

# BULLETIN

DECEMBER, 1982

VOL. 13, NO. 1 (18)

ISSN: 0068-9653



TORONTO, CANADA  
1986

CANADIAN SOCIETY FOR IMMUNOLOGY  
SOCIÉTÉ CANADIENNE D'IMMUNOLOGIE

# BULLETIN

OF THE CANADIAN SOCIETY  
FOR IMMUNOLOGY

DE LA SOCIÉTÉ CANADIENNE  
D'IMMUNOLOGIE

Vol. 13 No. 1 (18)

December 1982

ISSN 0668-9653

---

EDITOR: Dr. P.N. Shek  
Immunology Group  
Defence and Civil Institute of Environmental Medicine  
Downsview, Ontario  
Canada M3M 3B9

(416) 635-2127

SUBSCRIPTIONS: Distributed to all members of the Canadian Society for Immunology. Enquiries regarding subscriptions by non-members and institutions should be directed to the Editor.

MEMBERSHIP: Enquiries regarding membership in the Society should be directed to the Secretary-Treasurer. Membership applications are considered twice a year, in September and March. An Application Form is included in each issue of the BULLETIN.

CONTENTS

EDITOR'S MESSAGE .....	1
IN PRAISE OF CANADIAN IMMUNOLOGY	
N.R. StC. Sinclair .....	2
REPLICATE TO SURVIVE	
G. Bicker .....	4
FOCUS	
Department of Microbiology and Immunology, University of Western Ontario .....	6
THE CANADIAN SOCIETY FOR IMMUNOLOGY	
Officers and Council, 1982-1983 .....	10
Minutes of the Annual Business Meeting (July 1982) .....	11
Secretary-Treasurer's Report .....	14
Financial Statements and Auditor's Report .....	16
NEWS UPDATE	
The 6th International Congress of Immunology (Toronto, 1986)... ..	18
New International Standard for FITC-labelled Anti-human IgG ... ..	18
Gairdner Foundation International Awards .....	19
Immunology Videotape: Cellular Immunity and Immune Deficiency Diseases .....	20
Congress Logo Design .....	21
DRAWBACKS & QUOTES .....	22
CONFERENCES AND TRAINING COURSES	
Immunochemistry and Immunobiology .....	23
Radioimmunoassay .....	24
Regulatory Elements of the Immune System .....	25
Methods in Immunologic Diagnosis .....	26
SCHEDULED MEETINGS (1983) .....	27
POSITIONS VACANT .....	30
'LOST' MEMBERS .....	33
ACKNOWLEDGEMENT .....	33
MEMBERSHIP APPLICATION FORM	



## EDITOR'S MESSAGE

The primary function, among others, of the CSI Bulletin is to provide a forum for members of the Society to exchange their viewpoints, to be informed about past, current and future events of immunology groups across the country, and to maintain an open dialogue of common interests to the membership. Being the newly appointed editor of the Bulletin, I would like to emphasize that the above-mentioned goal can only be achieved if most, if not all, of our members feel like sharing their opinions, their interests, their achievements, their ideas and their feelings with one another. Thus, your support of the Bulletin is important and valuable, if not essential, for it to serve the members well. Your contribution may be an article on a topic of interest to the general membership, a note about scientific activities in your region, a letter to the editor about issues you want to raise, an announcement about coming meetings, conferences, and training courses, and any other matters or highlights which you would like to share with other members of the Society.

Starting with this edition of the Bulletin, a new section entitled, 'FOCUS' will be featured in each issue. The FOCUS section will highlight the scientific activities, the achievements of the investigators, the training programmes, and the historical notes of various immunology research and teaching centres across Canada.

So far, there have been only two members, Dr. T. Pearson (Victoria) and Dr. M. Nemirovsky (Sherbrooke), who responded to our call for Regional Correspondents. In view of this poor response, I would like to make a PLEA to members in other cities and regions (e.g., CALGARY, EDMONTON, GUELPH, HALIFAX, HAMILTON, LAVAL, LONDON, MONTREAL, OTTAWA, ST. JOHN'S, SASKATOON, TORONTO, VANCOUVER, and WINNIPEG, just to name a few), to answer our 'desperate' need for local correspondents. A reply-sheet is enclosed with this issue of the Bulletin for your response; please act now and your contribution to the Bulletin as a correspondent will undoubtedly be appreciated by the membership at large.

On behalf of the membership, I would like to thank Dr. B.H. Sabiston, our former editor, for his time and effort in managing the publication of the last three issues of the Bulletin. His input in revitalizing the Bulletin from its dormant state is much appreciated. It is our hope that the Bulletin will continue to serve as a useful forum for information exchange among members of the CSI.

IN PRAISE OF CANADIAN IMMUNOLOGY

N.R. StC. Sinclair  
Vice-President  
Canadian Society for Immunology

In these days of doom and gloom about levels of funding for immunologic research, I thought I would try to look optimistically at the progress made in immunologic research in Canada. Also, the Canadian preoccupation with inferiority complexes often prevents us from seeing the strength in our immunologic research, both basic and applied.

There is one town in Canada which is loaded with good immunological research. Yes, I am speaking of Hogtown. Toronto produces a never ending supply of good basic and clinical work. The Ontario Cancer Institute and the Toronto Sick Children's Hospital as well as the Medical School per se are all constant contributors to the immunologic scene. Institutions such as Toronto Western and General Hospitals and the Best Institute are also producers of quality research. It is indeed befitting that Toronto is now seeking to develop an autonomous Department of Immunology and is in the process of seeking a leader. This chairperson will have a difficult time keeping up with the Toronto momentum let alone thinking about leading!

Canada boasts two MRC groups devoted to immunology which have international reputations. These are situated in Winnipeg and Edmonton. Although quite different in their approach to group sponsored research both are active and productive, and both have gained international reputations.

A significant development has been the identification of the BB Wistar rat strain with its tendency to develop insulin-dependent diabetes. This work, which was nurtured at the NRC laboratories in Ottawa, has since, through fine collaboration efforts spread to other centres such as Montreal and London. This animal model will help in the understanding of the autoimmune nature of a particular diabetic subtype.

Despite the controversies which exist in the field of tumor immunology, solid work, mainly supported by the National Cancer Institute, is progressing in a number of Canadian centres, the strongest of which are Vancouver, Edmonton, Toronto and Montreal.

Perhaps one of the more ambitious cooperative efforts currently is the MRC supported trial on cyclosporine in the treatment of graft rejection. This trial involves 12 transplant centres across Canada and has made a number of significant contributions as reported this September at the Royal College meetings. Whereas, 50% one year graft survival rates were common five years ago, one may expect graft survival rates exceeding 80 to 90%, provided certain risk factors are avoided. Such an improvement in graft survival rates will be reflected in reduced health care costs.



