access to a research laboratory in which new ideas and techniques are being developed and applied by dedicated students and supervisors. It is such an atmosphere which brings out their potential, a potential which must be developed if Canada is to compete in such areas as biotechnology. It is NSERC money which provides the essential infrastructure for a great deal of our contribution to science and technology. We cannot afford to diminish this fount of national creativity.

Yours sincerely,

Ellen W. Rapport
Associate Professor

EWR/ky

McGill University

Department of Biology
1205 Avenue Docteur Penfield
Montreal, PQ, Canada H3A 1B1

December 6, 1984

Office of the Minister of State / Cabinet du Ministre d'Etat

20 XII 1984

Science and Technology / Sciences et Technologie

Honourable Thomas Siddon
Minister of State for Science
and Technology
Ottawa, Ontario

Dear Sir:

A striking thing about Canadian governments is how little they have understood science and technology. To a great extent this is because most politicians are lawyers and businessmen.

Science is a community in which new ideas arise, are tested, and either fall or are sustained on the judgments of the practitioners. The decisions on the validity of the science are not determined by politics, law or by personal preference.

Up to now, Canada has had one of the most respected of scientific communities. I hope this continues. There is a danger, though, that a new Minister of Science will attempt to tell scientists what science they should do. It may, indeed, be worthwhile to direct considerable sums of money toward specific goals, but the cost intellectually, and for the training of scientists in general, may be very high.

We need a scientific community in Canada, not a limited scientific village. That larger approach must be maintained as a base from which and in which innovations will arise and be tested. Consequently cutting off the training of young scientists "at the knees" by attacking fundamental research in universities, effectively destroys the only training ground we have for scientists. There is no other! Be careful!

Yours truly,

R.E. Lemon
Professor

REL/ch

NADIAN SOCIETY
FOR
CELL BIOLOGY

Ma.arida O. Krause
rtment of Biology
ersity of New Brunswick
ericton, N.B. E3B 6E1

Alden H. Warner
rtment of Biology
iversity of Windsor
ndsor, Ontario, N9B 3P4

CS SC CB BC

SOCIETE CANADIENNE
DE
BIOLOGIE CELLULAIRE

December 4, 1984

The Hon. T. Siddon, M.P.
Minister of Science and Technology
House of Commons
Parliament Building
Ottawa, Ontario
K1A 0A6

Dear Sir:

As President of the Canadian Society for Cell Biology, I am writing concerning the funding situation of the Natural Sciences and Engineering Research Council. I have been informed that Dr. Gordon MacNabb, President of NSERC, has a new 5-year plan ready for submission, so it appears timely that we transfer to you our concerns viz-a-viz the funding of Science in Canada.

Having served on granting selection committees of NSERC for the past 6 years, I am well aware of the anguish we faced each year in trying to stretch an insufficient budget in order to fund the most worthy projects. In this struggle many worthwhile ventures and urgent requests are often underfunded or not funded at all.

The reasons for these underfunding problems can be summarized as follows:

1. The rate of inflation of most scientific supplies and equipment have greatly exceeded the general inflation rate which is normally allocated to the Council, even without taking into account the declining Canadian dollar and new import duties on chemicals. While some new Canadian Firms are attempting to manufacture scientific products that provide alternatives to importation, most highly specialized biochemicals and equipment are still being manufactured only in the U.S., leaving scientists no choice at all.

2. Prolonged under support of postsecondary education by provincial governments has resulted in the unavailability of indirect costs of research formerly provided by the Universities with the result that more funds must be used directly from research grants.

3. Decaying obsolescent equipment requiring costly repairs divert another sizable chunk of research funding. Replacements are even more difficult to come by.

...2

4. In order to keep salaries of technical assistants and research associates competitive with those offered in industry, Universities have had to impose new salary scales which further affect research grant budgets to the point that many assistants have to be let go.

Thus we condemn Canadian Scientists to become progressively less competitive in the world arena. In NSERC site visits to Canadian Universities I have been made personally aware of the crisis we face. We have many very talented scientsts which we condemn to scrounging for the next dollar. A healthy scientific community is essential to the technological and social progress of the Country, and NSERC is the agency which more strongly tries to provide for this.

I urge you to address this problem very seriously in considering Dr. MacNabb's proposal of his new five year plan.

Yours respectfully

M.O. Krause, Ph.D.
President, Canadian Society
for Cell Biology

MOK/pls

botany

UNIVERSITY OF TORONTO · DEPARTMENT OF BOTANY · TORONTO, ONT. M5S 1A1

Office of the Chairman: 416-978-3537

3 December, 19884

Dr. Thomas Siddon
Minister of State for Science and Technology
Department of Science and Technology
Jackson Building
122 Bank Street
Ottawa, Ontario K1A 1E7

Dear Dr. Siddon:

I am writing on behalf of the faculty in the Botany Department, University of Toronto, to support the need for increased funding for basic and applied research for the natural sciences through the Natural Sciences and Engineering Research Council (NSERC).

NSERC is the major source of funding for science departments such as ours. It has, over the years, funded the Department by providing basic operating grants, major and minor equipment and installation grants, student and post-doctoral scholarships and strategic grants. The research effort in this Department is largely dependent upon these programmes.

The present success of NSERC in providing these programmes is mainly due to President Gordon MacNabb and his staff. The science community, has the greatest respect for Mr. MacNabb who, we believe, is a very open, effective and intelligent administrator. We believe the policies and approaches that have developed under his leadership to be fair, and for the most part, serve the community well.

Despite the general lack of funding for research over the last 10 to 15 years our department believes that NSERC has performed extremely well. Our faculty, however, are concerned that NSERC's task may become impossible if it suffers further cut-backs. Many of the programmes developed by NSERC (for example, the University Research Fellowship Programme) are enlightened and innovative. This particular programme has resulted in junior, highly qualified individuals returning to Canada from studies abroad with optimism for the future and a feeling that there is a place for them in this country.

The programme is designed to provide a holding pool so that the shortages in the 1960's of qualified Canadians for staff replacements at Universities will not be repeated in the 1990's. It has done more than this; it has enabled departments to revitalise at a time of budget-cutting across the country. In our Department it has allowed us to develop a viable group, along with existing faculty, in plant biotechnology. We hope, in the future, that the programme will continue to allow us to develop in new areas, and provide us with much needed flexibility.

While we fully recognise the need for restraint and cost-cutting in the present economic climate, the scientific community must look to the future and perform the basic research on which the economy of the country will depend. Cutting basic research has long-term effects from which recovery is very slow and difficult.

