NATIONAL DNA DATA BANK ADVISORY COMMITTEE ANNUAL REPORT 2008-2009

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INTRODUCTION

The National DNA Data Bank (NDDB) commenced operations in July 2000 under authority of the *DNA Identification Act*, 1998, c.37, and operates under the Policing Support Services Branch of the RCMP as a national service to all Canadian law enforcement agencies. The NDDB has a current staff complement of 23 specialists with an operating budget of approximately $3.7M per year with additional infrastructure and resources provided by the RCMP. When fully staffed, the NDDB will have a staff of 31 members.

The NDDB contributes to the administration of justice and the safety of Canadians by quickly identifying those who commit serious crimes across all police jurisdictions in Canada while eliminating innocent people from suspicion. It assists law enforcement agencies in solving crimes by:

- Linking crimes together where there are no suspects;
- Helping to identify suspects;
- Eliminating suspects where there is no match between crime scene DNA and a DNA profile in the National DNA Data Bank.
- Determining whether a serial offender is involved

The National DNA Data Bank is responsible for two principal indices:

1. The Convicted Offender Index (COI) is the electronic index which is composed of DNA profiles collected from offenders convicted of designated primary and secondary offences that are defined in section 487.04 of the Criminal Code; and,
2. The Crime Scene Index (CSI) is a separate electronic index which is composed of DNA profiles obtained from crime scene investigations involving the same defined designated offences.

THE NATIONAL DNA DATA BANK ADVISORY COMMITTEE

The National DNA Data Bank Advisory Committee was formalized under authority of the *NA Data Bank Advisory Committee Regulations*; P.C. 2000-635 May 4, 2000. Committee members are as follows:

- Richard A. Bergman (Chairperson) MSc., Deputy Commissioner (Rtd), Police Community Representative
- Dr. George R. Carmody (Vice Chairperson) Population Biology Specialist, Associate Professor of Biology, Carleton University, Ottawa, Ontario
- Hon. Peter Cory, C.C., C.D., Q.C. Representing the Law, the Osler ADR Centre, Toronto, Ontario
- Dr. Ron Fourney, Director, National Services and Research, RCMP
- Gisele Cote-Harper, O.C., Q.C., Human Rights Specialist, Professor, Faculty of Law, Laval University, Sainte-Foy, Quebec
- Dr. William S. Davidson, Medical Genetics Specialist, Professor of Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, B.C.
- Chantal Bernier, BCL, LLM, Assistant Privacy Commissioner of Canada, Ottawa, Ontario
- Dr. Frederick R. Bieber, Bio-Medical Ethics Specialist, Associate Professor of Pathology, Harvard Medical School, Brigham and Women's Hospital, Dept. of Pathology, Boston, Mass.

This report covers the period from May 2008 to May 2009. During that period, the National DNA Data Bank Advisory Committee (the Advisory Committee) met twice in Ottawa during October 2008 and April 2009.

DATA BANK GROWTH

As of May 2009, the Convicted Offenders Index (COI) had received approximately 172,000 biological samples over an 8 ½ year period. Of that total, 159,500 were analyzed and their DNA profiles entered into the COI. Samples received and profiles entered into the COI of the NDDB

can differ and be accounted for because of: the issuance of duplicates (two duplicate samples from the same person); court orders not received; court orders received were for non-designated offences; sample collection kits were inappropriate; or the samples in the sample collection kits were inadequate to derive a DNA profile. During the same period, approximately 48,600 DNA profiles were uploaded to the Crime Scene Index (CSI) from the three contributing forensic organizations; RCMP Forensic Science and Identification Services (FSIS, composed of six RCMP Forensic Laboratories), the Centre of Forensic Science (Toronto) and the Laboratoire de science judiciaries et medicine legale (Montreal). In total, the NDDB now contains more than 208,000 DNA profiles. Searches of the CSI against the COI (crime scene index vs. offender index) have now produced over 11,600 offender hits while searches of the CSI against itself (crime scene index vs. crime scene index) have produced over 1,800 forensic hits. Forensic hits or matches between the COI and CSI or within the CSI have made links to over 740 murders, 1,550 sexual assaults, 280 attempted murders and over 1,350 armed robberies. Almost 6,500 Break & Enters (B&E's) with intent investigations were also assisted through NDDB searches.

