Society's Distinguished 2000 Awards

The Society is pleased to announce that the CSBMCB's **Merck Frosst Award** for 2000 will be presented to **Dr André Veillette**, Institut de recherches cliniques de Montreal. This year's competition for this award brought forward a large number of outstanding candidates and after a challenging evaluation process, Dr. Veillette was deemed the top ranked nominee. He will receive the award at the annual CFBS Ottawa Meeting Friday June 24, 2000 at 1.00 p.m. and present his lecture "Kinases and phosphatases in immune cell signalling".

This year there are two co- recipients of the **The Jeanne Manery Fisher Memorial Lectureship Award**, **Dr. Amira Klip**, Senior Scientist, The Division of Cell Biology, The Hospital for Sick Children and **Dr. Carol E. Cas**s, Chair, Department of Oncology, University of Alberta. It was not possible to distinguish between the qualifications of these two outstanding women scientists. Each has exhibited the scientific qualities that guided Dr. Manery Fisher through her own career and in whose memory this award is dedicated.

It has been decided that Dr. Klip will present the first lecture at the CFBS Ottawa on Saturday June 25, at 1.00 p.m. and that Dr. Cass will be honoured at the Society's 2001 AGM that will take place at the Nottawasaga Inn, Alliston, Ontario, May 31-June 3, 2001 . The title of Dr. Klip's lecture will be "Place, Manner and Time in Cell Biology: the Syntax of Insulin Action".

Dr. André Veillette. The 2000 Laureate CSBMCB's Merck Frosst Awardee.

Dr. Veillette received his medical training in 1981 at the Université de Laval. Following the completion of his residency in medicine at the Montreal General Hospital, he embarked on a postdoctoral research training programme in oncology and molecular biology at the National Cancer Institute in the United States. He joined McGill University as an Assistant Professor in the Department of Medicine in September 1989 and was granted tenure and promoted to Associate Professor four years later. He recently joined the Institut de recherches clinques de Montréal (IRCM) where he and his research group have relocated. For the IRCM, this represents a major and unique recruitment. Not only because Dr. Veillette is an international leader in the field of intracellular signalling but also because of his important contributions regarding the discovery, regulation, and mode of action of a family of tyrosine kinases that are essential for the activation of lymphoid cells.

Dr. Andre Veillette's seminal contributions in basic protein biochemistry of signal transduction provided fundamental insight into the mechanisms of T -lymphocyte activation. He was the first to demonstrate that the CD4 molecule, which is essential in T-lymphocyte activation, performs this function because of its association with tyrosine kinase p56^{lck}. An article detailing the results of this work was published in the prestigious journal Cell. This was followed by a series of highly cited articles that allowed the elucidation of the enzymatic cascade set in motion by p56 ^{lck} activation.

Dr. Veillette was also the first to demonstrate that the activity of these tyrosine kinases was itself controlled by the p50csk enzyme which inhibits the activity of p561ck. These results were published in Nature and were followed by a number of high impact articles which promoted the understanding of the complex machinery controlling the activation and repression of T -lymphocytes. More recently, Dr. Veillette expanded the scope of his research to the study of the functional role of phosphatases which are the other enzymes intimately associated with the activation of T -cells and differentiation of hematopoietic cells. Thus, over the years, Dr. Veillette has made several important contributions regarding the complex mechanisms that positively and negatively control the proliferation and differentiation of hematopoietic cells. This basic biochemical research is extremely important in helping understand the function and dysfunction of, among others, the immune system in immunodeficiency, auto-immune disease, and leukemia. Moreover, these enzymes are part of large families with members expressed in several organs and cells outside the hemopoietic system. Thus, Dr. Veillette's studies have a wide impact.

Dr. André Veillette

The calibre of these contributions was recognized at Canadian and International levels by several prizes and honours such as the Young Investigator Award from BioMega Ingelheim in 1992 and the prestigious William E. Rawls Award from the National Cancer Institute of Canada in 1994. He was also an Elected Member of the American Society for Clinical Investigation in 1995. In addition, Dr. Veillette is one of the rare Canadians to be a Member of the Editorial Board for the prestigious Molecular and Cellular Biology Journal as well as other significant journals such as the Biomedical Journal and Seminars in Immunology.

