THE NCE
SELECTION COMMITTEE
REPORT
January 2001

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REMARKS FROM THE CHAIR

As a result of the call for applications for new Networks of Centres of Excellence in January 2000, the Networks Centres of Excellence (NCE) Directorate received 15 applications in the following targeted areas:

- The Automobile of the 21st Century
- Genomics Technologies and Society
- Meeting the Environmental Challenges for Clean Water
- Early Child Development and its Impact on Society

The NCE Selection Committee was directed to select excellent proposals and rank them in each of the four categories;

In a first phase, in May 2000, the Selection Committee reviewed fifteen Letters of Intent and recommended that eight be invited to submit full proposals. In a second phase, in January 2001, the Selection Committee reviewed carefully these eight full proposals, and identified the excellent ones within each category.

This entire process, from the announcement of the competition to the recommended awards, occurred over a period of a little more than 12 months.

The NCE Selection Committee included members from all regions of Canada as well as expert international participants. Considerable interest in this targeted competition from all regions of the country was clearly evident as was the participation of industrial, commercial and community sectors in proposed NCE submissions. It was encouraging to see the extent to which multidisciplinary approaches to research themes within the NCE program has grown and matured.

The excellence of research was the pre-eminent consideration of the committee throughout the entire process. As well, the Selection Committee devoted considerable attention to ensure that proposals included detailed descriptions of how they would organize and deliver training, networking, partnerships and management of their activities.

The NCE Selection Committee is confident that all of the recommended NCE proposals will create an order-of-magnitude improvement in the capacity of Canadian research institutions to generate social and economic value within our society. As well, we anticipate that Canadian leadership within the world community will be enhanced through the recommended awards.

While the targeted awards approach helps to focus public investment in strategic research, it increases the challenges to the Selection Committee to balance a commitment to excellence with competing sectoral and budgetary criteria. The

committee members were singularly committed to the principle of excellence that serves as the hallmark of the NCE program. I am grateful to the members of the Selection Committee for this as well as for their dedication, collegiality and commitment to the goals of the NCE program. Equally, the staff of the NCE offers a standard of professionalism, integrity and service that does credit to the entire process.

The NCE program is not about winners and losers in a competition. Those proposals that were successful this time will doubtless add knowledge and value to the social and economic lives of Canadians. Those other submissions that did not receive an award in this round of considerations have already created value in the new networks that have been formed. They will doubtless re-emerge as successful proposals in future program areas within the NCE or other frameworks. It has been a privilege to serve as the Chair of the NCE Selection Committee.

Richard Fuchs
Chair
NCE Selection Committee 2001

BACKGROUND

The Networks of Centres of Excellence (NCE) program seeks to mobilize Canada's best research talent in the university, private and public sectors and apply it to the task of developing the economy and improving the quality of life of Canadians. Networks are selected on the basis of their excellence in research, their inclusion of the best cross-country talents, the extent of their partnerships with the receptor community and their potential for socio-economic benefits. Industry Canada and the three granting agencies (the Natural Sciences and Engineering Research Council, the Canadian Institutes for Health Research and the Social Sciences and Humanities Research Council) jointly manage the program.

Since its inception in 1989, the NCE program has been linking Canadian researchers from the university, public and private sectors to work collaboratively on the advancement of research on the development of new technologies. Networks provide opportunities to develop innovative research approaches that cross traditional disciplinary and sectoral boundaries, and promote collaborations among social, physical and medical scientists and engineers. These collaborations have contributed significantly to speeding up the uptake new knowledge and technologies by the industry and other receptor communities and have led to important socio-economic benefits.

The 1999 Federal Budget provided a $30M annual increase to the NCE program which has allowed the program to run two competitions. The first, an open competition was held in 1999-2000 and has resulted in the launch of three new Networks. The second, a targeted competition in four strategic areas, is the subject of this present document.