In these days of having to justify the expense which society incurs in the pursuit of our research, it is useful to point out to fund givers and politicians that there are innumerable examples of collaborative efforts between basic and clinical immunologists in Canada. Although not all immunological research lends itself to collaborative efforts, a greater effort in this direction can only benefit Canadian immunology and Canadian immunologists.

Much of the basic work carried out in Canada is ultimately targeted to answering questions in applied areas of the health disciplines. In fact, one should serve a warning that the concern for immediate justification in terms of improvement in health has become so great that basic immunology is in danger of being neglected. A balance in supportive efforts in various branches of immunology must be maintained.

However difficult it is to explain to the non-immunologist that one is interested in immune response to sheep erythrocytes, TNP-KLH or GAT-BSA (unlikely sources of infection!!), work on basic mechanisms must continue. We simply do not yet know enough about the components and control of the various immune responses. Suppressor cells may be raised/lowered when a certain response is present/absent (respectively or not!!) but why? Many Canadian Immunologists are opening windows of understanding in these areas.

Immunology has again provided important new techniques to the scientific world in the form of hybridoma technology and in cell sorting procedures which must be added to the earlier techniques which have had widespread application in many fields in the biosciences.

In previous times, immunologic methods outshone theory. Today's study of the immune system, utilizing methodologies from all branches of science, has added to our understanding in genetics, cell biology and cell physiology as well as given us a better means to manipulate our internal environment so that the ravages of disease may be lessened or even reversed. To understand the immune system means to know life processes and to control them for the betterment of mankind. Canadian immunologists are making significant contributions in this effort.

REPLICATE TO SURVIVE

Gary Bicker  
Chief Science Policy Advisor  
Canadian Federation of Biological Societies

As I consider how to discuss Canadian science policy during the current economic climate, I am reminded that immunologists are accustomed to higher degrees of complexity than that of science policy. I do not think, however, your research has ever shown eccentricities in molecules claiming they must ask for an appointment with a T-cell to discuss the antibody availability next year while its trying to fight off the back-to-school communicable diseases. This is basically the situation for Ottawa-based advisors and lobbyists today.

As with other economic sectors in Canada, universities and research laboratories are targets of the federal government's six-and-five-percent programme of restraint. Granting Councils will undoubtedly be asked to restrict their budgets to this programme as a means of controlling government spending. A major concern is whether or not the six-and-five will be applied to non-salaried items of grants. The Science Council's SEPI deflator index shows that research has suffered from underestimation of inflation calculations over the past decade. Despite this fact, a squeeze on provincial budgets could force universities to reassess operating budgets leaving overhead and administrative expenses for research labs and support facilities without funding. The granting Councils will not be in a position to make up for such underfunding.

Of particular interest at the moment is the status of the new MRC five-year plan. This is the Council's second attempt to develop a plan which has as its objectives the stabilizing of basic research funding and growth over a five-year period. This will presumably encourage increased utilization of the best educated group of principal investigators this country has ever known.

The problem lies in two areas: one is the current economic situation applying pressure to politicians to solve short term unemployment problems. The second is that the last plan had as its goal the generation of more productivity from the biomedical research system through the hiring of more technicians and student trainees for each principal investigator. Obviously the two goals are in conflict because one addresses short term employment and the other is trying to prevent a serious shortfall in researchers and teachers in the 1990's. At which time roughly one-half of the professoriate will be due to retire and the demand for scientifically trained researchers, teachers, technicians and managers will be historically high.

The plan itself has been delayed and preliminary documentation has been difficult to obtain. Since manpower is the most critical part of any plan and since NSERC is having problems in obtaining a response



to its request for funds to meet its own manpower objectives, it is logical to assume that meeting research manpower training objectives will be particularly difficult this year. Biomedical research productivity is critically linked to manpower training objectives and therefore must be the focus of discussions on research funding over the next few years. This problem can only be exacerbated by reduced university budgets.

The internal debates within professions devoted to biomedical research will only serve to decrease each province's ability to negotiate Established Programme Financing (EPF) with the federal government. Divide and conquer has certainly worked for the federal government on other federal-provincial issues. Bickering between the research community and university administrators could provide the same results. Those of you who have benefited from private support in the past should realize that donations to charities are down this year.

I am sure that most researchers and professors are as willing to carry their share of the economic burden as are other Canadians. Industrial contracts with universities are not easy to obtain and do not provide much remuneration for researchers or their institutions. So, stability and growth in research productivity through contact with government is critical to support of the health care system. This will also provide an opportunity to establish new, and perhaps biotechnology-oriented, industry that stands to benefit Canada for years to come.

It would appear that the practical objectives of financial support must be directed to the professional goals of each research discipline. Each professional association of the Federation of Biological Societies must tie its arguments for support to those scientific objectives each association feels is critical to the development of their activities. Manpower training is the link which ties all research areas together. It is the key resource of quality research and the major product of universities. There is no other segment of Canadian society which can compensate for its failings. The survival and health of a research profession is dependent on its ability to replicate within a given time frame like that of a living organism. The economic disease which plagues us has no antibody and may prove terminal for a few research "cells". The replication of inquisitive minds in a Lamarkian fashion is the role of the teacher-researcher. It cannot be replaced without severe trauma to society as a whole.



\*\*\*\*\*  
F O C U S  
\*\*\*\*\*

DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY  
UNIVERSITY OF WESTERN ONTARIO

London, Ontario



HISTORICAL BACKGROUND

The Department of Bacteriology and Immunology, the forerunner of the present Department, was created in 1939 in the Faculty of Medicine, which remains its formal "home". Up to that time bacteriology had been taught in Medicine by members of the Department of Pathology. In 1965 the Department moved from its quarters in Victoria Hospital to the new Faculty of Medicine Building, increased its staff, initiated courses in Science and developed an honours program in the component disciplines.

Graduate studies have been an important part of the life of the Department since 1948. From 1949 onwards, a particularly strong research program on the structure of microbes developed. Virological studies were initiated in a hospital context in 1960 and in the University in 1965, expanding enormously since 1976 to provide a major component of the research effort. Immunology, although taught, was not a significant area of research in the Department until 1967 when a series of appointments gave rise to the strong group of today. New areas of academic/clinical contact have been developed, especially in immunology, the transplantation services and in neurological science. The development of University Hospital (1972) has led to a great strengthening of expertise in clinical microbiology.

The Department also took part in the development of the Faculty of Dentistry (1967) and in the initiation of bioengineering and environmental engineering studies (1968). Appropriate appointments resulted in new teaching and research programs.

The current name, Department of Microbiology and Immunology, was adopted in 1978 and reflects the broad interests of the faculty and its students.