SAMPLE VOLUME - CONVICTED OFFENDER INDEX

As reported previously, when the NDDB was planned and implemented in 2000, the anticipated capacity was based on projections provided by Consulting and Audit Canada. The anticipated capacity was based on an expected 18,700 submissions per year following convictions for Primary Designated Offences (100% of 18,700) and 9,500 submissions following convictions for Secondary Designated Offences (10% of 95,000). The total capacity was estimated to be at least 28,000 samples per year. For several years, the Advisory Committee expressed concern over the lower than expected submission rate of COI samples following convictions for Primary Designated Offences, e.g., approximately 9,000 to 10,000 samples per year for the five years up to fiscal year (FY) 2007/08. This level represents only 50% of the originally anticipated intake rate. Recent statistics now indicate that there has been a significant increase in the submission rate for Primary Designated Offences over the past year, e.g., 17,500 during FY 2008/09, an increase of almost 70% more than the previous year. Secondary Designated Offence submissions to the COI have also increased significantly. For the five years previous to FY 2007/08,

Secondary Offence submissions ranged from 8,000 to 9,000 samples per year, only slightly lower than the originally anticipated submission rate. However, during FY 2008/09, over 16,000 secondary samples were received by the NDDB, an increase in excess of 80% over the previous year. The rapid growth in Secondary Designated Offence submissions continues to be in part, due to increased B&E sample submissions following the high match rates associated with this category in the NDDB. Contributing laboratories have created analytical units to fast track these types of crime scene profiles. Total submissions to the COI from both categories reached approximately 34,000 during FY 2008/09, the volume now exceeding the original anticipated capacity by over 20%. Total sample submissions to the COI are now approaching 172,000. It would seem clear that the submission growth rates in both the primary and secondary categories have been positively affected by amendments to the legislative scheme made by an Act to amend the *Criminal Code,* the *DNA Identification Act* and the *National Defence Act,* S.C. 2005 c.25 (former Bill C-13) and by an Act to amend certain Acts in relation to DNA Identification*,* S.C. 2007 c.22 (former Bill C-18) which came into full force on January 1, 2008. These amendments upgraded a number of Secondary Designated offences to Primary Designated Offences, added 176 new offences to the designated categories and eliminated judicial discretion for 16 serious offences involving grave violence. The amendments made the following significant changes:

. Added all indictable offences under the *Criminal Code* and sections 5,6 and 7 of the *Controlled Drugs and Substances Act* (CDSA) that are punishable by imprisonment for 5 years or more to the list of Secondary Designated Offences and, for the purpose of making a DNA data bank order, have been prosecuted by indictment;

. Eliminated judicial discretion not to make a DNA data bank order for 16 offences involving grave violence including murder, kidnaping and aggravated sexual assault;

. Moved a number of offences from the list of Secondary Designated Offences to the list of Primary Designated Offences, e.g., robbery and break & enter a dwelling; and

. Expanded the retroactive provisions in 2005 to include persons convicted of a single murder, attempt murder, manslaughter or a sexual offence and expanded the list of sexual offences to include “historical” offences.

At the NDDB level, where the growth rate in COI samples is significant, advances in technology would indicate that the NDDB will be able to process up to 50,000 to 60,000 COI samples per year with only a moderate resource increase. However, should the COI input increase more dramatically, the NDDB will be faced with a significant resource challenge. In the recently published report of the House of Commons Standing Committee on Public Safety and National Security, Recommendation 3 suggests that the *DNA Identification Act* and related laws be amended to systematically require the taking of DNA samples upon conviction for all designated offences. According to Department of Justice forecasts, this would increase the sample input to the NDDB to a minimum of 113,000 samples per year and perhaps much higher, an increase at the minimum, in excess of 300% over the FY 2008/09 level. Such changes in legislation would clearly require a significant resource increase to the NDDB, as noted in the report from the Standing Committee on Public Safety and National Security.

SAMPLE VOLUME - CRIME SCENE INDEX

During the five fiscal years prior to FY's 2008/09, the CSI profiles uploaded to the NDDB from contributing forensic laboratories ranged from 5,400 to 7,800, the average being about 6,500 per year. The growth rate in this index has not been consistent - sample submissions having declined during two of the five years. During FY 2008/09, CSI profile submissions rose by 7,321, a level moderately higher than the five year average. However, compared to the considerable growth in the COI during FY 2008/09, it is clear that the growth in uploads of crime scene profiles to the CSI from the three contributing laboratory organizations is relatively constant.

The total submissions since July, 2000, now total just over 48,000. At the current rate, the COI is now growing almost eight times faster than the CSI. As reported in a 2007 study by Government Consulting Services (GCS), a significant enhancement of the match rate is not only dependent upon an increase in the number of COI profiles in the NDDB, but also a parallel increase in submissions to the CSI, i.e., uploading of unsolved scenes of crime profiles from the contributing forensic laboratories, all of which are encountering service demands well above their throughput capacity. This issue has been the subject of comments by the Auditor General

of Canada in her May 2007 audit report of the RCMP Forensic Laboratories, by the Auditor General of Ontario in the December 2007 report on the Centre of Forensic Sciences (Toronto) and by the 2009 Report of the House of Commons Standing Committee on Public Safety and National Security following their *Statutory Review of the DNA Identification Act.* With existing resources, it is not apparent that the contributing forensic laboratories have the capacity to significantly increase their DNA processing throughput and subsequently upload the additional crime scene profiles to the NDDB.