The call for applications for this year 2000 targeted competition was issued on January 12, 2000 by the Government of Canada to establish new Networks of Centres of Excellence in the following areas:

- The Automobile of the 21st Century;
- Genomics Technologies and Society;
- Meeting Environmental Challenges for Clean Water; and
- Early Child Development and its Impact on Society

New NCEs targeted in these research fields will help fulfil the Government's promise, outlined in the Throne Speech, to strengthen Canada's commitment to children and the environment and to expand Canada's expertise in areas like advanced engineering and genomics. Research that could be supported by networks in these new target areas is described in Appendix II.

Information sessions for prospective applicants were held in March, 2000 across Canada (in Montreal, Toronto, Ottawa, Halifax, Calgary and Vancouver). A total of 21 other cities were also linked through videoconference.

University researchers and their private and public sector partners were invited to present Letters of Intent by May 1, 2000; 15 Letters of Intent were received and the NCE Selection committee met on May 25-26 to complete its review and prepare its recommendation to the NCE Steering Committee. As a result eight applications were retained and applicants invited to submit a full application by October 2, 2000.

The NCE program follows a rigorous peer-review process to evaluate, first the Letters of Intent, and later on the full proposals, against the five criteria of the program:

- Excellence of the Research Program
- Development of Highly Qualified Personnel
- Networking and Partnerships
- Knowledge Exchange and Technology Exploitation
- Management of the Network

Criteria are detailed in Appendix I. Committee mandate, membership and short biographical notes of the committee members can be found in appendices III, IV and V respectively. In a targeted competition, such as this one, the proposals are evaluated against the five criteria, and in the context of their target area.

Each full proposals is also subjected to a site visit by an Expert Panel responsible for performing an in-depth evaluation of the strengths and weaknesses of the proposed Network. The individual Expert Panel reports are submitted to the Selection Committee and are used in elaborating the final recommendation to the NCE Steering Committee.

The Selection Committee's recommendation is summarized in the next section.

The schedule for the targeted competition will enable successful groups to receive funds before March 31, 2001.

COMPETITION PROCESS

January 12, 2000	Announcement of the 2000 targeted competition for new networks in the NCE program.
February 2000	Information sessions on the NCE Targeted Competition 2000.
May 1, 2000	Deadline for submission of Letters of Intent.
May 25 – 26, 2000	Meeting of the NCE Selection Committee to review letters of intent and select applicants to be invited to submit full applications.
October 2, 2000	Deadline for submission of full applications.
October- November, 2000	Expert Panel Meetings with each invited group.
January 15-16, 2001	Meeting of the NCE Selection Committee to review the full applications and make final recommendations on funding to the NCE Steering Committee.
January 26, 2001	Meeting of the NCE Steering Committee to review funding recommendations of the NCE Selection Committee and make a final decision.
February 2001	Public Announcement of Awarded Networks.
March 2001	New Networks receive first funding.

NCE SELECTION COMMITTEE RECOMMENDATIONS

The Committee has identified the top proposals that meet the threshold of excellence for the NCE Program. Within the four targeted areas, the following proposals were ranked highest.

Title	Target Area	Leader Name	Host Institution
Canadian Water Network	Clean Water	Gillham R.W.	University of Waterloo
Language and Literacy	Early Child Development	Jamieson D.G.	University of Western Ontario
The Automobile of the 21st Century - AUTO21	Automobile of the 21st Century	Frise P.R.	University of Windsor
The Stem Cell Genomics and Therapeutics Networks	Genomics Technology	Worton R.	University of Ottawa

The Committee also identified a fifth proposal, within the Genomics Technology targeted area, that met the excellence threshold and recommends that funds or other avenues be located to support this proposal.

In the case of certain recommended applications, conditions of award have been defined and are included in the letters of offer to the host institutions. The Committee has asked the NCE Steering Committee to review the budgetary recommendations made by Expert Panels and apply them within the context of available resources to the recommended applications.

SUMMARY OF THE NETWORKS RECOMMENDED FOR FUNDING

Canadian Water Network

Canada possesses 9% of all the fresh water in the world. For many years, Canada has maintained an enviable international reputation as a leader in water resource management. Unfortunately, our research and management capacity has not kept pace with rapidly changing social, economic and technical needs. Questions concerning effects of global climate change, declining water levels in central Canada, outbreaks of emerging pathogens and the long-term effects of changing land use all need urgent attention.