Dr. Veillette, who was a Scholar and Scientist of the Medical Research Council of Canada, recently became a Senior Scientist ranking 1 st among 43 applications. I would like to cite a few comments made by the evaluators of Dr. Veillette's application for the MRC Senior Scientist competition:

"Dr. Veillette has been directly involved in many major advances in immune cells signalling and is widely recognized for his contributions. He publishes elegant papers. The work is meticulous and shouts class. In my view, Dr. Veillette epitomizes the best characteristics of Canadian science." A second evaluator wrote; "Dr. Veillette has centred his investigations around antigens specific activation of T -lymphocytes. he initiated this entire field. . . Dr. Veillette is a very strong presence in the internationally very competitive TCR activation signal transduction field." Another evaluator stated; "Dr. Veillette has continued as a leader in the field of immunology and signal transduction... Dr. Veillette has unique skills and achievements that make him an important figure in immunologyand signal transduction. His work is characterized both by its rigor as well as its innovation and has far reaching implications for our understanding of normal lymphoid function and for diseases such as immunodeficiencies and cancer. Not only is he an internationally respected scientist, he is a practising clinician. He is an extraordinarily valuable member of the Canadian Scientific Community and someone who will continue to do exceptional research in the future. Dr. Veillette is without doubt one of the foremost scientists in Canada and intent in the world working on signalling process in lymphoid cells."

Consequently, it must be noted that Dr. Veillette is one of the rare Canadian scientists who is internationally renowned in the highly competitive research field of signal transduction. This is attested not only by the comments of the experts mentioned above but also by the impressive list of invitations to attend prestigious conferences. This is because he has continued to establish research paradigms which many other scientists were able apply to different systems and has thus succeeded in achieving a leadership role that very few young researchers can claim. This is indeed an eloquent testimony of Dr. Veillette's fundamental contributions.

In conclusion, Dr. Veillette is a unique individual, a young researcher who brilliantly succeeded in advancing the most fundamental research frontiers of signal transduction, oncology, and immunology in less than 10 years of independent research and before turning 40 years of age.

Dr. Amira Klip
Co-winner Jeanne Manery Fisher Memorial Lectureship

Dr. Amira Klip is a Senior Scientist in the Division of Cell Biology at the Hospital for Sick Children in Toronto. She is also a full professor in the Departments of Paediatrics, Biochemistry and Physiology at the University of Toronto.

Dr. Klip's research has spanned almost every aspect of the regulation of glucose utilization, beginning with seminal biochemical studies on glucose transporter structure, following with in-depth analysis of signalling mechanisms of insulin and the discovery of alternative pathways for stimulation of glucose uptake. More recently she has tackled the molecular mechanisms of glucose transporter biosynthesis and of their incorporation into and removal from the plasma membrane. These basic science mechanisms apply directly to our understanding of insulin resistance typical of diabetes, and have also implications on hypertension. For her outstanding contributions and continued productivity, Dr. Klip was appointed in 1999 as Distinguished Scientist by the Medical Research Council of Canada. This is the highest personnel award given by the Council. In addition to this honour, Dr. Klip had previously received the Young Scientist Award from the Canadian Diabetes Association, the Canadian Biochemical Society-Pharmacia Award for Scientific Excellence, and the Merck Frosst Prize from the Canadian Society for Biochemistry, Molecular and Cellular Biology.

Her contributions impact several major areas:

1. Glucose transport biology and defects in diabetes: Dr. Klip first identified the glucose transporter of skeletal muscle by photoaffinity labelling, years before its molecular cloning. She established novel technologies to fractionate skeletal muscle of rodents and humans, through which she first determined the translocation of glucose transporters in response to insulin. These approaches later served to detect defects in the translocation step in both rodent models of diabetes as well as in individuals with the disease. This latter accomplishment was done through a successful collaboration with Drs. Zierath and Wallberg-Henriksson from the Karolinska Hospital of Stockholm, who sought Dr. Klip as the ideal biochemist to analyse their patient population. This work showed also that there are alternative pathways of glucose transporter translocation, such as exercise (in collaboration with Drs. Mladen Vranic, University of Toronto) and John 0. Holloszy, Washington University), and that several drugs can be used to elicit translocation and in this way bypass insulin resistance. In particular, Dr. Klip's latest work points to the use of the specific anti-oxidant agent, lipoic acid, to improve the translocation step. Again, this work arose from a search by a pharmaceutical company, Asta Medica GE, to match a capable cell biologist to their pharmacological arsenal. In collaboration with another MRC Distinguished Scientist, Dr. Nahum Sonenberg (McGill University) she recently showed that insulin regulates the rate of translation of the different glucose transporter mRNAs, in addition to regulating their transcription and localization. Perhaps the most novel discovery of Dr. Klip, which is creating deep interest at present, is the unravelling of regulation of the intrinsic activity of glucose transporters.