GRADUATE STUDIES

The Department offers programs leading to the MSc and PhD degrees in most areas of modern microbiology. The Department is prepared to supervise research within the principal interests of its faculty. These include: the structure of bacteria and fungi; the application of cytochemical and biochemical methods to the analysis of cell structure; the synthesis of protein-cell components; macromolecular architecture; taxonomy; toxin production; bacterial metabolism; virus-cell interactions; neuro-virology; study of oncogenic and neurotropic virus

genomes; bacteriophage genetics; biochemistry of eukaryotic cell mutants; DNA replication; DNA repair; DNA transposition; gene regulation; autoimmunity; the regulation of the immune response in vivo and in vitro; cellular interactions in the immune response; reagin mediated hypersensitivity; medical and dental microbiology.

Excellent facilities and resources for carrying out research are available in the Department as well as in the adjacent University Hospital. A program of research and directed reading is accompanied by courses offered by the Department or given in collaboration with other Departments of the Faculty; these include tutorials and seminars.

#### RESEARCH INTERESTS

The Department has the mandate for the basic aspects of Immunology, Bacteriology, Genetics and Virology. Through cross-appointments and collaborative effects involving members of this Department, many of these basic efforts are coupled with clinical investigations thus allowing a "follow through" of an effort from basic research to clinical investigation and practice. The following is a listing of the basic research carried out by various individuals, listed in an alphabetical order, in the Faculty of Medicine:

##### BELL, D.A. (Rheumatologist)

Dr. Bell has a specific interest in systemic lupus erythematosus. His research work involves the NZB/W animal model investigating the molecular nature of the immunogenic form of DNA which leads to anti-nucleic acid antibody responses as well as studies on the relative balance of regulatory T cells which influence the height and nature of the antinucleic acid antibody response. This work carries over into clinical investigations where human cells can be shown to respond in culture to small molecular weight DNA.

##### BUSH, H. (Clinical Oncologist)

Dr. Bush, in collaboration with Dr. J. Gardner, is interested in immunologic responses to tumor antigen. Their approach is to obtain lymphocytes with which hydridomas will be prepared.

##### DALES, S. (Virologist)

Dr. Dales is interested in interactions between virus and host on both a morphologic and biochemical level. His recent area of interest is in the immunologic and molecular biologic basis for tissue damage particularly with respect to mouse hepatitis virus, a coronavirus which causes a form of central nervous system disease.

##### EBERS, G.C. (Clinical Neurologist)

Dr. Ebers has a special interest in multiple sclerosis, whose



research work deals with investigations into the pathogenesis of multiple sclerosis particularly with respect to the influence of the major histocompatibility complex and the production of oligoclonal immunoglobulins in the central nervous system.

GALSWORTHY, S.B. (Bacteriologist)

Dr. Galsworthy is interested in products from Listeria monocytogenes which are immunoregulatory.

HARTH, M. (Rheumatologist)

Dr. Harth investigates the anti-inflammatory mechanism operative with certain drugs commonly used in the treatment of rheumatoid arthritis. This work looks at the effect of these drugs such as sodium aurothiomalate, glucocorticoids and, more recently auranofin on the function of both lymphocytes and macrophages.

HOWSON, W.T. (Geneticist)

Dr. Howson studies the serological identification of the major histocompatibility complex in man and its relationship to associated diseases.

KEOWN, P.A. (Nephrologist)

Dr. Keown investigates the basic aspects of immune regulation and inflammatory response control as it relates to transplantation and autoimmune disease.

KO, H.S. (Clinical Allergist)

Dr. Ko investigates the influence of Ia antigens on immunological responsiveness against allergens.

PATERSON, N.A. (Pulmonary Function Physician)

Dr. Paterson is interested in mechanisms of tissue response to various intrinsic and extrinsic antigens as they affect the lung. His work centres around various chemical mediators, prostaglandins, and degradative enzymes all of which lead to various states of inflammation.

SINCLAIR, N.R. StC. (Immunologist/Chairman)

Dr. Sinclair is interested in humoral and cellular mechanisms which control immune responses and which form the basis of cellular interactions. He has an extensive collaborative effort with Dr. C.R. Stiller focusing on immunologic transplant studies, and the use of cyclosporine in clinical trials.

SINGHAL, S.K. (Immunologist)

Dr. Singhal is interested in the immunoregulatory aspects of a bone marrow cell and other immunoregulatory cells particularly in autoimmunity (with Dr. B.A. Bell) and in aging.

STILLER, C.R. (Nephrologist)

Dr. Stiller is involved in studies on the basic mechanisms involved in transplant rejection and in the development of autoimmune disease. His clinical interests include the development of a program for specific immunologic monitoring of transplanted patients and in investigations testing the clinical usefulness of cyclosporine.

STREJAN, G.H. (Immunologist)

Dr. Strejan is interested in mechanisms which control IgE responses and in identifying central nervous system immunogenic molecules which contribute to the development and perpetuation of chronic relapsing experimental allergic encephalomyelitis. He also has a model for induction of resistance to EAE using liposomes.

In characterizing the immunological research carried out by the members of this research centre, it is important to point out that there is a long-standing commitment to the investigation of basic mechanisms which regulate the immune response. In the pursuit of these investigations, many links have been established with clinical investigations which analyze the immunological events in a number of immunopathologic disease states including transplant rejection and those which have an autoimmune basis. As an indication of the intellectual activity of members of this research centre, four international symposia have been held at this University on subjects related to immune regulation and autoimmunity within the past nine years. These include symposia on suppressor cells in immunity, immunologic monitoring in the transplant recipient, aging and immunity, and a symposium on the immunological and virological aspects of multiple sclerosis.



CANADIAN SOCIETY FOR IMMUNOLOGY

SOCIÉTÉ CANADIENNE D'IMMUNOLOGIE

Officers and Council

1982-1983

PRESIDENT

PRÉSIDENT

J. Levy, Ph.D.  
Department of Microbiology  
University of British Columbia  
Vancouver, B.C. V6T 1W5

VICE-PRESIDENT

VICE-PRÉSIDENT

N.R. St.C. Sinclair, M.D., Ph.D.  
Department of Microbiology and  
Immunology  
University of Western Ontario  
London, Ontario N6A 3K7

SECRETARY-TREASURER

SECRÉTAIRE-TRÉSORIER

A. Froese, Ph.D.  
Department of Immunology  
University of Manitoba  
Winnipeg, Manitoba R3E 0W3

PAST-PRESIDENT

PRÉSIDENT SORTANT

B. Cinader, Ph.D., D.Sc., FRS(C)  
Institute of Immunology  
University of Toronto  
Toronto, Ontario M5S 1A8

COUNCILLORS

CONSEILLERS

P. Dent, M.D.  
McMaster University

A. Greenberg, M.D., Ph.D.  
University of Manitoba

L. Pilarski, Ph.D.  
University of Alberta

R.D. Guttman, M.D.  
Royal Victoria Hospital

R.A. Phillips, Ph.D.  
Ontario Cancer Institute

W. Pruzanski, Ph.D.  
Wellesley Hospital

CANADIAN SOCIETY FOR IMMUNOLOGY

MINUTES OF THE ANNUAL MEETING

University of Alberta, Edmonton  
July 17, 1982

G2.1 Minutes of the Annual Meeting held on June 18, 1981.