Basic research is just as important as the more applied aspects. A recent survey of NSERC strategic grants (which support applied areas of research of interest to Canada) showed that the proposals were derived largely from ideas originating in basic research conducted under the operating grant system of NSERC. It can be clearly demonstrated that applied research is dependent on the generation of ideas from basic research. Over-emphasis on research and development at the industrial and production levels may have serious consequences in the long-term if not supported at the same time by funding at the basic level. In our Department basic research into agricultural problems in plant pathology, plant productivity, frost hardiness, bioengineering, etc. is developing possible answers to many agricultural problems. Only by understanding the problem can solutions be sought and realised.

Statements from members of the present government during the election campaign have given us cause for optimism regarding future funding. It is felt that the recent period of neglect for research may be over and that opportunities to fully pursue research in universities with adequate funding, equipment and facilities may now present themselves. My Department feels that the research community has taken more than its fair share of cuts. In addition, research funds have failed to keep up with the increase in the costs of scientific supplies and equipment, and the provincial government has at the same time reduced basic support to the universities. In many departments there is a desperate need for new equipment as technology advances. I detect, however, a new sense of optimism; the statements of support for research and development have been well received.

In summary, I would strongly urge not only continued support for NSERC but a fulfillment of the commitment made by the present government for increased funding. The scientific community needs and deserves better support. The potential in the university system is enormous but cannot be fully realised without significant increases in funding. The scientists in

universities are as good as anywhere else in the world, but they need the resources to fulfill their potential. In NSERC we have a governmental agency that is well respected, fair and responsive to the community; it demands high standards and responds with innovative ideas and strong leadership. The scientific community deserves better treatment than it has received in the past; we are optimistic that we will receive this from the new government.

Yours sincerely,

J. P. Williams,
Professor and Chairman of Botany
Vice-president Canadian Council
of Biology Chairmen

JPW/dj

c.c. G. MacNabb, President NSERC
R. L. Armstrong, Dean, Arts and Science (UofT)

University of Windsor

Chemistry Department

3 December 1984

Mr. Thomas Siddon,
Science & Technology,
House of Commons,
Ottawa, Ontario,
K1A 0A6.

Dear Mr. Siddon:

We understand that in about a month's time NSERC will be submitting its second five-year plan to the Minister of State for Science and Technology and through him to the Cabinet. The need to re-negotiate NSERC's budget comes at a time when scientific research in our universities is extremely hard-pressed since the financial situation of the universities has forced them to withdraw so much of the indirect support that at one time they were able to offer to the university researcher. This withdrawal of support, coupled with the lack of new appointments to the faculty, is destroying the vitality of the research enterprise.

The damage, we believe, will be greatest in the area of basic science, which relies heavily on NSERC "operating grants", since it is these funds that have had to bear the major burden of new costs, and have, moreover, accounted over the past years for an ever decreasing fraction of NSERC's budget.

We have noted that you called for a doubling of the national expenditure on R. & D. and for the "building up of Canada's science and technology capabilities from existing strengths". The point needs now to be made that our applied science can never be better than the quality of the basic science we have available.

We urge you to bring to the attention of your Colleagues, the vital necessity to the future of Canada of a fully-funded basic research program. Without it we can only become a second-rate country relying more and more on the expertise of others. Only through an increase in NSERC funds to Universities can the research be done or most importantly future scientist be trained. NSERC operating grants are our major source of support for chemistry graduate students. This is an aspect that is too easily overlooked. We must have the funds to not only do research but to develop young minds to carry forward ideas into the future.

Sincerely,

Bulent Mutus & Douglas W. Stephan
Graduate Admissions Officers
Department of Chemistry

401 Sunset Avenue, Windsor, Ontario, Canada N9B 3P4, 519/253-4232

University of Windsor

Chemistry Department

28 November 1984

Mr. Pat Carney,
Energy, Mines & Resources,
House of Commons,
Ottawa, Ontario,
K1A 0A6.

Dear Mr. Carney: Siddon

In about a month's time NSERC will be submitting its second five-year plan to the Minister of State for Science and Technology and through him to the Cabinet. The need to re-negotiate NSERC's budget comes at a time when scientific research in our universities is extremely hard-pressed since the financial situation of the universities has forced them to withdraw so much of the indirect support that at one time they were able to offer to the university researcher. This withdrawal of support, coupled with the lack of new appointments to the faculty, is destroying the vitality of the research enterprise.

The damage will be greatest in the area of basic science, which relies heavily on NSERC "operating grants", since it is these funds that have had to bear the major burden of new costs, and have, moreover, accounted over the past years for an ever decreasing fraction of NSERC's budget.

Spokesmen for the present government, notably Mr. Siddon himself (see for example the Globe & Mail, September 20th, 1984), have called for a doubling of the national expenditure on R. & D. and for the "building up of Canada's science and technology capabilities from existing strengths". The point needs now to be made that our applied science can never be better than the quality of the basic science we have available.

I urge you to bring to the attention of your Colleagues, the vital necessity to the future of Canada of a fully-funded basic research program. Without it we can only become a second-rate country relying more and more on the expertise of others. Only through an increase in NSERC funds to Universities can the research be done or most importantly future scientist be trained. NSERC operating grants are our major source of support for chemistry graduate students. This is an aspect that is too easily overlooked. We must have the funds to not only do research but to develop young minds to carry forward ideas into the future.

Sincerely,

Bruce R. McGarvey

Bruce R McGarvey
Professor and Chairman
Committee for Graduate Studies

DEPARTMENT OF BIOLOGY

Queen's University
Kingston, Canada
K7L 3N6

November 27, 1984

The Hon. Thomas Siddon,
Minister of Science & Technology,
Parliament Buildings,
Ottawa, Ontario
K1A 0A6

Dear Sir:

re: NSERC FUNDING

I am writing to express my concern about the funding of pure science research in Canada. As Canada moves towards the 21st century there is a strong move towards developing high technology and applied science industries. It is important to realize that our applied science will never be better than the pure science we have to apply. For this reason I ask you to fully support the Natural Sciences and Engineering Research Council's (NSERC) upcoming five-year plan. It is only through firm financial support that Canadian scientists will be able to function at their potential.

Yours truly,

D.H. Turpin
Asst. Professor

DHT/jb

ENTOMOLOGICAL SOCIETY OF CANADA

PUBLISHERS OF THE CANADIAN ENTOMOLOGIST

Department of Environmental Biology
University of Guelph
Guelph, Ontario, Canada N1G 2W1
(519) 824-4120, Ext. 3921

November 26, 1984.