2. Molecular biology of intracellular traffic. In 1993 Dr. Klip sparked the interest of glucose transporter biologists onto the fusion machinery just discovered for synaptic vesicle traffic. Her approach consisted of detecting specific proteins involved in individual traffic steps of the glucose transporters. Through successful collaborations with Drs. William Trimble (University of Toronto), Bentley Cheatham (Joslin Diabetes Center) and Pietro deCarnilli (Yale University) she has put on the map the participation of the fusion molecules syntaxin-4, V AMP-2 and SNAP-23, as well as of the endocytosis molecules dynarnin and amphiphysin. Very recently, Dr. Klip has introduced another player to the regulation of glucose transporter traffic within the cell: the cytoskeleton. This novel work is receiving increasing attention, as it demonstrates for the first time that insulin causes cortical actin reorganization, which allows insulin signalling molecules to come in contact with glucose transporter containing vesicles.

Dr. Amira Klip

3. Hormonal regulation of sodium and potassium homeostasis. Dr. Klip has pioneered this important and previously neglected area of research. Almost single-handedly she has rekindled interest in the regulation of the Na/K pump by insulin and more recently by leptin, the 'satiety hormone'. Dr. Klip's work in this area shows that the pump is a key enzyme, which can be regulated at the levels of gene expression, subcellular localization and catalytic activity, and that this regulation may affect important functions such as blood pressure, potassium balance and vascular smooth muscle contractility . Through her work, a mechanistic link can be established between insulin resistance of the pump and hypertension.

Throughout these studies, Dr. Klip has used state-of -the-art methodologies and developed single-cell approaches, which are unique for the study of glucose transporter traffic. These approaches are also very varied, ranging from generation of cell lines, cellular microinjection and imaging, electron microscopy, fluorescence measurements of ion and voltage changes within cells, as well as work with diabetic animals and humans.

Dr. Klip's career has been marked by a rapid ascent through the academic ranks. The international academic community has recognized her through numerous invitations to editorial boards, executive committees and lectureships. Beginning in 1980 she was awarded a Scholarship from the Medical Research Council and was appointed as Scientist in the Research Institute of the Hospital for Sick Children, and as an Assistant Professor in the Department of Paediatrics of the University of Toronto. She was subsequently honoured by a Scientist A ward from the Medical Research Council in 1985, and promoted to the rank of Associate Professor in the Departments of Paediatrics and Biochemistry of the same university. In 1992, Dr.

Klip was promoted to the rank of Full Professor in the Departments of Biochemistry , Paediatrics and Physiology, and promoted to Senior Scientist at the Hospital for Sick Children. In addition to her academic duties, since 1992 she has been an Associate Director of the Research Institute of the Hospital for Sick Children. In the last two years, she developed and chaired the Research Training Centre of the same institution, which overviews all the research training programs espoused by the Hospital. This is a unique creation of Dr. Klip, which has been applauded throughout the institution and emulated by others. She has been elected as a panellist to grant committees of the Medical Research Council, the American Diabetes Association and the Juvenile Diabetes Foundation International. She has served in the editorial boards of "Diabetes", "Endocrinology" and the "American Journals of Physiology" ("Cell Physiology" and "Endocrinology & Metabolism"). She was elected co-chair and then chair of the FASEB Summer conferences on Glucose Transporter Biology in Colorado, and has been invited to deliver multiple lectures in numerous universities and biotech companies around the world (more than 80 invited lectures in the last 10 years). She is also a lecturer in several graduate and medical courses at The University of Toronto, where her students have given the highest reports on her teaching ability and enthusiasm.

To date, Dr. Klip has published139 peer-reviewed original papers and 48 invited chapters and reviews. She has directed the Masters research of 10 students and the Doctoral research of 8 more. She has trained 19 post-doctoral fellows from Canada, China, Denmark, England, Japan, Hong-Kong, Peru, Scotland, Spain, Switzerland, and Trinidad. All of them have continued on to pursue academic, research and medical careers. Finally, she has directed the research projects of several undergraduate, summer, and high school co-op students. In addition, Dr. Klip collaborates actively with other scientists around the world. The work in Dr. Klip's laboratory has been steadily funded by the Medical Research Council of Canada, the Canadian Diabetes Association, the Juvenile Diabetes Foundation International and several pharmaceutical companies.