While the growth in the CSI in recent years has been relatively modest and would be expected to grow if resources to the contributing laboratories are increased, the input volume to the CSI will always be significantly lower than the COI volume since a great many samples to the COI follow convictions for crimes which do not involve the use of DNA in police investigations. At the same time, the Advisory Committee is of the opinion that the COI growth rate will eventually begin to moderate as the COI become more reflective of the active criminal population in Canada and recidivism rates result in a leveling off of new sample submissions to the NDDB.

CONTRIBUTING PROVINCES AND LABORATORIES

Although not corrected for provincial/regional crime and conviction rates, the following table illustrates the COI and CSI contribution rate comparisons by percentage from the three contributing forensic organizations and regions[1]:

Regions	% of Canadian Population (%)[1]	COI Samples from Provinces/Regions (%)	CSI Profile uploads from Laboratories (%)
Ontario	39	44	39
Quebec	23	17	32
RCMP Jurisdictions	38	39	29

[1] Statistics Canada

While Ontario's contribution to the COI is slightly higher than its population percentage, Quebec's input is lower and its CSI input is higher. RCMP jurisdictions follow the general population level in COI contributions but have been historically lower in CSI uploads to the NDDB. This data is empirical in nature and has remained relatively constant over the past several years.

NDDB EFFECTIVENESS

In 2006, the Advisory Committee expressed its interest in measuring the overall effectiveness of the NDDB in Canada. Funding from the Department of Justice (DOJ) was approved to support a joint study to be led by DOJ, and include both Public Safety Canada (PSC) and the RCMP. The results of the study are contained in a report from DOJ titled *DNA Orders Issued in Adult Criminal Court: A National DNA Utilization Study*[2]. Quotes from the Executive Summary follow: "The purpose of the present research is to determine how often DNA orders are made in criminal courts across Canada (utilization rate) for both primary and secondary designated offence convictions, what factors are related to receiving a DNA order, the recidivism rate of offenders who have received a DNA order and the proportion of DNA orders made by the courts that do not result in a DNA flag on the offenders Canadian Police Information Centre (CPIC) record.

The sample consisted of 7,002 randomly selected CPIC records from the RCMP database's violent, arson, sex, robbery and weapons categories. The criminal history of each offender was coded in aggregate form. All convictions on the offender's criminal record between the enactment of the legislation (June 30, 2000) and the end of the study period (August 31, 2006) were coded individually. A primary or secondary designated offence was determined to be eligible for a DNA order where the conviction was between the date of enactment of the legislation and the date the DNA order was imposed, or the end of the study period, whichever came first.

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[2] Kelly E. Morton Bourgon, Paul Verbrugge and Kimberly Burnett

The 7,002 CPIC records produced a total of 9,359 eligible primary and secondary designated offence convictions. A DNA order was made in approximately one quarter of all eligible designated offence convictions. In just over half of the eligible primary designated offence convictions, a DNA flag was on the offenders' CPIC record, indicating that a DNA order was made. Approximately 17% of eligible secondary designated offence convictions had a DNA flag on record. For primary designated offences, the courts appear to be making DNA orders for a high proportion of homicide convictions, followed by sexual assault convictions. In the case of secondary designated offences, the utilization rates are much lower, with the exception of robbery, where the utilization rate is almost 60%.

Utilization rates are increasing over time. By 2006, the courts were imposing DNA orders in 75% of primary designated offence convictions, up from 21% in 2000 and 8% in 2002. In 2006, judges ordered DNA to be taken in 30% of secondary designated offence convictions, up from 8% in 2000 and 16% in 2002. Utilization rates vary by jurisdiction, with Ontario having the highest utilization rates for both primary and secondary designated offence convictions. Quebec had the smallest proportion of orders made for primary designated offence convictions. The smallest utilization rate for secondary designated offence convictions was found in the Territories.

A multiple regression analysis found that an offender convicted of a primary designated offence was more likely to receive a DNA order if the conviction was for homicide or a sexual offence, if they had previously been convicted of a person-related offence and if they were convicted in Ontario. The likelihood of a DNA order also increased over time. Offenders convicted of a secondary designated offence were more likely to receive a DNA order if the conviction was for robbery, break and enter or a sexual offence, if they had a prior conviction for a person-related or sexual offence, if they had previously received a custodial sentence and if they were convicted in Ontario. The likelihood of a DNA order also increased over time and with the number of prior sentencing occasions (i.e., disposition dates).

Almost half of the offenders who had received a DNA order for a primary or secondary designated offence conviction were subsequently convicted of another offence. Specifically,

47% of persons convicted of a primary designated offence and 53% of persons convicted of secondary offence have recidivated.