Honourable Thomas E. Siddon,
MP,
Minister of State for Science and Technology,
House of Commons,
Ottawa, Ontario.
K1A 0C6

Dear Mr. Siddon:

Re: Five Year Plan for Natural Sciences
and Engineering Research Council

On behalf of the Entomological Society of Canada I wish to draw to your attention the critical state of funding for basic science in this country and the absolute necessity for maintaining a vigorous core of such endeavor. The financial situation of universities has forced them to withdraw considerable indirect support that once they were able to provide to the university researcher. This, coupled with a limited NSERC budget, has resulted in good quality projects either being cancelled or being seriously impeded. The basic tenant of the relationship between high technology, applied science and basic science is that the applied can never be better than the science we have available to apply. Vital, imaginative, productive research programs must be well funded in order to have high quality applied science and technology with their easily recognized economic benefits. In developing the next five year plan for NSERC I urge you to consider these points, especially with regard to substantially increasing the operating grants and the equipment funds, both of which constitute the literal life line of basic research.

Thank you for your serious consideration of this matter.

Sincerely yours,

Susan McIver

Susan McIver,
President.

University of Windsor

26 November 1984

Mr. Thomas Siddon,
Science & Technology,
House of Commons,
Ottawa, Ontario,
K1A 0A6.

Dear Mr. Siddon:

I understand that in about a month's time NSERC will be submitting its second five-year plan to the Minister of State for Science and Technology and through him to the Cabinet. The need to re-negotiate NSERC's budget comes at a time when scientific research in our universities is extremely hard-pressed since the financial situation of the universities has forced them to withdraw so much of the indirect support that at one time they were able to offer to the university researcher. This withdrawal of support, coupled with the lack of new appointments to the faculty, could before long rob the research enterprise of its vitality.

The damage, I believe, will be greatest in the area of basic science, which relies heavily on NSERC "operating grants", since it is these funds that have had to bear the major burden of new costs, and have, moreover, accounted over the past years for an ever decreasing fraction of NSERC's budget.

I was pleased to note that you have called for a doubling of the national expenditure on R. & D. and for the "building up of Canada's science and technology capabilities from existing strengths". The point needs now to be made that our applied science can never be better than the quality of the basic science we have available to apply.

I urge you to bring to the attention of your Colleagues, the vital necessity to the future of Canada of a fully-funded basic research program. Without it we can only become a second-rate country relying more and more on the expertise of others. Only through an increase in NSERC funds to Universities can the research be done or most importantly future scientist be trained. This is an aspect that is too easily overlooked. We must have the funds to not only do research but to develop young minds to carry forward ideas into the future.

Sincerely,

John E. Drake
Professor and Head
Department of Chemistry

401 Sunset Avenue, Windsor, Ontario, Canada N9B 3P4, 519/253-4232

THE UNIVERSITY OF CALGARY

VICE-PRESIDENT (Academic)

2500 University Drive N.W., Calgary, Alberta, Canada T2N 1N4

Telephone (403) 284-5462

1984-11-26

The Hon. Thomas Siddon
Minister of State for Science and Technology
Ottawa, Ontario
K1A 1A1

Dear Sir:

I understand that the NSERC plan for the second five-year period commencing in 1985 will shortly be considered by the Cabinet. In the light of the huge federal budget deficit, I can appreciate that this five-year plan will undergo very rigorous scrutiny.

The need to re-negotiate NSERC's budget comes at a time when scientific research in our universities is extremely hard-pressed since the financial situation of the universities has forced them to withdraw so much of the indirect support that at one time they were able to offer to the university researcher. This withdrawal of support, coupled with the lack of new appointments to the faculty, could before long rob the research enterprise of its vitality.

The damage, I believe, will be greatest in the area of basic science, which relies heavily on NSERC 'operating grants', since it is these funds that have had to bear the major burden of new costs, and have, moreover, accounted over the past years for an ever decreasing fraction of NSERC's budget.] ?

Many of us who have devoted our careers to scientific research and to the education of our future scientists were very pleased to hear that you were calling for a doubling of the national expenditure on R. & D. and for the 'building up of Canada's science and technology capabilities from existing strengths', ("Globe and Mail", September 20, 1984).

We were also pleased to see the new Conservative government recognize the importance of science and technology to Canada's future in appointing a full-time Science Minister, the first such full-time appointment in many years. Understandably, the high-technology marketplace must have a high priority on your agenda. The point needs now to be made that our <u>applied science</u> can never be better than the <u>basic science</u> we have available to apply.

I would urge you and your Cabinet colleagues not to overlook the scientific manpower base which has already been developed in our universities, and to optimize that investment by drawing on university science as a source of ideas, advice and highly trained individuals. Every effort should be made to keep this enterprise healthy, since the return on investment - including jobs - will be enormous as the private sector recovers and the Canadian entrepreneurial spirit takes over.

Yours sincerely,

Peter J. Krueger, D.Phil.
Professor of Chemistry
and
Vice-President (Academic)

PJK/ig
cc: The Hon. H. Andre, Minister of Supply and Services
Mr. J. Hawkes, M.P.
Ms. B. Sparrow, M.P.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X7

Department of Chemistry

Telex: 016-4101
Tel.: (709) 737-8772

November 23, 1984

Mr. Brian Tobin, M.P.
House of Commons
Ottawa
K1A 0A6

Dear Mr. Tobin:

This month NSERC will be submitting its second five-year plan to the Minister of State for Science and Technology (The Honourable Thomas Siddon) and through him to the Cabinet. This Plan is for the period that starts in 1985. The need to re-negotiate NSERC's budget comes at a time when scientific research in our universities is extremely hard pressed since the financial situation of the universities has forced them to withdraw so much of the indirect support that at one time they were able to offer to the university researcher. This withdrawal of support, coupled with the lack of new appointments to the faculty, could before long rob the research enterprise of its vitality. Nowhere is this felt more acutely than at Memorial.

The damage, we believe, will be greatest in the area of basic science, which relies heavily on NSERC "operating grants", since it is these funds that have had to bear the major burden of new costs, and have, moreover, accounted over the past years for an ever decreasing fraction of NSERC's budget. Spokesmen for the present government, notably Dr. Siddon himself (see for example the Globe and Mail, Sept. 20th, 1984), have called for a doubling of the national expenditure on R & D and for the 'building up of Canada's science and technology capabilities from existing strengths'. As evidence of the seriousness of their intent, the government has, for the first time in many years, appointed a full-time Science Minister. Understandably, he sees the high technology marketplace as being his first concern. The point now

needs to be made that our applied science can never be better than the basic science we have available to apply.