Perhaps the most outstanding of her contributions continues to be the emphasis and intensity with which she mentors and directs her students and fellows. She shows tremendous zeal in nurturing their careers, and takes time to teach them every aspect of academic propriety, scientific method, communication skills, collaboration and interaction savvy. She sets an example for her trainees to emulate with her generosity, compassion and support for fellow workers. Persons receiving training in Dr. Klip's laboratory or even just interacting with her for short periods of time cannot help but admire her exceptional ability as a mentor.

Dr. Carol E. Cass
Co-winner Jeanne Manery Fisher Memorial Lectureship.

Carol Cass is Professor and Chair of Oncology and Adjunct Professor of Biochemistry in the Faculty of Medicine at the University of Alberta. She is also the Associate Director {Research) of the Cross Cancer Institute. In 1996, Dr. Cass became the first Chair of the newly formed Department of Oncology in the Faculty of Medicine and Oral Health Sciences at the University of Alberta. The Department of Oncology, which is a unique partnership between the University of Alberta and the Alberta Cancer Board, is one of the larger departments in the Faculty, with six academic divisions representing clinical and basic science disciplines.

Dr. Cass obtained a B.Sc. with Distinction in Zoology in 1963 from the University of Oklahoma and was awarded the Sigma Xi medal to the top student in the Faculty of Science and the Gold Medal to the top all-round female student at the University. She also obtained a M.Sc. in Zoology (Cellular Physiology) at the University of Oklahoma in 1965. Dr. Cass was the recipient of graduate studentships from the University of California and the National Science Foundation and completed her Ph.D. work in Zoology (Cell and Developmental Biology) at the University of California at Berkeley in 1970. Her thesis research was undertaken in the laboratory of Dr. M. Harris on membrane-dependent mechanisms of drug resistance.

Dr. Cass moved to the University of Alberta in 1970, where she was a postdoctoral fellow with Dr. A.R.P. Paterson in the McEachern Laboratory, a Cancer Research Unit of the National Cancer Institute of Canada {NCIC). In 1974, Dr. Cass became an NCIC-funded Research Scientist of the McEachern Laboratory and an Assistant Professor in the Department of Biochemistry. From 1974-1999, Dr. Cass has continuously held competitive

career awards from NCIC, culminating with the prestigious Terry Fox Cancer Research Scientist Award. Dr. Cass is a member of the Medical Research Council (MRC) Group in the Molecular Biology of Membranes, based in the Department of Biochemistry. Dr. Cass' research program is funded by NCIC, MRC, and the Alberta Cancer Board.

Dr. Cass' research on nucleoside therapeutics has focussed on mechanisms of membrane transport of physiologic nucleosides and anticancer and antiviral nucleoside drugs. In the early 1970s, Dr. Cass demonstrated that a group of nucleoside analogs, previously shown to inhibit nucleoside transport in human erythrocytes, acted through high-affinity binding of the inhibitor to the plasma membrane. This work led to the development and exploitation, by Dr. Cass and Dr. Paterson in Edmonton and others elsewhere, of the inhibitor as a molecular marker for identification of the erythrocyte nucleoside transporter. This transporter is known today as the equilibrative sensitive (es) transporter, is widely distributed in mammalian cells and tissues and has been shown to playa critical role in the cellular uptake of anticancer and antiviral nucleoside drugs. During the 1980s, as interest in nucleoside transport grew with the recognition of the biological roles of adenosine as a signalling molecule, additional nucleoside transport systems were discovered and by 1990 it was clear that there were at least five functionally distinct transport systems in mammalian cells and tissues. Nucleoside transporters are low abundance proteins, and attempts to purify the transporters yielded relatively little useful information. In the late 1980$, Dr. Cass and Dr. James Young at the University of Alberta and Dr. Stephen Baldwin at the University of Leeds entered into a three-way collaboration to isolate cDNAs encoding nucleoside transporter proteins. This collaboration, which combined the expertise and experimental systems of three membrane biochemistry laboratories, depended heavily on the use of heterologous expression systems for functional expression of cDNAs to identify transporter proteins, led to the identification of two new families of membrane transport proteins. Since 1994, the Baldwin, Cass and Young research teams have identified over a dozen new transporters and are currently acknowledged as the world leaders in the study of this important group of membrane proteins.