These minutes were adopted as circulated.

Mover: R.A. Phillips

Second: D. Clark

G2.2 Dr. Froese reported that a resolution passed at the last Annual Meeting (G1.6.2) was in disagreement with a resolution passed by the Board (Council). The Societies solicitor had pointed out that identical resolution should be passed by the Membership of the Board.

G2.2.2 Resolution: That the borrowing of money in the form of overdrafts by the signing officers be limited to \$2,000.00 per fiscal year and that securing of loans in any other form be subject to majority approval by the Board.

Mover: N.R. Sinclair

Second: M. Baines

CARRIED

G2.3 Report of the Secretary-Treasurer

G2.3.1 Membership

Dr. Froese reported that 30 new members had been submitted into the Society (24 full members, 1 associate member and 5 student members); 4 members had resigned. In addition, 11 members had not paid their dues for 3 or more years and Council had recommended that their names be deleted from the membership list.

Resolution: That the recommendation of Council be approved.

Mover: A. Froese

Second: D. Clark

CARRIED UNANIMOUSLY: A list detailing the changes in membership can be obtained from the Secretary-Treasurer.



Infections", "Allergy", and "Monoclonal Antibodies as Probes to Identify Differentiation and Innocent Antigens or Markers on Normal and Malignant Cells". The Social evening organized by Max Richter should also be of top quality. More information will be mailed to members prior to the Meeting.

Our Society once again sponsored the "Perey Memorial Award in Immunology" at the Youth Science Fair. In contrast to previous years, the judging was done by two of our members, Brian Barber and Bob Phillips. The award was presented by Hardi Cinader. The winner was Kathleen Leggett of Toronto with a project entitled "Red Dye No. 2". Sergey Federoff has kindly agreed to present the 1983 award at the Youth Science Fair in Saskatoon.

#### 5th International Congress of Immunology, Kyoto, Japan

The first circular describing part of the scientific program and calling for abstracts has just appeared, and members will be thinking about travel arrangements to Japan. The CSI has been in contact with World Travel Service Limited of Toronto who will be organizing a few tours as well as the stay in Kyoto. World Travel Service will mail the appropriate brochures shortly. Members should deal directly with the travel agent.

#### International Symposia

International Symposia are one of the most effective ways of scientific communication in a well defined area of scientific endeavour. In the past the CSI has been actively engaged in organizing and hosting such symposia. The last four have dealt with such subjects as: "T-Cell Regulation of the Immune Responses", "Genetic Control of Natural Resistance to Infection and Malignancy", "Reproductive Immunology", and "Structure and Function of Fc Receptors". All these symposia were highly successful and have led or will lead to publication of books.

It now seems that this activity of our Society is fading into the past. Therefore members are urged to think about new and challenging topics which could form the theme of future symposia. Anyone interested in organizing a symposium is requested to submit proposals to the CSI Council. Some modest financial assistance should be available.

Arnold Froese

THE CANADIAN SOCIETY FOR IMMUNOLOGY

Statement of Financial Activities  
(Cash basis)

For the year ended 31 May 1981

REVENUES

Membership fees, including levies to Canadian Federation of Biological Sciences and International Union of Immunological Societies	\$ 9,181
Interest	430
Other	100
	<u>9,711</u>

EXPENSES

Bank charges	6
Graduate students, subsidy to attend conferences	1,440
Incorporation and legal costs	865
Levies	
Canadian Federation of Biological Sciences	5,139
International Union of Immunological Societies	542
Membership, Youth Science Foundation	75
Office and postage	279
Printing and typing	271
Symposia	3,000
Telephone	64
	<u>11,681</u>

(DEFICIENCY) OF REVENUES OVER EXPENSES FOR THE YEAR \$ (1,970)

Balance Sheet  
(Cash basis)  
As at 31 May 1981

ASSETS

CURRENT

Cash in bank	<u>\$ 4,708</u>
--------------	-----------------

SURPLUS

BALANCE, beginning of year	\$ 6,678
(Deficiency) of revenues over expenses for the year	<u>(1,970)</u>
BALANCE, end of year	<u>\$ 4,708</u>

APPROVED ON BEHALF OF THE EXECUTIVE

(Original signed by Dr. Arnold Froese) DIRECTOR

See auditors' qualified report dated July 20, 1981



MACGILLIVRAY & CO.  
CHARTERED ACCOUNTANTS

*Internationally: Spicer and Oppenheim*

12th Floor, One Lakeview Square  
155 Carlton Street  
Winnipeg, Canada R3C 3H8  
(204) 944-0100 Cable "ESSANO"

AUDITORS' REPORT

Montreal  
Ottawa  
Toronto  
St. Catharines  
Port Colborne  
Brampton  
Burlington  
Hamilton  
Listowel  
Goderich  
Winnipeg  
Calgary  
Edmonton  
Prince George  
Vancouver

The Members of  
The Canadian Society for Immunology  
Winnipeg, Manitoba.

We have examined the balance sheet arising from the cash transactions of The Canadian Society for Immunology at May 31, 1981 and the related statement of financial activities for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances, except as follows:

The Canadian Society for Immunology derives its revenues from its members. These amounts are not susceptible to complete audit examination and accordingly our work in respect of these revenues was limited to accounting for the amounts recorded in the books of the organization.

In our opinion, except for the effects of any adjustments which might have resulted had the revenues referred to above been susceptible to satisfactory audit tests, these financial statements present fairly the financial position of The Canadian Society for Immunology as at May 31, 1981, arising from cash transactions and the result of its financial activities for the year then ended in accordance with generally accepted accounting principles for non-profit organizations on a basis consistent with that of the preceding year.

*Mac Gillivray & Co.*

Winnipeg, Manitoba  
July 20, 1981.