We wish, with respect, to alert you to the importance of university science as a source of ideas, advice and highly trained individuals, and to acquaint you with our concerns regarding the continued health of this enterprise.

Yours sincerely,

John N. Bridson
Associate Professor & Head

Dr. H.J. Anderson

Dr. C. Flinn

Dr. B. Gregory

Dr. J.F. Kingston

Dr. C.R. Lucas

Dr. F.R. Smith

Dr. A.R. Stein

Dr. L.K. Thompson

Dr. J.G. Winter

June G. Winter

Dr. M.J. Newlands

University of Alberta
Edmonton
Canada T6G 2G2

Department of Chemistry
RB Jordan, Chairman
E3-38 Chemistry Building, Telephone (403) 432-3249

November 23rd, 1984.

Hon. Thomas Siddon
Minister for Science & Technology
House of Commons
Ottawa, Ontario
KiA OA6

Dear Mr. Siddon:

The second five-year-plan of the Natural Sciences and Engineering Research Council will soon be brought before Cabinet. Spokesmen for the present government have emphasized the importance and high priority of building strength in the areas of science and technology. The N.S.E.R.C. plan and budget are the core of the effort and deserve your full attention and support.

It is often forgotten in Canada that the basic research done at Universities is a cornerstone of a strong science and technology program. This research is the fuel for the program, providing the basic ideas, advice, and trained personnel that are required. Unfortunately support for basic research always seems to have been weak in Canada, and has been further crippled by inflation and reduced indirect support from Universities in recent years.

The cumulative effect of this neglect has put the momentum and modern status of much University research into serious jeopardy. For example, the inability to hire new University staff presents a serious deterrent to young Canadian scientists and technicians wishing to pursue a career in basic research.

We are already paying the price for past mistakes in this area. A major change in policy and budget priorities is required to get Canada back in the science and technology track. I hope you will give this objective your full support.

Yours sincerely,

Robert B Jordan

R. B. Jordan.

RBJ:ma

Office of the Minister of State / Science and Technology

Cabinet du Ministre d'Etat / Sciences et Technologie

29 XI 1984

YORK UNIVERSITY

FACULTY OF SCIENCE

4700 KEELE ST., DOWNSVIEW, TORONTO, CANADA M3J 1P3

DEPARTMENT OF PHYSICS

November 22, 1984

Dr. Thomas Siddon,
Minister of State for Science and Technology,
House of Commons,
Parliament Buildings,
Wellington Street,
Ottawa,
Ontario K1A 0R6

Dear Tom,

First of all my most sincere congratulations on the success of the Party during the recent election, and on your own well-deserved progress to the Cabinet. We had missed most of the campaign and the election itself, being in Cambridge on sabbatical leave in 83/84, but prior to leaving your familiar face was often seen on the CBC news broadcasts, initially in the back benches during the Clark months in power, and steadfastly through the "lean years" in opposition. Your elevation to a cabinet post is of course historic - not only the first full-time Minister of State for Science and Technology for many years, but the first with first-hand knowledge of the subject, and a fellow graduate of UTIAS at that!

My other purpose in writing is to offer assistance in any capacity that will aid in the goals of the new government, but also to express some personal concerns that have arisen since the financial statement was announced. The last five-year plan of NSERC, despite being released under a Liberal government was nevertheless a step in the right direction in injecting much-needed funds into the basic research system in the universities. However, the construction of the NSERC budget is very worrying - the increasing funds available have been on a "limited-offer" basis only, while the base budget is substantially less than the total expenditure. Thus a statement that "NSERC will remain immune from budget cuts" while factually true, could leave the base budget intact but cause a drastic reduction in scientific research.

At York, as at most university departments facing financial stringency for the last ten years, more and more support of research, both financial and in the use of faculty time, is being redirected to support an increased undergraduate enrolment. We manage in a manner, as always, and I am proud of my own Ph.D graduates and their present place in the R & D community, but I must express my concern that basic science, nearly totally supported by NSERC, remain strong in the second five-year plan beginning in 1985. We are in fact just emerging from a period of decline initiated in 1969, due to the initiatives put in place by the Clark government, and it would indeed be ironic if this revival is stalled by the present Conservative government.

....2

Dr. Thomas Siddon,
Minister of State for Science and Technology

November 22, 1984

Regardless of the outcome, I shall press on regardless in 1985, planning to expand my research in surface physics under the Strategic Grants program now that materials science has been belatedly added to the former areas of concern, continue with stimulating consulting to local high tech firms (eg. Barry French's Company Sciex) begin a new Shuttle project with astronaut Steve MacLean a former student, and continue with my second passion outside the family, which is running marathons. London in May.

My very best regards,

Sincerely

Bob.

Dr. Robert H. Prince, P.Eng.
Professor of Physics

McGill University

Department of Biology
Genetic Manipulation Research Group
1205 Avenue Docteur Penfield
Montreal, PQ, Canada H3A 1B1

November 22, 1984

The Honorable Thomas Siddon
Minister of State for Science and Technology
Parliament Building
Ottawa, Ontario

Dear Sir:

Canada spends over $5 billion a year, a substantial sum, on research and development (R&D) activities; and yet, Canadian science and technology is continuously sliding in the international race. This, I believe, is due to the fact that the bulk of money is spent on applied and short-range projects; and basic research, a foundation of any industrialized nation, is slowly eroding.

During the Liberal government, the budget of NSERC and MRC (two Federal agencies which are supposed to support primarily basic research), increased significantly. However, a large part of that increase went into the so-called 'strategic' programs. If this money had gone solely into basic research, today we would have commenced to apply some of the results to the high technology area. Since Canada did not appreciate the role of basic research, we are not competitive in the emerging technologies which evolve from basic research. In contrast, the rapid growth of genetic engineering and biotechnology over the last few years in the United States occurred entirely on the basis of university centers of excellence and led to the establishment of over 200 companies surrounding these centers.

The following questions should be asked: Where are the centers of excellence in Canada? Why aren't there any Nobel laureates lately from Canada? Why is Canada receiving so few patents? Why do bright Canadian scientists leave home? The answers to some of these questions may be very simple. We do not generally reward excellence; and as a result, mediocrity thrives. Our granting agencies, e.g., NSERC, support more than 70% of the research proposals it receives, while NSF, a comparable organization in the United States, funds less than 20% of the proposals. Obviously, quality survives.