There were 748 primary designated offence convictions that were located by the courts that did not have a DNA flag on the criminal record. Court personnel verified whether or not a DNA order had been imposed by the court. According to the court files, 9% of these convictions did indeed have a court imposed DNA order. Upon follow-up with the RCMP, it was determined that 56% of these convictions did in fact have a DNA flag on the offenders' criminal record. Therefore, of the identified primary designated offence convictions, 3.7% still did not have a DNA flag on the criminal record.

The use of only CPIC records was a major limitation of this study. CPIC data contains very limited information about the offender and the offence that was before the court. In the case of this study, information was missing on the offenders' age and gender. Additionally, CPIC data only provides the date of conviction and the sentence, but does not include offence date or release information. The major strength of this study is that the study sample closely resembles the population of DNA profiles in the NDDB. This study, therefore, provides a good baseline for utilization rates in Canada. Any amendments made to legislation can be measured against these results. Furthermore, this research provides a beginning step into examining the use of DNA in Canada."

Since this study was concluded in August 2006, the impact of the amendments to the DNA Identification Act, the Criminal Code and the *National Defense Act* implemented through *Bills C-13 and C-18* were not reflected in the results. However, it is clear that utilization rates for both primary and secondary designated offences were increasing prior to the above amendments. Both the COI and CSI input have increased considerably since the passage of the above amendments and in all likelihood, will grow dramatically if the law is amended to systematically require the taking of a DNA sample upon conviction for all designated offences.

The Advisory Committee would like to thank the Department of Justice for funding the study, Public Safety Canada and the RCMP for their cooperation and more specifically, Kelly E.

Morton Bourgon for guiding, researching and authoring the study which led to this report. It will clearly provide a basis against which further progress can be measured in the future.

RETROACTIVE SAMPLE COLLECTION PROJECT

The retroactive sample collection project, which began in 2000, was reconstituted in the spring of 2000, shortly after the passage and Royal Assent of the expanded retroactive provisions contained in Bill C-13. When the full provisions of both Bills C-13 and C-18 were implemented in January 2008, the number of offenders who qualified for collection since 2000 grew to 6,116. By March 2009, 5,097 files were concluded with 1,020 open files still awaiting DNA blood sample kits. The retroactive project should be complete by early 2010, however, this is dependent upon the provincial Attorneys General completing the outstanding requests for Retroactive DNA Authorizations and their execution by the law enforcement community.

TRAINING PROGRAM

The DNA Training and Collection Unit continues to provide training to police officers and other justice personnel on DNA Legislation and procedures for the proper use of DNA kits for the collection of DNA samples. During F/Y 2008/09, training sessions were provided in Newfoundland & Labrador, Nova Scotia, New Brunswick, and Ontario. For fiscal year 2009/10, training sessions are planned for British Columbia, Saskatchewan, Manitoba and Ontario. Continued training in the gathering and handling processes is extremely important in view of the number of transfers and promotions which occur routinely in police agencies across Canada. As well, the quality of the collection process is becoming more important as DNA analytical procedures become increasingly more sensitive to minute traces of DNA contained in exhibits collected at scenes of crime. In addition, the NDDB continues to provide downloadable training packages covering all aspects of DNA collection on its website at **http://www.nddb-bndg.org/train_e.htm**.

MISSING PERSONS INDEX

The Advisory Committee continues to follow the progress of discussions between Public Safety Canada and the Federal, Provincial, Territorial (FPT) Working Group in relation to the establishment of a National Missing Persons Index (MPI) in Canada. This group was created in 2003. In 2005, public consultations took place and three sub-groups were created to study definitions of missing persons, costing issues and a funding formula. In 2006, the Federal Government indicated that it did not support a model whereby the federal government would pay for all MPI related costs. In 2007, representatives from a number of Federal and Provincial agencies met in Ottawa and participated in a process mapping exercise which produced possible model options. There has been very little further progress on the further development of an MPI reported to the Advisory Committee since that time. It is the Committee's understanding that both limited regional forensic laboratory capacity and funding issues are major challenges to the achievement of an agreement among the various jurisdictions involved. It is expected that FPT discussions on this issue will resume after the Parliamentary Committee reports (Senate and House of Commons committees) from the statutory review of the *DNA Identification Act* are published in mid to late 2009. It is the Advisory Committee's continuing view that an MPI should be national in nature and associated with or at least coordinated electronically through the NDDB.