Dr. Cass has played an important role in the peer review system in Canada. In the cancer field, she served on the MRC cancer panel and was Chair and Scientific Officer of the Alberta Cancer Board's provincial funding program during the 1980s. Dr. Cass has served on numerous NCIC committees: Chair of the NCIC Fellowship Panel, Chair of the Terry Fox Clinical Training Program Committee, Chair of Panel G, Chair of the Advisory Committee on Research and a member of the National Task Force on Personnel and the Task Force on Prostate Cancer Research. Dr. Cass is currently a member of the MRC Mike Smith Award of Excellence Committee and recently completed a three year term as Chair of the MRC Scientists A Awards Committee; she also served as Vice-Chair of the Postdoctoral Fellowship Committee. Dr. Cass is currently a member of the Gairdner Foundation Medical Advisory Board and was responsible for organizing the Alberta Gairdner lectures as part of the nation-wide celebration of the 40th Anniversary of the Gairdner Foundation in October, 1999. Dr. Cass was recently appointed as a member of the Selection Committee of the Canadian Medical Hall of Fame.

Dr. Carol E.Cass

Dr. Cass contributed to the leadership of the Canadian Biochemical Society and the Canadian Society of Cellular and Molecular Biology (CSBMB), serving as Vice-Chair and Acting Chair of the Program Committee for the IVh International Congress of Cell Biology held in Montreal in 1988, and then as Secretary, President-Elect and President of CSCMB. She was a member of the Merger Committee that developed the plan for creation of the Canadian Society of Biochemistry, Molecular and Cellular Biology in 1995 and served as a member of the merged Executive Committee and was subsequently elected to serve on the CSBMCB Executive Committee for a three-year term.

Dr. Cass has played a major role in the organization of scientific meetings. She has served on organizing committees of provincial, national and international meetings and as Chair of the Organizing Committees for the 41h Winternational Symposium on "Molecular Biology of Membrane Proteins" held in Banff, AB, in 1994, the 8th Winternational Symposium on "Membrane Proteins in Health and Disease" to be held in Banff, AB, in

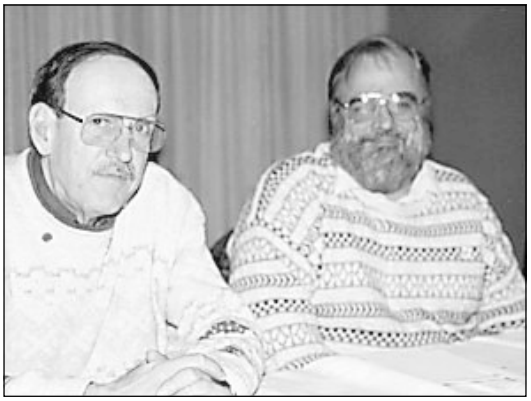
1998, the 1st Western Canada Cancer Conference in 1997, the Alberta Cancer Board Research Conference in 1999 and five international workshops on Nucleoside Transport held at approximately four-year intervals since 1978. Dr. Cass is currently Chair of the Gordon Research Conference on "Purines, Pyrimidines and Related Substances" to be held in Newport, RI, in 2001.

Dr. Cass has also been active in community affairs, through her contributions to the Edmonton Unit, Alberta/Northwest Territories and National Office of the Canadian Cancer Society. She has made numerous public presentations on cancer to interested lay groups and to high school students. During the 1980s, Dr. Cass was a member of the volunteer Board of Directors of the Edmonton Unit of the Canadian Cancer Society and served as its Education Chair for several years. She also served as a member of the Board of Directors of the Alberta/Northwest Territories Division and as a member of the Division Education Committee. She has recently been reappointed to the Division Board of Directors as a representative of the Alberta Cancer Board. She is currently a representative of the cancer research community on the national Task Force on Revenue Sharing between the Canadian Cancer Society and the National Cancer Institute of Canada. In 1999, Dr. Cass received the Edmonton YWCA Women of Distinction Award in Health and Medicine.

Scenes from the CSBMCB Mid Winter Board Meeting Toronto Feb 5/00

Pat Krone savouring the completion of his three year term as Councillor

Margaret Brosnan, Scientific Program Committee rep, Roger Brownsey and Marlys Koschinsky, Councillors and Frances J. Sharom, Vice-President



Leon Browder, Vice President elect and Peter Lewis Past President