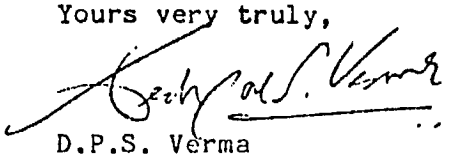
.../2

That progress in basic research is directly translated into a nation's ability to produce innovative products, was apparent in solid state physics, chemistry, and is now becoming apparent in life sciences. Thus, only those places, that are fully equipped and can attract fundamental research scientists of an international calibre, can hope to achieve the breakthrough which can be translated into the economic success of the country.

I would like to emphasize that any increase in the budget of Canadian Science and Technology should have its impact in the area of basic research, particularly in the universities. This will bear fruit in due time. Short-range goals in this sector are greatly detrimental to the progress of the nation. It is never too late to commence in the right direction; the foundation (Science and Technology) must be strengthened now. As Canada will have to share an increasing load of world food production within the next 10-15 years, basic research in the area of plant sciences should be enhanced. This has already been realized by the United States of America, which has recently increased its competitive research program in agricultural sciences by threefold.

Thank you for your attention to these views.

Yours very truly,



D.P.S. Verma
Professor and CP Scholar
Genetic Manipulation Research

DPSV/ym

220.03

RTMENT OF CHEMISTRY
TELEPHONE 902-424-3305

DALHOUSIE UNIVERSITY
HALIFAX, CANADA
B3H 4J3

November 21, 1984

The Honourable Thomas Siddon
Minister of State for Science
and Technology
Ottawa, ON

Dear Sir,

I am writing at this time to offer support to the government's objectives for increased research and development in Canada, and to pass on some comments and suggestions.

The major support for basic academic research is NSERC funding and, as you know, NSERC is now preparing its second Five Year Plan. As a researcher with NSERC support, I am in full agreement with one of the main thrusts of the new Five Year Plan - increased research money for operating grants. These are the grants in support of fundamental research in science and engineering, and they are the life-blood of a healthy research and development system. Support of basic research is essential to provide the environment for new ideas - both pure and applied.

Our current level of support for basic science and engineering research is considerably less than the optimum value. This has a detrimental effect both on the training that we are able to give our students, and on Canada's international scientific role. It is my hope that the new government will reverse this trend.

The 1979-80 Conservative government bravely initiated new scientific manpower programs, including the NSERC University Research Fellowships. This program has allowed the best of our young scientists to have positions in Canada; it is well-documented that it has attracted a number of young Canadian scientists back from abroad. (I returned to Canada from Oxford University in England to take up an NSERC University Research Fellowship.) It is essential that research support for young (and older) Canadian scientists be maintained in order to keep our most precious natural resource - mind power - in Canada.

. . . 2

While it might be tempting to cut costs by pushing only the developmental side of research and development, I would hope that the government would realize the short-sightedness of this approach. Research must come first if we are to have anything to develop.

I know that my views for increased support of basic research are shared by the academic scientific community, and, although NSERC represents our case very well, I would be pleased to expand on reasons for supporting basic research if you wish.

With best wishes for increased Canadian research,

Yours sincerely,

Mary Anne White
Assistant Professor (Research)
and NSERC University Research Fellow

MAW/rec
cc The Honourable Stewart McInnes, M.P.

ACADIA UNIVERSITY

DEPARTMENT OF CHEMISTRY

WOLFVILLE, NOVA SCOTIA, CANADA B0P 1X0

November 21, 1984

The Hon. T. Siddon, P.C., M.P.
Minister of Science and Technology
Government of Canada
OTTAWA, ONTARIO
K1A 1E7

Dear Sir:

I am writing to express my concerns regarding the future suport of basic research in Canadian universities.

Over the past few years the financial situations of most universities across Canada have lead to reduced support (both directly and indirectly) of basic research. Academic scientists have coped with this problem by spreading their NSERC grants over a wide variety of expenses. In addition to the long term effect on the quality of research carried out at Canadian universities the more immediate effect of this financial squeeze is on the ability of the universities to provide training in basic research to its students both at the undergraduate and graduate level. The result of this reduced capacity to do basic research will be a shortage of qualified individuals.

Although it may be a more attractive option for the present government to support today's technology in the hope of receiving a faster return, this will deny Canada of young talent trained in basic research who would be able to develop or readily adapt tomorrow's technology to future requirements of Canada.

This is a particularly important time for the government to increase, or at least maintain, its level of support for basic research through NSERC grants because the best hope for Canada's prosperous future is the continued development of a scientifically literate populus that will welcome both technological change and the benefits associated with it.

Yours sincerely,

R.L. White
Assistant Professor

RLW/be
cc. Mr. Pat Nowlan, M.P.
Mr. Stewart McInnes, M.P.

ACADIA UNIVERSITY

DEPARTMENT OF CHEMISTRY

WOLFVILLE, NOVA SCOTIA, CANADA B0P 1X0

November 20, 1984

The Hon. T. Siddon, P.C., M.P.
Minister of Science and Technology
Government of Canada
OTTAWA, ONTARIO
K1A 1E7

Dear Sir:

This letter is being sent to inform you of our concern about the funding of fundamental scientific research in Canada.

As Minister of Science and Technology, you will soon be introducing the NSERC budget to your cabinet colleagues. It is our concern that the funding for basic research in Canada not suffer because of the government's emphasis on technology and applied research.

Although the immediate impact of basic research is not always apparent, it is the opinion of many scientists that the long range technological development of Canada is based on a foundation of research programs currently being carried out in Canada by Canadians. Therefore, it is for Canada's own self interest that you give support to such work at our universities by ensuring that NSERC's budget be maintained and strengthened.

Yours sincerely,

D.A. Stiles

D.A. Stiles, Head
Department of Chemistry

DAS/be
cc. Mr. Pat Nowlan, M.P.

CANADIAN FEDERATION OF BIOLOGICAL SOCIETIES

FEDERATION CANADIENNE DES SOCIETES DE BIOLOGIE

November 20, 1984

The Hon. T. Siddon,
Minister of State for Science
and Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Mr. Siddon:

I am writing on behalf of the Canadian Federation of Biological Societies to express our support of the Natural Sciences and Engineering Research Council as it submits it's new 5-year plan for consideration.

We are well aware of the commitment of the new government toward increased support of research and development. Indeed, we are inclined to believe that the government is as aware as ourselves of the extent to which the future welfare of Canada is dependent upon that research and development.