BIOLOGY CASEWORK ANALYSIS AGREEMENTS

The Biology Casework Analysis Agreements (BCAA) were originally set up as a funding mechanism for the NDDB when it was established in 2000. They were conceived as a measure to assist the funding of the NDDB at a time when federal funding was difficult to obtain as well as an initiative to encourage the submission of crime scene profiles to the CSI in the NDDB from the Ontario and Quebec Forensic Laboratories. Under the DNA BCAA's, the RCMP Contract Provinces agreed to share, with the Federal Government, the cost of biology casework analysis arising from criminal investigations of designated offences. The federal government agreed to pay a share of the cost for biology casework analysis to Ontario and Quebec, since the

laboratories in those provinces were provincially funded and the uploading of their unsolved crime scene profiles was considered to be a critical contribution to the national NDDB program. In 2003, linkage of this agreement to the NDDB was discontinued and the RCMP received separate funding in the amount of approx. $900K to offset the cost of increased workload. The funding formula, paid from the RCMP budget, continued to provide Quebec and Ontario with increased resources (i.e., $2.3M to each Laboratory 2006/07). In addition, the RCMP Forensic Laboratory Services have also incurred some additional overhead cost associated with contractual obligations noted in the agreements for payment to Ontario and Quebec laboratories. The RCMP has not yet received permanent funding for the operation of the NDDB, approximately $3.7M in FY 2008/09. Present funding is being provided on an interim basis, year to year, from within the overall RCMP budget. The Advisory Committee has followed this issue for a number of years and has reviewed both the First and Second Evaluations of the Biology Casework Analysis Agreements conducted in 2002 and 2006 by Consulting and Audit Canada and Government Consulting Services respectively. The latter report identified a number of problems associated with the BCAA's and ultimately recommended that based on the obvious relevance and continuing success of the NDDB, the NDDB should receive permanent allocated funding. Upon expiry on March 31, 2007, the BCAA's were extended on an interim basis while the Ministry (PSC) and Provincial/Territorial officials engaged in ongoing discussions of the BCAA's. The Agreements were again extended from year to year in March 2008 and 2009. The Advisory Committee is concerned that permanent allocated funding has not yet been provided to the NDDB. Although the RCMP is committed to supporting the NDDB, it would be advantageous to provide permanent funding in order to ensure that this important national service continues with the best opportunity for success in an environment of many competing priorities. Until the funding issue is resolved, it is the Advisory Committee's view that the present arrangement is neither progressive nor effective in terms of providing long term stability to an organization which must be able to plan for rapid changes in technology and methodology over the coming years. Clearly, the NDDB must be able to look forward and prepare to conduct research, evaluate and validate new technologies and methodologies which contributing laboratories are now examining with the expectation that the data generated will be compatible with systems used

by the NDDB. The Advisory Committee is hopeful that this issue will be resolved in a progressive manner following the conclusion of the statutory review by Parliament in 2009.

SCIENTIFIC WORKING GROUP ON DNA METHODOLOGY (CANADIAN SWGDAM)

Canadian SWGDAM is presently an informal technical DNA committee with representatives from the three Canadian forensic laboratory organizations and the NDDB which process crime scene samples for the presence of DNA profiles. The Canadian group mirrors a US Department of Justice, FBI sponsored American SWGDAM group. Forensic scientists from the RCMP have sat on the US SWGDAM since 1989 and forensic scientists from both the Quebec (Montreal) and Ontario (Toronto) provincial Laboratories have attended the committee meetings for the last several years. The US SWGDAM group reviews new DNA technologies, new analytical procedures and sets standards across a large number of laboratories in the U.S.A. so as to ensure that DNA data produced by forensic laboratories is accurate, quality assured and consistent with the standards which allow for its upload into the FBI developed Combined DNA Index System (CODIS). CODIS is a computer based data system that is used to store and compare DNA profiles in the NDDB and is used in 178 labs in 50 states in the USA and 41 labs in 33 other countries around the world. At present, Canadian SWGDAM is an *ad hoc* group which meets approximately once per year in conjunction with other scientific meetings such as the Canadian Society of Forensic Science. Participation is dependent upon budgets for attendance from the various laboratory organizations.

It is the Advisory Committee's view that routine technical meetings between the three Canadian forensic organizations and the NDDB are extremely important in view of the rapidly changing technology which these organizations must study, evaluate, validate and develop interpretation guidelines and data sharing protocols. It is particularly vital that the three Canadian organizations share information on procedures and new developments in order to ensure that the final product, the DNA profile, is consistent with CODIS standards which allow for the uploading of CSI profile to the NDDB and the subsequent searching of those profiles against the

COI of the NDDB. Canadian SWGDAM representatives have met with the Advisory Committee on two occasions in relation to their interest in moving forward to formalize the Canadian SWGDAM as a formal inter organizational technical committee. The Advisory Committee is of the view that formalization of such a committee is a constructive and important initiative which can only occur through an agreement between the senior executive levels of the RCMP, Ottawa, the Centre of Forensic Science, Toronto and the Laboratoire de sciences judicairies et de médecine légale (LSJML) in Montreal which would represent a scientific consensus reflective of provincial and federal government laboratory partners. The formation of a more formalized group such as a Canadian SWGDAM Committee, with executive support, would be a significant step towards the achievement of a single governing standards and protocol group, not unlike the US SWGDAM model.