CHARTERED ACCOUNTANTS

\*\*\*\*\*  
NEWS UPDATE  
\*\*\*\*\*

THE 6TH INTERNATIONAL CONGRESS OF IMMUNOLOGY (TORONTO, 1986)

The first steps towards the organization of the 6th International Congress of Immunology have been taken on behalf of the National Research Council, by Mr. Ken Charbonneau and Mr. C. Gauvreau, which has led to the reservations of hotel spaces and of the Congress Centre. Initial financing of the Congress will depend largely on the National Research Council and, to some extent, on the International Union of Immunological Societies; both contributions will have to be repaid from Congress fees. We have alerted Canadian international aid agencies of the need for bursaries which will enable scientists from developing countries to participate in the activities of the International Congress. We hope that M.R.C., N.H.R.D.P., N.C.I., NSERC and other scientific and medical support agencies will be able to contribute to the travel and living expenses of appropriately selected chairmen and of symposium speakers. At this stage, our main preoccupation is with the financing of the Congress from other sources and this is among the responsibilities of the Phase I Executive which consists of: Dr. J. Bienenstock, Dr. B. Cinader (Chairman), Mr. K. Charbonneau, Mr. C. Gauvreau, Dr. R. Kerbel, Dr. R. Miller, Dr. W. Pruzanski, Dr. P.N. Shek, Dr. N.R. St.C. Sinclair and Dr. B. Wilkie. We feel that the 1986 Congress will mark a milestone in the intellectual and technological progress of biotechnology and medicine, and that this will enable us to elicit a supportive response from many components of the Canadian society.

The Congress logo has been evolved at McMaster, developing from a design by Dr. J. Bienenstock; it shows symbols of Receptor-Ligand interaction, Canada and Toronto. (This report was submitted by Dr. B. Cinader.)

ANNOUNCEMENT OF THE AVAILABILITY OF A NEW I.U.I.S./W.H.O. INTERNATIONAL STANDARD FOR FITC-LABELLED SHEEP ANTI-HUMAN IgG (ANTI-GAMMA CHAIN)

The Standardization Committee of the International Union of Immunological Societies (I.U.I.S.) is pleased to be able to inform workers using immunofluorescence techniques that the I.U.I.S. fluorescein isothiocyanate (FITC)-labelled sheep anti-human IgG (anti-gamma chain) for the demonstration of IgG antibodies in human serum has been accepted as a World Health Organization International Standard. The material is intended to be used for the assessment by comparative immunofluorescence assay of the quality of similar National and laboratory conjugates. Ampoules of this standard are available from the Immunology Unit, World Health Organization, 1211, Geneva 27, Switzerland.

The number of ampoules available to an individual laboratory must be strictly limited but the standard will be dispatched in response to a letter from the scientist describing the purpose for which it is to be used.



## GAIRDNER FOUNDATION INTERNATIONAL AWARDS

(The Gairdner Foundation was formed in 1957 by the late James A. Gairdner and his family in Toronto. Each year, Foundation Awards are given to a small number of scientists in recognition of their contributions to medicine.)

The 1982 Gairdner Awards were won by:

GILBERT ASHWELL, MD for his contributions to our understanding of the mechanisms by which carbohydrate markers regulate the recognition and uptake of proteins by cells.

PAUL JANSSEN, MD in recognition of his invention of haloperidol and related drugs useful in the treatment of mental illness.

MANFRED M. MAYER, PhD for his contributions to our understanding of the function of complement.

GUNTER BLOBEL, MD, PhD for his contributions to our understanding of the ways in which newly synthesized proteins are transported within cells.

ARVID CARLSSON, MD, PhD for his contributions to our understanding of the role of amines, particularly dopamine, as neurotransmitters.

Among the five distinguished recipients, Professor Mayer was the only immunologist and his scientific contributions to the complement system are summarized by Dr. W.D. Biggar as follows:

"Dr. Mayer is being recognized for his unique and major contributions to our understanding of the complement system. The complement system in man is thought to consist of a series of blood proteins. When the complement system is activated, these proteins interact in a sequential manner and participate in a cascade of biochemical reactions. At many steps along this cascade, molecules are produced as byproducts which then may play a very important role maintaining many bodily defense mechanisms. When the cascade is complete and the final proteins activated, cell destruction occurs. Dr. Mayer has pioneered the studies which have clarified our understanding of how the complement system actually damages the outer membranes of the cell. He discovered that the complement system causes circular defects in the cell's membrane which he described as the Doughnut Hypothesis. These ingenious experiments have permitted his colleagues and other scientists around the world to continue unravelling many of the mysteries surrounding the complement system. This bodily defense mechanism has been found to play a major role in many of man's defenses, for example, against cancer, bacteria and viruses. Inadvertent activation of complement may occur in man, for example, in certain allergic reactions and can actually be harmful. Only through continued research efforts

by Dr. Mayer and others will we continue to understand the complexities of this remarkable series of proteins and one day be able to harness it effectively to maintain bodily defenses against a variety of insults."

IMMUNOLOGY VIDEOTAPE: "CELLULAR IMMUNITY AND IMMUNE DEFICIENCY DISEASES"

A 30-minute colour videotape by the eminent pathologists and immunologists from the Cleveland Clinic Foundation, Sharad D. Deodhar, MD, PhD, and John D. Clough, MD, is now available through the American Society of Clinical Pathologists.

Basic concepts of cellular immunity and immune deficiency diseases, as well as a detailed discussion of laboratory methods and approaches to the phenomenon of cellular immunity are stressed in this instructive program. Viewers will learn the classification of the primary deficiency diseases, the specific cellular disorders which characterize them and the clinical areas in which cellular immunity is relevant. They will also gain an understanding of the specific cellular immune functions assessed by various in vitro assays and the relation to in vivo immune capacity.

Included are discussions of T & B cells, laboratory tests for evaluation of cellular immunity, including, among others, mitogen- and antigen-induced lymphocyte transformation, the rosette method of T & B lymphocyte quantitation, immunofluorescent staining in B lymphocyte quantitation, cytotoxicity assay, quality control procedures, primary and secondary immunodeficiencies.

This videotape program is ideal for residency training programs or continuing medical education for pathologists, immunologists and all physicians interested in immune reactions. The full program comes with videotape in choice of 3 popular formats (1/2" BETA, 1/2" VHS, 3/4" U-Matic), a 37 page program monograph and one Category I CME set. It is available for purchase at \$275 or for rental at \$60 per month. For further information contact:

The American Society of Clinical Pathologists  
P.O. Box 12073  
Chicago, Illinois 60612  
U.S.A.