The Canadian Water Network (CWN) seeks to:

- ensure Canada's pre-eminent role in the management and sustainable use of water resources;
- preserve access to clean water;
- protect the health of Canada's people and ecosystems; and
- support the Canadian economy.

The network will focus on six key research areas: Policy and Governance, Water Resource Management, Drinking Water and Health, Wastewater Management, Infrastructure, and Groundwater and Sediment Protection.

The Canadian Water Network is well positioned to contribute significantly to the three pillars of the Federal Science and Technology Strategy: sustainable job creation and economic growth, improved quality of life, and advancement of knowledge.

CLLRnet : The Canadian Language and Literacy Research Network

Communication and literacy skills provide the foundation for effective social functioning and for academic, occupational/economic and life success. When children fail to develop good language and reading skills there are a range of profound and enduring consequences, including academic failure and dropping out of school, poor psycho-social development, and reduced self esteem and sense of well-being. All of these reduce the opportunities for lifelong success.

Good language and literacy skills are also essential to the economy. Employers state that their top three employee requirements are good communication skills, the ability to learn, and literacy. Unfortunately, recent Statistics Canada reports indicate that more than 20% of Canadian high school graduates lack the literacy skills needed for entry-level jobs and experience difficulties reading even simple texts for comprehension. Another 25% of Canadians can read only simple printed material.

CLLRNet will combine the expertise of researchers at universities in most Canadian provinces to improve language and literacy skills. The focus will be on children, so that improvements occur early in life and allow academic, social, economic and personal benefits to accrue over a lifetime.

AUTO21 – The Automobile of the 21st Century

The automotive industry is Canada's largest single business sector, producing over 13% of the manufacturing GNP and providing high quality employment to over half a million Canadians (I in 7 jobs). This $200 billion per year giant is Canada's largest source of export earnings and is considered by many to be the engine of our economy. Canada is the sixth largest producer of cars and trucks in the world. Without advanced R&D, Canada's auto industry will not be able to compete with the latest developments internationally, with the result that the hundreds of thousands of jobs will be less secure.

The AUT021 Network will undertake an extensive and integrated research program examining the following issues:

- vehicle safety for children and the elderly
- the health and safety of autoworkers
- the formulation of stronger public policies in the automotive sector
- new manufacturing processes and materials for future automobiles
- new fuels and power-trains
- the integration of advanced electronic systems to improve safety, comfort and convenience

Over 200 of Canada's best researchers from universities, companies, government laboratories and other organizations are participating. Their areas of expertise include engineering, nursing, economics, labour studies, occupational therapy, science, business and other disciplines. They will co-operate to tackle the challenges confronting the automotive industry such as the people who work in it; the communities where it is situated; and, the interaction between the industry and Canadian society at-large.

Stem Cell Genomics and Therapeutics Network (StemNET)

Stem cells play a critical and essential role in the human body, providing the starting material for every organ and tissue. Those in one compartment of the body can be used for tissue repair or regeneration in another part of the body. Diseases that may be amenable to stem cell repair and regeneration include muscular dystrophy, retinal degeneration leading to blindness, Alzheimer's, Parkinson's, arthritis, osteoporosis, and serious disorders of the blood-forming system.

STEMNet is a bold new venture for Canada, bringing together more than 50 basic scientists, clinical scientists, engineers, and social scientists to:

- explore the social, ethical, legal and policy issues inherent in stem cell research and therapeutics, and
- develop new therapies for chronic diseases.

The NCE Directorate expects STEMNet to lead in the examination of social and ethical dimensions of stem cell technology. STEMNet 's Board of Directors will develop a process and define social and ethical criteria by which it will evaluate, select and terminate its projects. STEMNet will also abide by the guidelines being developed by the Canadian Institutes of Health Research *ad hoc* Working Group on Stem Cell Research.