Nevertheless, we are greatly concerned by recent actions of the government in cutting funding for support of some research activities at this time. We are not unmindful of the current need for fiscal restraint on the part of the federal government. However, we are equally aware that firm restraint upon funding of research and development has already been in effect for most of the past 15 years.

The effects of comparable restraint upon the navy are only too obvious to all when a ship limps home from an exercise with a split hull; or when a sister ship stalls at the mouth of the harbour and cannot be restarted. Effects of the restraint upon the Canadian research capacity are less obvious to all but those who - in addition to patriotic concern - have a vested interest in that capacity. Those with knowledge and experience of the Canadian research scene recognize that we are far behind our trading partners (and competitors) in both "high technology" and (even more so) biotechnology. We can point to some isolated successes, but not enough of them to be complacent about the future.

There is room for legitimate differences of opinion as to whether there is any possibility of Canada ever catching up, or whether the dice have already been irrevocably cast. However, there is no room for doubt that if Canada is to compete successfully we must apply a maximal effort now. There is equally no room for doubt that develop

/page 2

Suite 1001, 75 Albert Street, OTTAWA, ONTARIO K1P 5E7 Telephone (613) 237-6685

ment depends upon solid applied research which, in turn, is absolutely dependent upon prior basic research: that training for good applied research is every bit as rigorous as for basic research: that we are not attracting enough students to undertake as much of either category of research as we need: or that locking up all university faculty with applied research will leave none to do the basic research.

Japan, often cited with admiration as a potential model, for us in learning these truisms the hard way - enclosure. We cannot affort to learn other than by the easy way - which in the case of need for basic research is heeding the Wright Task Force report, and for training in science in general is heeding the report of the Science Council of Canada.

Thus, our recognition of the need for fiscal restraint is tempered by our recognition of the potential damage which that restraint can do to our national capacity to undertake sufficient research and development to remain competitive with our competitors.

The NSERC and the MRC currently enjoy the confidence of the research community of Canada. The former is on the point of submitting a new 5-year plan; the latter has submitted a plan which has been tabled. In each case the agency has submitted proposals which it considers the minimum required to fulfill it's mandate in a period of severe fiscal restraint.

We therefore urge that you give these agencies your fullest support for adoption of their plans without cuts. Restoration of funds at a later date is not a sufficient condition for resumption of research which has been abandoned for lack of support. The necessary condition is that they not be cut.

Sincerely,

Stanley D. Wainwright

Dr. S.D. Wainwright,
Vice-President for Science Policy
Biochemistry Department
Dalhousie University
Halifax, N.S.
B3H 4H7

cc: The Hon. B. Mulroney
The Hon. J. Epp
The Hon. F. MacDonald
The Hon. J. Fraser
The Hon. S. Stevens
The Hon. J. Wise
The Hon. P. Carney
The Hon. G. Marrithew
Dr. G. MacNabb
Dr. P. Bois

Department of
Computer Science

YORK
UNIVERSITY
FACULTY OF ARTS
FACULTY OF SCIENCE
4700 KEELE STREET, DOWNSVIEW, ONTARIO M3J 1P3

November 19, 1984

Mr. Tom Siddon
Minister of State for Science and Technology
House of Commons
Parliament Buildings
Wellington Street
Ottawa, K1A 0A6

Dear Mr. Siddon,

The government is to be congratulated on giving us the first full-time Minister of State for Science and Technology for many years. In your position as Minister, I would like to urge you to ensure that NSERC continues to receive the funding required to maintain and enhance research activity within the University communities.

University science, as a result of the policies put in place by the Clark Government, is just now emerging from a period of decline initiated in 1969. This revival, put in place by the former conservative government, must not be stalled.

The universities provide a source of ideas, advice and highly qualified manpower and it is on this base that applied science builds. Clearly the level of application can never be better than the level of basic science as it is encouraged at the university level.

The last five year plan of NSERC was successful in injecting significant amounts of additional money into the university research system. I urge you to ensure that the second five year plan--for a period beginning in 1985--continues to provide the support necessary to maintain and encourage university research.

Sincerely,

M. M. Shepherd
Chairman

MMS:mb

...rtment of Physical
...on and Athletics

YORK
UNIVERSITY

4700 KEELE STREET, DOWNSVIEW, ONTARIO M3J 1P3

November 19, 1984

Mr. Tom Siddon
Minister of State for
Science and Technology,
House of Commons
Parliament Buildings
Wellington Street,
Ottawa, Ontario
K1A 0A6

Dear Mr. Siddon:

As you may be aware, research in the basic sciences at Canadian Universities receives extensive fundings from the Natural Sciences and Engineering Research Council. In the past two years, NSERC has received considerable infusions of money and these funds have stimulated an exciting climate amongst researchers. However, the funds have been provided on a "one-time-only" and "two-time-only" basis, rather than as a change in the basic budget. If these supplements were to be discontinued, it would be a tremendous set-back for basic research at Canadian Universities and it would have a very negative affect on research as a whole. Enhanced scientific activity, is fuelled by the universities, and although applied science and technology is of obvious importance, it cannot progress without the support of good basic research.

I recommend earnestly that you continue the strong support of basic research which was initiated by policies established in the Clark government.

Sincerely,

N. Gledhill, Ph.D.
Director,
Graduate Program in Physical Education

:rt

UNIVERSITY OF
NEW BRUNSWICK Bag Service Number 45222 / Fredericton, N.B. / Canada E3B 6E2

Department of Chemistry
(506) 453-4777

Telex: 014-46-202

November 15, 1984

Mr. Thomas Siddon
Minister of State for Science
and Technology
Government of Canada
Ottawa, Ontario
Canada

Dear Sir:

As an active researcher I am writing to you, the new Minister of Science, to express my concern at the level of funding for basic research provided by the government. My concern is heightened by the impending submission to you of the second five-year plan of the NSERC.

Over the last decade the support of basic research in Canada has decreased steadily. When the total research support has been increased a significant amount has been allotted to strategic or technological areas of research, leaving basic research with no new funding. An example is the NSERC program of strategic versus normal operating grants.