(312) 738-4863



\*\*\*\*\*  
LOGO DESIGN  
\*\*\*\*\*

6th International Congress of Immunology

Toronto 1986



Dr. J. Bienenstock



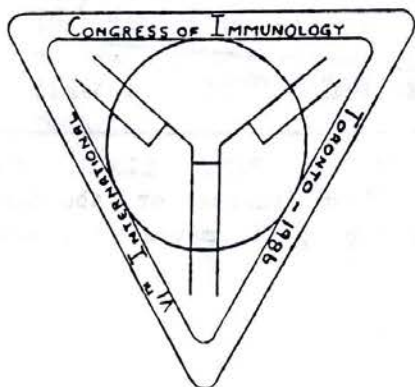
Dr. J. Bienenstock



Dr. J. Kellen



Dr. J. Kellen

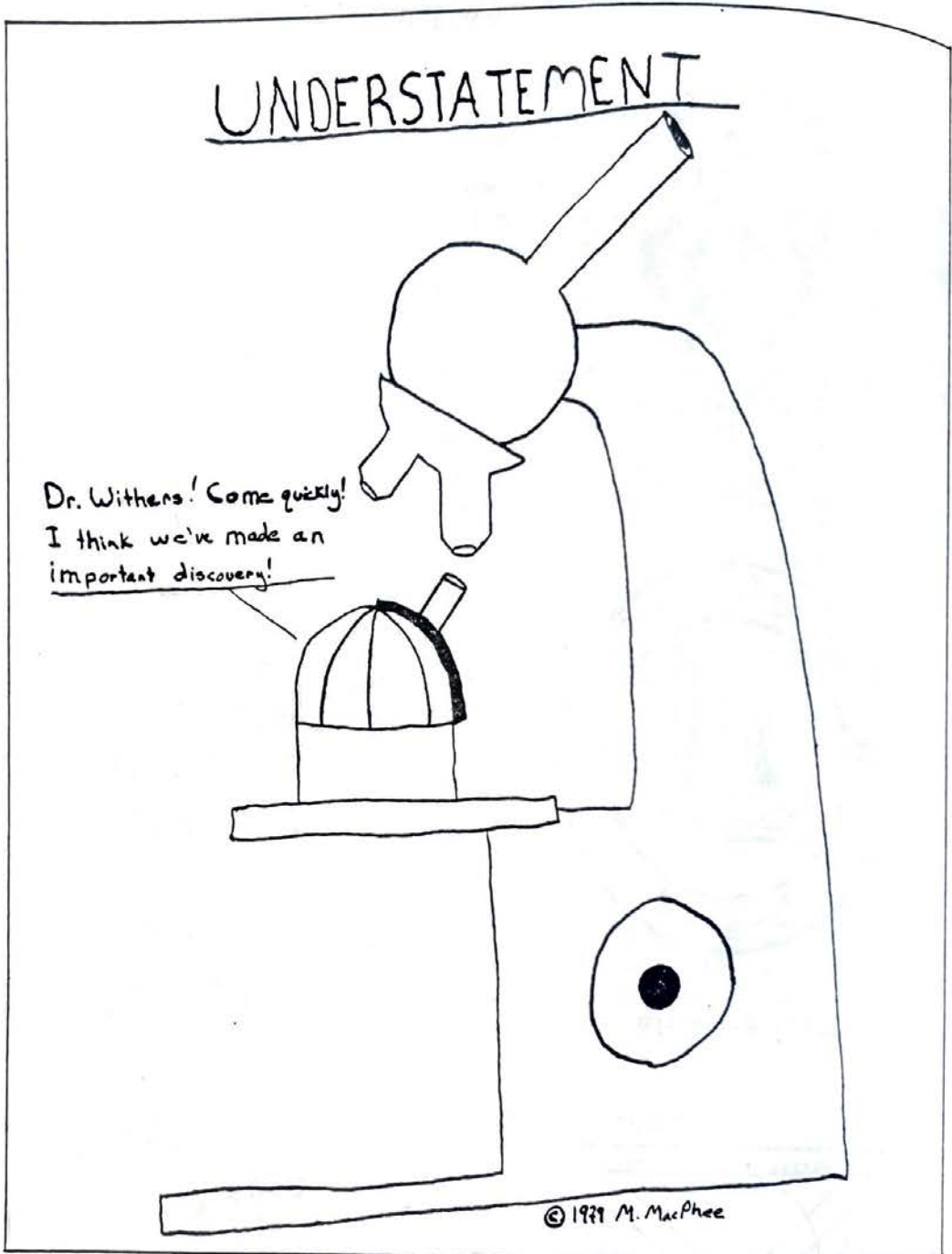


Dr. P. Shearman



Dr. H. Metzger

\*\*\*\*\*  
DRAWBACKS & QUOTES  
\*\*\*\*\*



Contributions of CARTOONS, HUMOROUS QUOTES, PUNCH LINES, and RESPECTABLE SHORT STORIES with either insufficient or abundant 'immunologic contents' are welcomed. If the spirit moves you, send us a laugh.



\*\*\*\*\*  
CONFERENCES AND TRAINING COURSES  
\*\*\*\*\*

Gordon Research Conference

"IMMUNOCHEMISTRY AND IMMUNOBIOLOGY"

Holiday Inn  
Ventura, California

February 21-25, 1983

The topics at the Conference will include:

MHC genes and products (PATRICIA JONES)  
T cell receptors (JUDITH KAPP)  
Antigen processing (HOWARD GREY)  
Membrane-coated pits and receptors (EMIL UNANUE)  
Lymphocyte interactions and specificity (JONATHAN SPRENT)  
Rearrangements and expression of immunoglobulin genes (ROY RIBLET)  
Antibody structure and variation (MALCOLM GEFTER)  
Nonspecific mediators (JOHN FARRAR)  
Suppressor and helper mechanisms (HARVEY CANTOR)

Registration and Reservations: Individuals interested in attending the Conference are requested to send their applications to the office of the Director. It is important that you submit your application promptly in order that it may be given early consideration by the review committee. This is particularly necessary for those Conferences which are customarily over-subscribed and for which it is often necessary to establish a waiting list.

Applications must be submitted in duplicate on the standard application form which may be obtained from the office of the Director. This procedure is important because certain specific information is required in order that a fair and equitable decision on the application may be made. Attendance at each Conference is limited. Only registered conferees are permitted in the meeting room.

Alexander M. Cruickshank, Director  
Gordon Research Conferences  
Pastore Chemical Laboratory  
University of Rhode Island  
Kingston, Rhode Island 02881

Clinical Chemistry Course

"RADIOIMMUNOASSAY"

University of Toronto  
Toronto, Ontario

May 30 - June 3, 1983

A 5-day course on Radioimmunoassay as a generic procedure in the clinical chemistry laboratory will be offered by the Department of Clinical Biochemistry. The topics of the course will include:

Physics of radioactivity and measurement  
Elements of radioimmunoassays  
Antibody preparation, labelling and separation  
Quality control and guidelines in setting up new assays  
Data reduction  
Safety in working with radioactive materials

Certain well established assay methods will be discussed and it is expected that at least one lecture will be given on non-radioisotopic immunoassays.