In line with social and ethical considerations, stem cell therapeutics will be brought to the marketplace through a number of industrial partnerships with biotechnology companies, pharmaceutical companies, and health charities.

By creating a Canada-wide network, STEMNet will meet the objectives of the Federal Science and Technology strategy for sustainable job creation and economic growth, improved quality of life, and advancement of knowledge.

APPENDIX I

SELECTION AND EVALUATION CRITERIA

SELECTION AND EVALUATION CRITERIA

To ensure that the program objectives are met, proposals are assessed against the five criteria outlined below. Networks are also evaluated on an ongoing basis during tenure of a grant against these same criteria. A threshold of excellence must be exceeded for each criterion. The quality of research is considered first and, unless it is deemed excellent, the network is denied NCE funding. In other words, research excellence is a necessary condition for the initial or continued funding of an NCE. It is not the sufficient condition, because the goals of the program are also reflected in the four additional criteria.

The descriptors of the five criteria are given below for the guidance of applicants. They are not all-inclusive.

Excellence of the Research Program

- The excellence, focus and coherence of the research program;
- The achievements of the researchers and their ability to contribute to the research program;
- The value added by the network approach, in terms of the quality of the research and achievement of the goals that can be pursued;
- The extent to which the program will contribute to Canada's ability to lead in areas of research with high economic and/or social impact;
- The extent to which new and emerging social and ethical issues, where relevant, will be addressed in the research program;
- The relationship of the research program to similar work conducted in Canada and abroad**.**

Development of Highly Qualified Personnel

- The ability to train and retain outstanding researchers in research areas and technologies critical to Canadian productivity, economic growth, public policy and quality of life;
- Training strategies that promote multidisciplinary and multisectorial research approaches and encourage trainees to consider the economic, social and ethical implications of their work.

Networking and Partnerships

- Effective research and technology development links between academic institutions, federal and provincial agencies and private sector participants;
- Multidisciplinary, multisectorial approaches in the research program;
- Evidence that an effort has been made to include all suitably qualified groups;
- Optimization of resources through the sharing of equipment and research facilities, databases and personnel;

- Presence, nature and extent of contributions from the private sector and federal and provincial agencies, and prospects for increasing commitments as the work progresses.

Knowledge Exchange and Technology Exploitation

- Likelihood that new products, processes or services can be commercialized by firms operating in Canada and that they will strengthen the Canadian industrial base, enhance productivity, and contribute to long-term economic growth and social benefits;
- Prospect for social innovation and the implementation of effective public policy through collaboration with the public sector;
- Effective collaboration with the private and public sectors in technology, market development, and public policy development;
- The impact, or potential impact, on the partners' science and technology capabilities;
- Effective management and protection of intellectual property resulting from network-funded research.

Management of the Network

Each network must possess an organizational structure appropriate for the management of the research and business functions of a complex multidisciplinary, multi-institutional program. These elements must include:

- A board and committee structure to ensure that appropriate policy and financial decisions are made and implemented;
- The presence of effective leadership and expertise in the research and the business management functions;
- Effective research planning and budgeting mechanisms;
- Effective internal and external communications strategies.

APPENDIX II

DESCRIPTION OF THE 2000 COMPETITION TARGET AREAS

DESCRIPTION OF THE 2000 COMPETITION TARGET AREAS

NETWORKS OF CENTRES OF EXCELLENCE (NCE)

1. The Automobile of the 21st Century

Research in this target area will extend Canada's capability to contribute to the development and use of increasingly efficient, safe and environmentally-friendly automobiles in response to new design criteria (e.g., emission level reductions) which are re-shaping the industry. Research on product and process technologies critical to the development of the Automobile of the 21st Century might include:

- emission reduction technologies and practices;
- post-combustion era propulsion development;
- safety improvements, including road safety and injury prevention; and
- technologies to improve related design and manufacturing processes.

A network in this target area could improve Canadians' health, accelerate the rate at which Canada achieves emission-reduction targets and increase the participation of Canadian industry in opportunities to be generated by changes in the automotive sector in the 21st century.