DNA Analytical Technology

Technology enhancements continue to be evaluated by the NDDB as well as biology operational forensic laboratories in the regions. Of particular interest is the consideration to introduce the use of larger multiplex STR systems (15 STRs and amelogenin) as well as enhanced procedures to gain a higher success rate for limited biological samples with a faster turnaround processing time. Also the ability to derive polymorphic discrimination exclusively from male DNA (YSTRS) is currently under limited use in Canada for forensic casework and will be reviewed for potential data entry into the NDDB. The upcoming year will see significant review and validation studies performed by the NDDB which will complement studies undertaken by forensic laboratories that process the crime scene samples.

Kinship Analysis (Familial Searching)

As noted in last year's Annual Report, it has been shown that novel searching methods could allow for the expanded use of the NDDB to aid in the identification of possible criminal suspects who may be closely related to known offenders in the COI. This type of analysis has been offered by the Forensic Science Service in the United Kingdom for several years and has led to the

successful identification and conviction of several offenders who would have otherwise remained unknown had familial searching not been pursued. This technique has also been used by some States in the USA, e.g., California and Colorado, and has resulted in the highly publicized exoneration of an innocent man who was convicted, sentenced and served 19 years in prison prior to his brother being identified as the guilty party after a kinship analysis was completed. However, it should be noted that the use of familial searching or kinship analysis for the deliberate identification of close biological relatives through DNA similarities is not presently being used by the FBI forensic laboratory. The Advisory Committee is aware that the next major upgrade to the CODIS system now being developed by the FBI will include a software component designed to permit kinship analysis primarily targeted to assist in identifying missing persons. However the same approach could be used for familial searching if the user organization wished to pursue this particular strategy in casework investigations. The use of familial searching against the NDDB is presently not authorized by DNA Legislation in Canada and was not considered by Parliament during the debates leading up to the passage of the *DNA Identification Act* since the technique was not fully developed at that time. In Canada, a modification of this technique was used regionally to solve the 2002 rape and murder of a restaurateur in Alberta. After the victim was found half naked, bloodied, stabbed more than 30 times and strangled the police obtained a suspect biological sample from the body of the victim from which a DNA profile was developed. There was no other substantial physical evidence. Police collected DNA from a group of males in the community and scientists found two partial matches, advising the investigators that a male relative of two local men might be linked to the DNA profile obtained from the victim. Upon request, the son of one of the two volunteers provided a DNA sample which was then positively matched to the DNA obtained from the victim. The individual was convicted before a jury in 2005 and sentenced to 25 years without possibility of parole. After being denied a new trial by The Alberta Court of Appeal, the offender has applied to the Supreme Court of Canada for a further hearing, which was subsequently denied. Since the *DNA Identification Act* applies only to the NDDB, the use of the partial matching of DNA profiles involving multiple biological samples is routinely used in forensic laboratories engaged in operational casework. The NDDB however, cannot release DNA

information on an individual who has been eliminated as the source of a DNA sample. From a kinship perspective, this could only currently occur at the NDDB level if a complete match of a CSI profile is made against a twin sibling in the COI, since both siblings have identical DNA profiles.

The FBI sponsored a two-day *Familial Searching and Genetic Privacy Symposium* in Arlington, Virginia, in March 2008. DNA, legal and ethics experts from USA, Canada and other countries made presentations in support of and against the use of this technique. Dr. Frederick Bieber, a member of the National DNA Data Bank Advisory Committee, provided an introductory overview of the technology. Those favouring its use outlined many examples of serious crimes which would not have been solved and suspects who would not have been exonerated had the technique not been applied. Others suggested that the United States have a moral and ethical obligation to utilize data in their criminal data banks to its best advantage in order to solve serious crimes against citizens living within their jurisdictions. Those opposing the use of this technology suggested that the technique was in a fact, a form of genetic surveillance of innocent citizens and that use of the DNA Data Banks for a technique that was neither understood nor authorized by the legislative bodies which passed their original DNA legislation, was unethical if not illegal. Considerable opposition was also expressed in relation to the apparent over-representation of certain racial minorities within the DNA Data Banks; especially the African-American and Hispanic population in the USA, the suggestion being that both minority groups would be overly exposed to a higher degree of genetic surveillance than the Caucasian population. Although the majority of the symposium attendees supported the use of familial searching to varying degrees, the majority were also of the opinion that legislative bodies should study the issue and authorize a formal process for the use of the technology within their jurisdictions.