Direct all enquiries to: Dr. W. Paul  
Professor  
Department of Clinical Biochemistry  
Banting Institute  
University of Toronto  
100 College Street  
Toronto, Ontario M5G 1L5



2nd Annual A.A.I. Course in Advance Immunology

"REGULATORY ELEMENTS OF THE IMMUNE SYSTEM"

The Duke Marine Laboratory  
Beaufort, North Carolina

June 5-12, 1983

This course will delve into recent advances in immunobiology, immunogenetics, and molecular and clinical immunology as they relate to immune regulation. Topics will include: MHC gene organization and control, MHC restriction and Ir gene control, regulation by interleukins, T suppressor cell clones and hybrids, B cell growth and differentiation, immunoglobulin gene organization and isotype switching, effector mechanisms and immunologic analysis and manipulation in human disease.

This course is intended primarily for advanced graduate students, postdoctoral and clinical fellows, who wish to expand their knowledge of modern immunology. This is not a survey course, although minimal review materials will be introduced. The registration fee will be \$275.00, not including room and board. Dormitory space at the Duke Marine Lab has been arranged. Since space is limited, early application is recommended. To apply for the course, please submit a letter documenting your background in immunology and stating your reasons for wishing to attend, as well as current research/teaching activities and a brief c.v., no later than 1 March 1983 to:

Dr. David W. Scott  
AAI Course  
Box 3010  
Division of Immunology  
Duke University Medical Centre  
Durham, North Carolina 27710

8th Summer Program

"METHODS IN IMMUNOLOGIC DIAGNOSIS"

The Ernest Witebsky Centre for Immunology  
Buffalo, New York

June 6-24, 1983

First Week

Precipitation in gel  
Use of laboratory animals  
    bleeding, injecting, adjuvants  
Immunoelectrophoresis  
Counter electrophoresis  
Crossed electrophoresis  
Complement fixation  
Total complement assay  
Mixed agglutination  
Passive agglutination  
    latex, tanned cell, CrCl<sub>3</sub>  
Radioimmunoassay (routine)  
Preparation of immunoglobulin  
    fractions

Second and Third Week

Cellular techniques  
    lymphocyte preparation  
    mixed lymphocyte reactions  
    phagocytosis  
    chemotaxis  
    cell sorting techniques  
    T and B cell assays  
    lymphocyte stimulation  
Advanced radioimmunoassay  
Determination of complement  
    components  
ELISA techniques  
Thymectomy and Bursectomy  
    techniques  
Affinity chromatography  
Monoclonal antibody techniques  
Serodiagnosis of autoimmune  
    hemolytic anemias

These will consist of laboratory exercises and lectures. The emphasis is upon all participants performing the procedures in person at the laboratory bench. Electives will be arranged for students with special interests. These will take place in both the second and third weeks of the program. The fee for the two-week course (advanced techniques only) will be \$600.00. The fee for the three-week course (basic techniques included) will be \$750.00. PLEASE NOTIFY THE WITEBSKY CENTRE IF YOU ARE INTERESTED IN THE BASIC TECHNIQUE.

On-campus housing will be offered at approximately \$60.00 per week. Campus meal facilities will be available for breakfast and lunch.

For further information, write: Dr. J.F. Mohn  
The Ernest Witebsky Centre  
for Immunology  
210 Sherman Hall  
Buffalo, New York 14214



SCHEDULED MEETINGS (1983)

<u>DATE AND PLACE</u>	<u>TITLE/TOPIC</u>	<u>INFORMATION</u>
<u>January 23 -</u> <u>February 4</u>  London, England	THE LYMPHOCYTES (a course)	The British Council c/o British High Commission 80 Elgin Street Ottawa, Ontario K1P 5K7
<u>February 7-11</u>  Innsbruck, Austria	12th Postgraduate Immunofluorescence Course	Prof. Dr. G. Wick Institut fur Allgemeine und Experimentelle Pathologie Universitat Innsbruck A-6020 Innsbruck Austria
<u>February 16-17</u>  New York, N.Y.	ANTINEOPLASTIC AND IMMUNOGENIC EFFECT OF TUFTSIN: A NATURAL MACROPHAGE ACTIVATOR	Conference Director New York Academy of Science 2 East 63rd Street New York, N.Y. 10021
<u>February 21-25</u>  Ventura, California	Gordon Research Conference IMMUNOCHEMISTRY AND IMMUNOBIOLOGY (see p. 23)	Dr. A.M. Cruickshank Director, Gordon Research Conferences Pastore Chemical Laboratory University of Rhode Island Kingston, Rhode Island 02881
<u>March 13-25</u>  London, England	MEDICAL IMMUNOLOGY: RECENT ADVANCES (Course 242)	The British Council c/o British High Commission 80 Elgin Street Ottawa, Ontario K1P 5K7
<u>March 23-25</u>  Guildford, U.K.	1st International Meeting on Cell Biochemistry and Function	Prof. J.W. Bridges Institute of Industrial & Environ. Health and Safety University of Surrey Guildford, U.K. GU2 5XH
<u>April 7-9</u>  Memphis, Tennessee	2nd International Conference on Immunogenetics of the Rabbit	Dr. Louis T. Adler Division of Immunology St. Jude Children's Res. Hospital P.O. Box 318 Memphis, Tennessee 38101

SCHEDULED MEETINGS (1983)

<u>DATE AND PLACE</u>	<u>TITLE/TOPIC</u>	<u>INFORMATION</u>
<u>April 9-14</u> Chicago, Illinois	Annual Meeting of American Society of Clinical Pathologists	American Society of Clinical Pathologists 2100 West Harrison Street Chicago, Illinois 60612
<u>April 10-15</u> Chicago, Illinois	Annual Meeting of the American Association of Immunologists	The American Association of Immunologists 9650 Rockville Pike Bethesda, Maryland 20014
<u>May 16-19</u> Houston, Texas	1st International Congress on Cyclosporin	Sherry Smith University of Texas Med. School at Houston Office of Continuing Education 6431 Fannin, MSMB 3242 Houston, Texas 77030
<u>May 29-31</u> Banff, Alberta	3rd Annual Pacific Immunology Group Meeting	The Division of Continuing Medical Education 12-103 Clinical Sciences Bldg The University of Alberta Edmonton, Alberta T6G 2G3
<u>May 30-June 3</u> Toronto	Clinical Chemistry Course RADIOIMMUNOASSAY (see p. 24)	Dr. W. Paul Dept. of Clinical Biochemistry University of Toronto 100 College Street Toronto, Ontario M5G 1L5
<u>June 5-12</u> Beaufort, North Carolina	2nd Annual A.A.I. Course in Advanced Immunology REGULATORY ELEMENTS OF THE IMMUNE SYSTEM (see p. 25)	Dr. David W. Scott Box 3010 Division of Immunology Duke University Medical Centre DURHAM, NORTH CAROLINA 27710
<u>June 6-24</u> Buffalo, New York	8th Summer Program METHODS OF IMMUNOLOGIC RESEARCH AND DIAGNOSIS (see p. 26)	Dr. J.F. Mohn The Ernest Witebsky Centre for Immunology 210 Sherman Hall Buffalo, New York 14214
<u>June 13-17</u> Ottawa	26th Annual Meeting of the Canadian Federation of Biological Societies	Dr. G.R.F. Davis P.O. Box 498, Sub 6 Saskatoon, Saskatchewan Canada S7N 0W0



extensive postdoctoral experience in veterinary bacteriology, including bovine mastitis. The salary for this position, which is subject to final budgetary approval, is negotiable. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. Enquiries and applications should be directed to Dr. J.B. Derbyshire, Chairman, Department of Veterinary Microbiology and Immunology, University of Guelph, Ont. N1G 2W1