2. Genomics Technologies and Society

Research here will help Canada respond to biotechnology opportunities in the global, knowledge-based economy and will improve our understanding of the critical issues for society as related technologies are developed and introduced. A genomics network integrating basic and applied research across academic disciplines might address:

- geno-typing;
- functional genomics;
- proteomics;
- bio-informatics; and
- the ethical, legal and social implications of related technologies.

A network in this target area could enable Canada to develop and exploit knowledge of genomics for social and economic benefits in areas such as agriculture, aquaculture, environment, forestry and health.

3. Meeting the Environmental Challenges for Clean Water

Research in this target area will strengthen Canada's international leadership role in addressing environmental challenges to manage and preserve access to clean water. Interdisciplinary research areas for a clean water network might include:

- technologies to reducing and monitor water pollutants;
- management of freshwater resources, including water supply and distribution;
- wastewater management; and
- health, social and economic impacts of water quality.

A network in this target area could broaden Canadian expertise in the effective management of water resources and could preserve or improve our environment through the development of innovative technologies. It could also increase the health and socio-economic benefits derived from clean water resources.

4. Early Child Development and its Impact on Society

Research in this target area will address factors that will influence the ability of children to develop to their full potential. Interdisciplinary research in this network might address the impact on child development of areas such as:

- access to knowledge and learning opportunities;
- environmental and genetic factors;
- security of family, social and physical environments;
- nutrition;
- socio-economic conditions; and
- biological processes (e.g. pregnancy, fetal development, early child diseases).

A research network in this target area could contribute toward building a more inclusive, cohesive and supportive society and lead to a healthier, better-educated and more productive population.

APPENDIX III

TERMS OF REFERENCE FOR THE NCE SELECTION COMMITTEE 2000

TERMS OF REFERENCE FOR THE NCE SELECTION COMMITTEE 2000

The Selection Committee is responsible for:

- Reviewing NCE Letters of Intent and selecting groups of applicants to be invited by the NCE Steering Committee to submit a full NCE application (May 2000);
- Drafting confidential evaluation reports for all LOIs submitted in the competition (May 2000);
- Reviewing invited applications and Expert Panel reports (November-December 2000);
- Transmitting to the NCE Steering Committee a list of networks recommended for funding, with the recommended duration and level of award for each network (January 2000);
- Drafting confidential evaluation reports for all invited applications submitted in the competition (January 2000);
- Drafting the Chair's Remarks and NCE Selection Committee Recommendations to be included in the NCE Selection Committee's Public Report which provides the rationale for the recommendations along with a summary analysis of each application.

APPENDIX IV

MEMBERSHIP OF THE NCE SELECTION COMMITTEE

MEMBERSHIP OF THE NCE SELECTION COMMITTEE

NCE SELECTION COMMITTEE
Letter of Intent Stage
May 25-26, 2000

Richard Fuchs (Chair)
President
Futureworks Inc.
Torbay, NF

Bill Cheliak
President,
Progressive Genetics Systems Ltd
Ottawa, ON

David Owen
Director
Industrial Collaboration & Licensing Technology
Transfer Group
London, WIN
UK

Mark W. Rosenberg
Professor,
Dept. of Geography
Queen's University
Kingston, ON

David B. Shindler
President and CEO,
Milestone Medica Corporation
Toronto, ON

Bruce Smith
Chairman
Smith Institute
Guildford, SURREY
UK

James Bruce
Senior Associate
Global Change Strategies International, Inc
Ottawa, ON

Hani Henein
Director
Advanced Materials and Processing Laboratory
University of Alberta
Edmonton, AB

Sylvie Marcoux
Vice-doyenne à la recherche et
aux études avancées
Université Laval
Montréal, QC

Francine Mayer
Professeure
Département des sciences biologiques, UQAM
Montréal, QC

Lisa Serbin
Director
Centre for Research in Human Development
Concordia University
Montréal, QC

Dr. Shoo Lee
Director
Centre for Community Health and
Health Evaluation Research
Vancouver, BC