The Advisory Committee has followed the deliberate searching and mining of forensic DNA data bases using partial DNA matches for several years and is of the general opinion that familial searching could be of benefit to the Canadian justice system if implemented through a controlled process with full recognition of the privacy rights of Canadian Citizens. Parliamentarians may

wish to consider authorizing the use of this technology only in unsolved cases falling within the 16 most grave Criminal Code offences for which DNA orders are now automatic upon conviction. Authorization requests for individual cases might therefore be channeled through to Provincial Attorneys General for approval or through a warrant process similar to the existing *Criminal Code* DNA warrant provisions.

While the Advisory Committee will continue to follow the development of this science throughout the world, it is the Committee's view that this issue should be discussed in a public forum where both the privacy rights of citizens versus the right of the state to utilize this technology in the interests of the justice system can be discussed in some depth. It is the Advisory Committee's understanding that many justice interest groups in Canada would be interested in participating in such a discussion. The House of Commons Parliamentary Committee on Public Safety and National Security has issued a report following their review of the *DNA Identification Act* in February/March 2009 and did not comment upon this technology. The issue was also raised before the Standing Senate Committee on Legal and Constitutional Affairs during March/April 2009 and their review is still ongoing. The Advisory Committee will continue to follow this issue as it progresses in countries where the use of the technology is authorized.

INTERNATIONAL AGREEMENTS, G-8 SEARCH REQUEST NETWORK (SRN) PROJECT

The G-8 International DNA Sharing Project was initiated by the G-8 countries to identify the technical and legal barriers that exist with the international exchange of DNA data. The G-8 Technical Working Group was assigned the task of developing recommendations to make the sharing of DNA information more effective. Two international groups (Prum Treaty Working Party 1, and Interpol,) have all identified requirements for an international exchange system but are based on different sharing concepts. At present there are limited common elements between the various DNA technologies employed to create the relevant data associated to a DNA profile to make for effective comparisons. It is also problematic for many countries to export their

domestic reference DNA profiles for comparison but many countries are able to export their unsolved crime scene profiles for comparison with the profiles in another countries DNA data base. However to effectively do this, the exchanges should be in an electronic format. An agreed upon electronic format standardization would lead to a greater use of international exchanges to determine if there were DNA profile matches that could assist in investigations. Existing information exchange systems could then be used to share non-DNA relevant information such as crime scene information, missing persons profile and unknown deceased information if such exchanges purposes are permitted according to the domestic laws of each country who may be exchanging profiles for comparison.

At present, discussions have led to consideration of developing a common agreement between the G-8 countries to standardize electronic use and retention restrictions and identification of DNA profiles that they transmit. Should the G-8 Search Request Network (SRN) Project prove beneficial then consideration could be given to expanding the SRN to be administered by a third party such as Interpol so all countries could benefit from this approach. The development and acceptance of an agreement is slow and challenging due to the need to develop an electronic format for the exchange of information and acceptance of a common standard technical language that will regulate the source, use, retention and security of the information. Until an electronic based SRN agreement is reached, DNA data exchanges will continue by way of the existing Bilateral Agreements that are already in place and are based on a paper or fax transmission.

STATUTORY REVIEW OF THE DNA IDENTIFICATION ACT

Commencing February 2009, the Standing Committee on Public Safety and National Security (House of Commons) and the Standing Senate Committee on Legal and Constitutional Affairs (Senate) commenced the Statutory Parliamentary review under section 13 of the *DNA Identification Act* (previously known as the Five Year Review).

Witnesses to appear before The Standing Committee on Public Safety and National Security (SECU) who are associated with the NDDB AC follow:

February 24, 2009 - Dr. Fourney, Greg Yost, David Bird, Richard Bergman, the Honourable Peter Cory;

February 26, 2009 - Ms. Chantal Bernier and Lisa Campbell, Office of the Privacy Commissioner of Canada;

April 28, 2009 - Representatives from Centre of Forensic Science (CFS) in Toronto and Laboratoire de sciences judiciaries et de médecine légale (LSJML) in Montreal.

Copies of the transcripts from the House of Commons can be found at:

http://www2.parl.gc.ca/CommitteeBusiness/CommitteeHome.aspx?Cmte=SECU&Language=E&Mode=1&Parl=40&Ses=2

Witnesses to appear before The Standing Senate Committee on Legal and Constitutional Affairs associated with the NDDB AC follow:

March 25, 2009 - Dr. Ron Fourney (Forensic Science & Identification Services, RCMP);

March 26, 2009 - Greg Yost (DOJ), David Bird (RCMP Legal Services and DOJ Canada), Dr. Ron Fourney;

April 2, 2009 - Richard Bergman and the Honourable Peter Cory;

April 22, 2009 - Ms. Chantal Bernier and Mr. Carman Baggaley, Privacy Commissioners Office.