I feel this policy is shortsighted and wrong. I have nothing against technology or the identification of strategic areas of concern. However that type of research is dependent on basic research. It is not possible to technically develop something for which there is no basic information. Basic research has a way of totally altering the technical equations. A well cited example is the vacuum tube (electron tube) which was taken to an incredibly high state of technological development before basic research on the esoteric subject of silicon and germanium produced silicon chips and consigned vacuum tubes to museums overnight. In my own area of research, chemistry, the strategic goals of self sufficiency in Canadian energy have been criticised over the years by members of your own political party. The economic arguments which supported that policy collapsed. Basic research is independent of economics, and will itself alter the economic equation drastically - basic research on the photochemical production of hydrogen from water will, when successful, make present calculations on energy totally obsolete.

...../2

1785 1985 University of New Brunswick

Unfortunately basic research, being a long-term enterprise and seldom producing results like aeroplanes or bridges which can be presented or "opened" with much ceremony, requires at its head a determined politician who understands its value and will fight for it. The scientific community in Canada was pleased to finally obtain a full-time Science Minister, instead of being put in the corner of Public Works or Fisheries or whatever. We hope that you will also see the need for basic research in Canada, and will accordingly, through NSERC, increase funding for such research.

Yours sincerely,

Frank Bottomley
Professor

FB/mjc

c.c. Bob Howie, Member of Parliament, House of Commons, Ottawa
Dean D.G. Brewer

NOV 19 1984.

TRENT UNIVERSITY PETERBOROUGH ONTARIO CANADA

K9J 7B8

Department of Chemistry

1984 11 13

Mr. Bill Domm, M.P.,
Peterborough Constituency Office,
210-360 George Street North,
Peterborough, Ontario. K9H 7E7

Dear Mr. Domm,

Within the very near future, NSERC will be submitting its second five-year plan to the Minister of State for Science and Technology (the Honorable Thomas Siddon) and through him to the Cabinet. This plan is for the period that starts in 1985. In the light of the present huge budget deficit, we can be sure that this five-year plan will not have an easy ride.

The need to re-negotiate NSERC's budget comes at a time when scientific research in our universities is extremely hard-pressed since the financial situation of the universities has forced them to withdraw so much of the indirect support that at one time they were able to offer to the university researcher. This withdrawal of support, coupled to the lack of new appointments to the faculty, could before long rob the research enterprise of its vitality.

The damage, we believe, will be greater in the area of basic science, which relies heavily on NSERC 'operating grants', since it is these funds that have had to bear the major burden of new costs, and have, moreover, accounted over the past years for an ever decreasing fraction of NSERC's budget.

As evidence of the seriousness of the government's intent, a full-time Science Minister has been appointed for the first time for many years. Understandably, Mr. Siddon sees the high-technology market-place as being his first concern. Mr. Siddon himself (see for example the Globe and Mail, September 20th, 1984), as one of a number of spokesmen for the present government, has called for a doubling of the national expenditure on R. and D. and for the 'building up of Canada's science and technology capabilities from existing strengths'. The point now needs to be emphasized that our applied science can never be better than the science we have available to apply.

We know that you are well aware of the importance of university science as a source of ideas, advice and highly-trained individuals, and we hope that you will actively support the second five-year plan of NSERC which is so vital to the continued health of the university enterprise.

Yours sincerely,

Peter F. Barrett	Robert G. Annett	Robert A. Stairs	Raymond E. March
Professor and Chairman	Associate Professor	Professor	Professor

270-03

McGill University

Department of Chemistry
Otto Maass Chemistry Building (514) 392-4469

1000th Chemistry Ph.D. in 1984

November 13, 1984

The Honourable Mr. Thomas Siddon
Minister of State for Science and Technology
Parliament Hill, Ottawa

Dear Mr. Siddon:

Re: NSERC Funding

The situation with respect to the lack of funding for the basic sciences is critical. My research activities are now being seriously hindered because of a lack of resources. My group was composed of 5 people, i.e. 4 students and 1 research associate. The research associate is now on unemployment insurance; I have not the funds to pay the graduate students much longer; I cannot take on additional students; I have not the resources to permit my students to make full use of the McGill computer; I cannot travel to meetings.

I urge you to consider very carefully the consequences of not increasing NSERC's budget. Education may seem expensive, but consider the cost of ignorance.

Yours sincerely,

B.C. Sanctuary
Professor of Chemistry

BCS/cmd

cc Mr. Donald Johnston
M.P. for Westmount

Postal address: 801 Sherbrooke Street West, Montreal, PQ, Canada H3A 2K6

UNIVERSITÉ D'OTTAWA UNIVERSITY OF OTTAWA

OTTAWA ONTARIO CANADA

le 12 novembre 1984

Monsieur B. Turner, M.P.
Député de Carleton-Est
Chambre des Communes
Ottawa, Ontario
KOA 1A6

Cher monsieur Turner,

Permettez-moi tout d'abord de vous féliciter de votre récente élection à la Chambre des Communes. Je vous souhaite plein succès dans vos responsabilités parlementaires.

En tant qu'électeur de votre circonscription, et en tant que membre de la communauté scientifique canadienne, je désire vous entretenir d'un problème préoccupant pour l'avenir de la recherche et du développement au Canada.

Le Conseil de Recherches en Sciences Naturelles et en Génie (CRSNG) soumettra dans quelques jours au Ministre d'Etat à la Science et la Technologie (L'honorable Thomas Siddon) le deuxième plan quinquennal du CRSNG qui débutera en 1985. Ce plan arrive à une période critique pour la recherche scientifique au Canada et concerne essentiellement la recherche universitaire. Suivant la réaction du Cabinet et selon les fonds que le gouvernement fédéral décidera d'allouer au CRSNG on risque d'assister à un démembrement irréversible des équipes de recherches qui équivaudrait à un coup de grâce pour la science fondamentale dans notre pays.

Le gouvernement conservateur nous a promis davantage de support pour la recherche et le développement. Je suis cependant obligé de constater que la position budgétaire de l'honorable Michael Wilson implique déjà des coupures drastiques dans ce domaine (par exemple l'annulation d'une subvention de $5,000,000 pour le centre de Toxicologie Toronto-Guelph).

Il faut surtout comprendre que le Canada pourra difficilement se lancer dans davantage de recherche appliquée s'il n'y a pas des fondations solides en recherche de base. Après tout c'est bien cette dernière qui permet de mettre au point les nouvelles technologies. Or, le financement dont est responsable le CRSNG est avant tout pour la recherche de base. Il est donc important qu'il dispose d'un budget adéquat pour répondre au défi que représente la compétition mondiale à laquelle nous participons. Si les américains

Office of the Minister of State Cabinet du Ministre d'Etat . . . /2

12 IV 1985

Science and Technology Sciences et Technologie

Département de Biologie
Faculté des Sciences et de Génie
30 Somerset E.
K1N 6N5
Department of Biology
Faculty of Science and Engineering

et les japonais sont rendus si loin dans les nouvelles technologies, c'est bien parce qu'ils n'ont jamais négligé la recherche de base. Nous avons malheureusement subi un traitement déplorable par le gouvernement précédent qui ne semblait avoir aucune compréhension de la science. Permettez-moi d'espérer que nous avons maintenant un gouvernement qui saura voir clair dans ce domaine.