NCE SELECTION COMMITTEE
January 15 – 16, 2001

Richard Fuchs (Chair)
Director
Information and Communications Technology for Development
International Development Research Centre
Ottawa, ON

James Bruce
Senior Associate
Global Change Strategies International, Inc.
Ottawa, ON

Bill Cheliak
Vice President
Business Development and Alliances
Supratek Pharma Inc.
Montreal, QC

E. Paul Hart
Professor
Faculty of Education
University of Regina
Regina, Saskatchewan

Hani Henein
Director
Advanced Materials and Processing Laboratory
University of Alberta
Edmonton, AB

Shoo Lee
Co-Director
Centre for Community Health and Health Evaluation Research
Children's & Women's Health Centre of British Columbia
Vancouver, B.C

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Francine Mayer
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David Owen
CEO
Medical Research Council Technology
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Mark W. Rosenberg
Professor
Department of Geography
Queen's University
Kingston, ON

David B. Shindler
President and CEO
Milestone Medica Corporation
Toronto, ON

Bruce Smith
Chairman
Smith Institute
Guildford, SURREY
UK

APPENDIX V

BIOGRAPHICAL NOTES OF THE NCE SELECTION COMMITTEE MEMBERS

Biographical Notes of the NCE Selection Committee Members

Richard Fuchs
Director, Information and Communications Technology for Development with Canada's International Development Research Centre in Ottawa.
A sociologist, Richard Fuchs lived and worked in Newfoundland for 28 years as the President of his own start-up IT company, Futureworks Inc., a Commissioner with the Economic Recovery Commission and an Adjunct professor of Sociology at Memorial University.

James Bruce
Senior Associate of Global Change Strategies International, Inc. and Canadian Policy Representative of the Soil and Water Conservation Society.
James Bruce's 40-year-plus career has been in the fields of meteorology, climate, water resources, disaster mitigation, and environment in senior executive positions within the Canadian Government and UN organizations. From 1986-1989, he was Director of Technical Cooperation and Acting Deputy Secretary-General of the World Meteorological Organization, Geneva. He recently completed terms as co-chair of the Intergovernmental Panel on Climate Change (IPCC) Working Group III on economics, and as chair of the Canadian Climate Program Board. He is now vice-chair of the Board of the International Institute for Sustainable Development. He has been made an Officer of the Order of Canada, an honorary Doctor of Environmental Science by the University of Waterloo, and a Fellow of the Royal Society of Canada. Recent awards include the IMO Prize of the World Meteorological Organization and the Massey Medal of the Canadian Geographical Society.

W.M. (Bill) Cheliak
Vice President, Business Development and Alliances, Supratek Pharma Inc. in Montreal, QC
Bill Cheliak obtained a PhD in Genetics at the University of Alberta in 1982, and has worked in both the government and private sectors in research and in management. From the mid-1980s to mid-1990s, he worked in the areas of forest biotechnology research and management, and was involved with teams responsible for successfully developing somatic embryogenesis and a transformation system for conifers, as well as a reliable transformation system for the spruce budworm and a viable bio-control system, based on baculoviruses, for the Gypsy Moth. Much of this base technology has been implemented in forest improvement and protection programs around the world. In the mid-1990's, Dr. Cheliak was responsible for establishing DNA vaccines at Cobequid Life Sciences, a publicly traded Canadian biotechnology company specializing in aquaculture and veterinary health care products. He has served as member and Chair on numerous grant selection committees for the Natural Sciences and Engineering Research Council (NSERC) and the Canada Foundation for Innovation (CFI) and as Editor of the *Canadian Journal of Forest Research* from 1991 to1995.

E. Paul Hart
Professor, Faculty of Education, University of Regina.
An expert and teacher of thinking qualitative research methods and science and environmental education, Paul Hart serves as Executive Editor of the *Journal of Environmental Education*, and as Advisory Editor for international journals in Education. The recipient of numerous SSHRC research grants and provincial grants, he also served as Chair and member of SSHRC and the Australian Research Council selection committees, and consultant to provincial governments (Yukon, Saskatchewan) Environment Canada, the National Education Steering Committee for the Climate Change Action Fund, the Canadian Water Resources Association, World Wildlife Fund and UNESCO.