Copies of the transcripts from the Standing Senate Committee on Legal and Constitutional Affairs can be found at:

http://www.parl.gc.ca/common/Committee_SenProceed.asp?Language=E&ParlQ=40&Ses=2&comm_id=11

The Advisory Committee members who appeared as witnesses before the Standing Committees were impressed by the level of knowledge and the specificity of many issues raised by members of both Standing Committees. One issue which required clarification relates to the governance of

the NDDB as compared to that of the RCMP Regional forensic laboratories. The regional forensic laboratories of the RCMP provide forensic laboratory service to those provinces which are policed through policing contracts with the Federal Government just as the Centre of Forensic Science in Toronto and the Laboratoire de sciences judiciaries et de médecine légale (LSJML) in Montreal provide forensic laboratory services to Ontario and Quebec respectively. The NDDB, however, operates in Ottawa as a National Police Service to all forensic laboratories and police agencies across Canada. The NDDB operates as a separate entity and its governance is structured within the RCMP to reflect its independence from the regional RCMP operational forensic laboratories.

It was noted that during the appearance by Mr. Bergman and Mr. Cory before the Standing Senate Committee, a question was raised by the Senate Committee regarding the retention of young offenders within the NDDB. Specific reference to an Ontario court case was made by the Senate Committee. The NDDB Advisory Committee was advised that a review was being conducted to determine whether the NDDB is complying with the DNA Identification Act with respect to the removal of DNA profiles and destruction of samples from young offenders. Based on preliminary results provided to the NDDB Committee, the Advisory Committee is satisfied that the NDDB is operating in compliance with the *DNA Identification Act.* The Committee members felt strongly that following the completed review and reply to the Senate Committee, it was important that these findings be released in a manner that corrects any mis-conception that may exist as a result of the question raised in the Senate Committee hearing. The Advisory Committee has asked for a copy of the correspondence to the Senate Committee once it has been received by the Senate Committee.

CONCLUSIONS

The Advisory Committee has now been monitoring the operations of the NDDB for over nine years. During that time, the Committee has met with representatives of the NDDB, members of the judicial community, international DNA scientists and users of the system in Canada. It continues to be the view of the Committee that while the NDDB is fulfilling its role effectively

and operating appropriately within the provisions of the DNA Identification Act and associated Regulations, the lack of a permanent A- Base funding strategy is a limiting factor in terms of the Data Bank's ability to maintain a full staff complement as well as plan for and evaluate new technologies. As the Data Bank is now growing rapidly following the passage of Bills C-13/ C-18 and may grow even more rapidly if DNA Orders become automatic upon conviction for all designated offences, the evaluation and validation of new multiplex (15 loci plus amelogenin) DNA analytical systems and Y-STR technologies is extremely important. The new technologies will not only increase the analytical efficiency of the Data Bank but also improve the discriminatory power of the DNA profile comparison process. While the Committee's mandate does not include the regional forensic laboratories which contribute DNA profiles to the CSI of the NDDB, the output from those laboratories does have a direct bearing upon the ultimate success of the NDDB, i.e., the number of matches between the CSI and the COI. Any action taken by the Federal and or Provincial Governments to improve the throughput of these laboratories will have positive effect upon success of the NDDB.

GUEST SPEAKERS (MAY 2008 - MAY 2009)

David Bird	RCMP Legal Counsel
Melad Botros	Public Safety Canada
Joseph L. Buckle	Chief National Police Services
Lisa Campbell	Office of the Privacy Commissioner
Paula Clarke	Department of Justice
Michael Dale	RCMP Legal Services (Observer)
Roger Frappier	Centre of Forensic Sciences, Toronto
A/Commr. Peter Henschel	Director General FS&IS
Sylvian Lalonde	National CODIS Manager (NDDB)

Allain Lauzon	Public Safety Canada
Jeff Modler	FS&IS Biology Services - Canadian SWGDAM
Dave Morissette	Acting Officer i/c, National DNA Data Bank
Kelly Morton-Bourgon	Department of Justice (DOJ)
Lyndon Murdock	Public Safety Canada
Diane Séguin	Assistant Director Biology/DNA Operations, LSJML
Jennifer Seligy	Office of the Privacy Commissioner
Marc Taschereau	Public Safety Canada
Isabelle Trudel	National DNA Data Bank - On special assignment
Greg Yost	Department of Justice (DOJ)

FINANCIAL HIGHLIGHTS

Financial Report May 2008 - May 2009			
Dates	**Expenses**	**Budget**	**Balance**
2008 October 30-31	**$ 10,732.08**		
2009 April 30-May 1	**$ 10,381.55**		
Total	**$ 21,113.63**	**$50,000.00**	**$28,886.37**