Je compte donc, cher monsieur Turner, que vous interviendrez favorablement au nom des scientifiques canadiens et vous en remercie d'avance. Veuillez recevoir l'expression de mes sentiments les meilleurs.

BJR Philogène

Bernard J.R. Philogène, Ph.D.
Professeur et Vice-Doyen

BJRP/srr

Brock University

Department of
Biological Sciences

St. Catharines, Ontario,
Canada L2S 3A1

Telephone (416) 688-5550
Extension 3368

November 9, 1984

Mr. J. Reid, M.P.,
600-43 Church Street,
St. Catharines, Ontario.

Dear Mr. Reid,

At the urging of Prof. John Polanyi (University of Toronto), I am writing to you to express my concern at the possible threat to NSERC's budget. NSERC's second five-year plan is due to be submitted shortly to the Minister for Science and Technology (Hon. Thos. Siddon). In view of the deficit problem we are worried that the plan may not be approved. Yet the government and Mr. Siddon (cf. Globe and Mail, Sept. 20th 1984) have called for a doubling of national R. and D. expenditure and for the 'building up of Canada's science'.

Not only does the basic science supported by NSERC act as a resource for applied developments, but NSERC itself funds projects and programmes under its 'infrastructure' and 'strategic' sections that are partially applied in character.

We at Brock for example are currently applying for an NSERC infrastructure grant to support a 'Synthetic Peptide Immunogen Facility' that if successful will reduce Canadian dependence on imported US products and facilit ate work in both fundamental science and medicine (at McMaster and other Universities).

The gravity of the current situation is exemplified in the enclosed statement from NSERC ('Contact', Sept. 1984) concerning the unprecedented likelihood of a near-freeze on equipment grants. I and my colleagues urge that favourable consideration be given to the NSERC submission.

Yours sincerely,

Peter Nicholls

Peter Nicholls,
Professor, Biological Sciences

PN:mf
enc.

c.c. Dr. A.H. Houston,
Dean, Mathematics & Science

ST. FRANCIS XAVIER UNIVERSITY
ANTIGONISH, NOVA SCOTIA
B2G 1C0

DEPARTMENT OF BIOLOGY

November 9, 1984

The Honourable Thomas E. Siddon
Minister of State for Science and Technology
House of Commons
Ottawa, Ontario K1A 0A6

Dear Dr. Siddon:

I encourage you to support strongly the bid by NSERC to initiate its second five-year plan.

University research in the basic sciences is fundamental to the advancement of knowledge. Applied technological research which can make money for Canada relies heavily on discoveries, ideas, and advice from the basic science sector. As well, the universities' research programs train the coming generations of both basic and applied research scientists. To do these jobs well we need continued support in the form of operating grants, equipment grants, scholarships and fellowships.

Thank you for your time.

Yours sincerely,

W.S. Marshall

William S. Marshall, Ph.D.
NSERC-University Research Fellow

WSM/mm

cc: Lawrence O'Neil, M.P.
Cape Breton Highlands - Canso

UNIVERSITY OF TORONTO
TORONTO, CANADA
M5S 1A1

.RTMENT OF MATHEMATICS

November 2, 1984

Honourable Thomas Siddon, MP,
Minister of State for Science and
Technology
House of Commons
Ottawa, Ontario.

Dear Sir:

I write to express my concern over the need for increased funding for both basic and applied research in Canadian universities.

I am sure you are well aware that the world economic environment is becoming increasingly competitive. Canada's ability to maintain and enhance its financial well-being into the next century will depend to a very large extent on the educational capital that is created over the next 10-15 years. Proper, thoughtful and adequate investment in our universities will produce rich personal and societal rewards.

We cannot afford to ignore any longer the damage that has been done to Canadian scientific efforts by the unduly harsh constraints of the past decade. I look forward to your active support in promoting a more appropriate level of financial assistance to scientific research.

Sincerely,

Stephen Tanny

Stephen Tanny
Associate Professor.

ST/wk

BIOLOGICAL COUNCIL OF CANADA • OFFICE OF THE PRESIDENT
CONSEIL CANADIEN DE BIOLOGIE • BUREAU DU PRÉSIDENT

Department of Biology,
Memorial University of Newfoundland,
St. John's, Newfoundland
Canada A1B 3X9
Telephone: (709) 737-7497
Telex: 016-4101

02 November 1984

The Hon. Thomas E. Siddon, M.P.
Minister of State for Science & Technology
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Mr. Siddon:

Natural Sciences and Engineering Research Council 1984/85 Funding

I am sorry we were unable to meet at the reception earlier this year to which you were invited, but it gives me great personal pleasure to write you now as Minister of State for Science & Technology. I write on behalf of the Biological Council of Canada, an umbrella organization representing some 5,000 biologists in Canadian universities, government, and industry. It is specifically on behalf of the university sector of our constituency that I am writing you to express some concerns respecting the prospective funding for the Natural Sciences and Engineering Research Council in the coming fiscal year.

As you will know, the funding of the university research by the Natural Sciences and Engineering Research Council is of critical importance in maintaining and developing Canada's research strength and manpower for the future. We are concerned over recent indications that the projected budget for NSERC for 1985/86 is to be $11.3% million less than that of the current budget year. A consequence of this will be that NSERC will be unable to support more than 10% of the anticipated equipment needs of university scientists and engineers. Considering that over 50% of all equipment grant applications are given an A rating (as essential for funded research) by the NSERC Grant Selection Committees, it will be evident that the

.../2

prospective funding will fall far short of what is needed and judged to be essential for the maintenance and development of university research.

We have been encouraged by the Progressive Conservative Party's commitments to science, and hope that through an expression of these concerns you will endeavour to ensure that the additional funding needed by NSERC for the coming fiscal year will be provided, and that these funds will be incorporated in the A base in future years. Without this commitment and the ability to undergo long term planning, NSERC will be unable to implement the important programmes funded during the first phase of its 5 year plan.

Yours sincerely,

G. Robin South,
President.

GRS/ce

cc: Dr. G. MacNabb, President
NSERC