Hani Henein
Professor and Director of the Advanced Materials and Processing Laboratory, University of Alberta.
An expert in engineering, metallurgy and materials process, and particulate process engineering, Hani Henein sits on numerous editorial boards. He was the Editor-in-Chief for the *Canadian Metallurgical Quarterly* and a Past President of the Metallurgical Society of CIM. He has been visiting professor at the "Grande École Supérieure des Mines" (France), McMaster University and the University of Alabama (USA). Dr. Henein has chaired an NCE expert panel, has been chair and member of NSERC selection committees, and over 30 other committees and/or societies, member of the Chemical & Metallurgical Engineering Reallocations Steering Committee for NSERC in 1997, and the NSERC Advisory Group on Materials Research in 1998. Dr. Henein has acted as a consultant for over 20 companies.

Shoo Lee
Co-Director, Centre for Community Health and Health Evaluation Research, Children's & Women's Health Centre of British Columbia.
Trained in Medicine (MBBS – Singapore), Pediatrics (FRCPC – Royal College of Physicians of Canada) Neonatal-Perinatal Medicine (Diploma – American Board of Pediatrics), Health Policy & Mgmt (PhD – Harvard University), Shoo Lee has both Canadian and American Medical certifications. Since 1995, he has been Assistant Professor in the Department of Pediatrics, UBC, and, since 1999, is Co-Director of the Centre for Community Health & Health Evaluation Research (CCHHER). He sits on Public Advisory Committees such as the Advisory Committee, Evaluation & Research and Acute/Rehab Care Review committees for the Vancouver/Richmond Health Board, Technology Centre of the British Columbia Institute of Technology, and the Tzu-Chi Institute for Alternative and Complementary Medicine. Dr. Lee is Coordinator of the Canadian Neonatal Network (17 hospitals). He has been a visiting lecturer in hospitals in China and the USA, and receives research funding from various sources, mainly MRC, CIDA, and the HSC Foundation.

Sylvie Marcoux
Vice-Dean, Research and Graduate Studies, Faculty of Medicine, Université Laval.
An expert in epidemiology, social and preventive medecine and perinatology, Sylvie Marcoux was director of the Epidemiology Research Group at Université Laval and sat on numerous boards, steering and advisory committees and expert panels such as for the Fonds de la recherche en santé du Québec (FRSQ), Medical Research Council and National Health Research and Development Program (NHRDP). Dr. Marcoux is Vice-President and member of the executive committee of FRSQ and has collaborated with various departments on issues regarding preventive medicine.

Francine Mayer
Professor, Biological Sciences Department, Université du Québec à Montréal (UQAM).
An expert in anthropology, genetic demography, population genetics, human ecology, and historic and social history, Francine Mayer is Director of the Laboratory of Multidisciplinary Research on Human Population Dynamics and Associate Researcher with CINBIOSE (Centre d'étude sur les interactions biologiques entre la santé et l'environnement) of UQAM. She has supervised more than 30 students, has more than 50 publications, and has produced around 30 technical reports and studies. She has also been a consultant for various departments and agencies.

David Owen
Chief Executive Officer of Medical Research Council Technology, established to manage the exploitation of research findings from MRC Institutes and Units.
Prior to joining the MRC in 1990, David Owen spent twenty years in research and development in the pharmaceutical industry (Group Director, Biology, and then Group Director, Compound & Technology Acquisitions, SmithKline & French). He is the sole inventor on a key patent for a drug marketed for the treatment of Parkinson's disease. Dr. Owen is a founding member of the Board of Directors of a number of MRC "spin-off" companies, including: Therexsys Ltd., Prolifix Ltd., RiboTargets, Ardana Biosciences Ltd., Aeres Biomedical Ltd., Avidis S.A. and D-Gen Ltd. MRC exploitation income has risen from £453k in 1987/8 to almost £18million in 2000/1. He led the creation of the MRC-sponsored venture capital fund, UK Medical Ventures, and was Chairman of the fund General Partner, MVM Ltd., for the first three years. He is a member of the governing body of EMBLEM A.G., the technological exploitation company of the European Molecular Biology Laboratory in Heidelberg, is Chairman of the Cardiff Partnership Fund Ltd., (University Challenge) and is currently the first President of the Association of Science and Technology Transfer Professionals (ASTTP). Dr. Owen has served on Government committees in the UK, USA and Canada. In July 2000, he was formally appointed, by the UK Treasury and the Office of Science and Technology, as "champion" of Public Sector Research Establishment exploitation. He is a member of the Treasury Partnerships UK Advisory Council.

Mark W. Rosenberg
Professor in the Department of Geography at Queen's University.
After teaching at the University of California at Los Angeles, the University of Ottawa and Carleton University, and working with Angus Reid and J.F. Hickling Management Consultants, Mark Rosenberg joined Queen's University in 1985, in the Geography Department. He also taught in the School of Policy Studies. His major research interests are focused on women's health, the elderly population, persons with disabilities, and the organization of, and access to, health care and social services. Dr. Rosenberg is currently working on a 3-year study of the "geographies of women's health" funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) and organizing a set of international workshops on "health and the environment" funded by the International Council of Scientific Unions (ICSU), the United Nations Environment Programme (UNEP) and SSHRC. He has just completed a 4-year study of seniors' independence funded by Health Canada and is co-author of the recently published book, *Growing Old in Canada*. Dr. Rosenberg is currently the Chairperson of the Social Science Division of the Canadian Association on Gerontology, Secretary of the International Geographical Union Commission on Health, Environment and Development, and Chairperson of the Association of American Geographers Medical Geography Specialty Group.

David B. Shindler
President and CEO of Milestone Medica Corporation, Toronto, a national venture development company specializing in early-stage biomedical technology investment and management.
David Shindler's research expertise is in the field of microbiology and biochemistry. Between 1990 and 1997, he served as Senior Executive and Commercial Director of the Canadian Genetic Diseases Network (CGDN), an internationally recognized trans-Canada consortium of leading researchers and industrial partners, core funded by the federal Networks of Centres of Excellence program. During his tenure with CGDN, he led and negotiated technology deals that resulted in major new start-up ventures and pharmaceutical alliances. From 1988 to 1990, he served as Counsellor - Science and Technology at the Canadian High Commission in London, UK. Between 1980 and 1988, Dr. Shindler was employed by Industry, Science and Technology Canada as Manager of Canada's National Biotechnology Strategy and Secretary to the Federal Science Minister's National Biotechnology Advisory Committee. Between 1974 and 1980, he was a research scientist at the National Water Research Institute, Burlington, Ontario. He currently serves as Director of several companies, BIOTECanada, and BIRC, and recently served on the Steering Committee of Genome Canada.

Bruce Smith
Chairman of the Council of Smith Institute for Industrial Mathematics and System Engineering, a collaboration between industry and academia in applied mathematics and computing, and Chairman of Industrial Technology Securities Limited, a venture capital company.

Bruce Smith was until recently the Chairman and majority shareholder of Smith System Engineering Limited, a firm specializing in the analysis and design of advanced electronic, optical and mechanical systems for both industrial and government customers. Before founding the company in 1971, he worked in design engineering for Decca Radar Limited, after a period in the United States with Bellcomm Inc. in the US Space program. Prior to that he occupied a physics research post at the University of Chicago, having previously obtained a first-class honours degree and a doctorate in physics at Oxford University. Dr. Smith is a Fellow of both the Royal Academy of Engineering and the Institution of Electrical Engineers. He is Chairman of the Economic and Social Research Council in the UK, Chairman of the Board of Trustees of the National Space Science Centre, Chairman of the Earth Observation Programme Board of the British National Space Centre, a non-executive Director of two private companies and a Domus Fellow of St. Catherine's College, Oxford.