#### ASSISTANT/ASSOCIATE PROFESSORS

Two positions. Annual appointments. Candidates should have a strong background in one or more of the areas of immunology/immunogenetics, endocrinology or molecular biology and be prepared to develop a strong research program in one or more of the following areas: immunology as related to diabetes, mechanisms of insulin action or genetics as related to diabetes. The successful candidates will be expected to attract independent research grants and to spend at least 75% of his/her time carrying out an independent research program. Teaching obligations will be minimal. Salary commensurate with qualifications and experience. Applicants should forward C.V., an outline of research interests and names of three references to: Dr. David H. MacLennan, Professor and Chairman, Banting and Best Dept. of Medical Research, University of Toronto, 112 College St., Toronto, Ont. M5G 1L6. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

#### PROFESSOR AND CHAIRMAN

Department of Biochemistry. PhD or MD. Established record of achievement in research in the discipline. Proven administrative skills. To provide academic leadership in research and teaching. Responsible for overall departmental administration. Salary to be negotiated. Write to Dr. D.W. Clarke, Associate Dean, Basic Sciences, Faculty of Medicine, University of Toronto, 1 King's College Circle, Toronto, Ont. M5S 1A8. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

#### IMMUNOLOGY RESEARCH ASSOCIATE

NSERC visiting fellowship in Canadian government laboratories. One to two years. \$22,000 p.a. (under review). Conducts research related to stress-induced alterations in immune function, neuro-endocrine regulation of immune processes, and liposome-mediated immunopotentiations. Recent PhD graduates in immunology or related disciplines. Must be Canadian citizen. For more information, write to Dr. P.N. Shek, Immunology Group, Defence and Civil Institute of Environmental Medicine, P.O. Box 2000, Downsview, Ontario M3M 3B9

#### MOLECULAR IMMUNOLOGY

Applications are invited for positions as Professor, Research Assistant, Research Associate, and Postdoctoral Fellows. To work with a team involved in the characterization and gene cloning of factors which regulate immune responses. Experience in cellular immunology,

T-cell cloning or the molecular genetics of mammalian cells would be advantageous. Salary will depend on qualifications and experience. Applicants should submit their curriculum vitae and the names of three references to Dr. R.C. Miller, Head, Dept. of Microbiology, University of British Columbia, 300-6174 University Boulevard, Vancouver, B.C. V6T 1W5

#### RESEARCH IN IMMUNOLOGY

The Immunological Sciences Research Group at the University of Calgary is seeking an individual with expertise in mediators involved in immune regulation to join their actively expanding group. Applicants must be capable of independent research and will be eligible for nomination for funding from the Alberta Heritage Foundation for Medical Research, a newly established foundation for the support of medical research in the province. Candidates for appointment at the assistant professor level are preferred but more senior individuals will definitely be considered. Remuneration will be based upon salary scales at The University of Calgary. In accordance with Canadian immigration requirements this advertisement is directed to Canadian citizens and permanent residents. Qualified individuals outside of Canada are encouraged to apply however. Deadline for receipt of applications is March 31, 1983. Interested candidates should send their curriculum vitae, a brief description of field of interest and three names of reference to: Dr. David S. Matheson, Chairman, Immunological Sciences Research Group, Faculty of Medicine, The University of Calgary, 3330 Hospital Drive N.W., Calgary, Alberta T2N 4N1 Canada



"LOST" MEMBERS

The following is a list of members whose mail is constantly being returned with the remark that the addressee has moved without leaving a forwarding address. Anyone knowing the current address of these members should contact the Secretary-Treasurer. The former affiliation is listed with each name.

BALDWIN, J.F., Orange, California  
KHAN, R.H., McMaster University, Hamilton  
MANICKAVEL, V., London, Ontario  
PATY, D.W., University Hospital, London, Ontario  
PERSAUD, D., Queen's University, Kingston  
SOCKEN, D.J., University of Toronto, Toronto  
SZYMANSKA, I.Z., University of Toronto, Toronto  
WAKKERY, J.A., Dalhousie University, Halifax

ACKNOWLEDGEMENT

The Editor wishes to thank Dr. John Bienenstock for his valuable help and co-operation in designing the front cover of the Bulletin.

Application for Membership  
(Please type or print)

NAME: \_\_\_\_\_

AFFILIATION: \_\_\_\_\_

POSITION HELD: \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_

\_\_\_\_\_

PROFESSIONAL QUALIFICATIONS (Degrees): \_\_\_\_\_

SPECIAL FIELD OF INTEREST: \_\_\_\_\_

\_\_\_\_\_

N.B. Candidates should append a CURRICULUM VITAE and a LIST OF PUBLICATIONS WITH FULL TITLES.

\_\_\_\_\_  
(Candidate's Signature)

SPONSORS (Members of the Canadian Society for Immunology)

Name: _____	Name: _____
Address: _____	Address: _____
_____	_____
Signature: _____	Signature: _____

INDICATE MEMBERSHIP CATEGORY RECOMMENDED

(1) Member \_\_\_\_\_ (2) Associate Member \_\_\_\_\_ (3) Corresponding Member \_\_\_\_\_

(4) Emeritus Member \_\_\_\_\_ (5) Student Member \_\_\_\_\_

CANDIDATE: Please complete this form, obtain signatures of sponsoring members, and return in 11 copies (including appendices) to:

Dr. Arnold Froese, Department of Immunology  
Faculty of Medicine, University of Manitoba  
Winnipeg, Manitoba, Canada R3E 0W3

APPLICATIONS WILL BE CONSIDERED TWICE A YEAR, IN SEPTEMBER AND MARCH

(Francais au verso)



SOCIÉTÉ CANADIENNE D'IMMUNOLOGIE

Demande d'adhésion  
(Veuillez dactylographier)

NOM: \_\_\_\_\_

INSTITUTION: \_\_\_\_\_

POST OCCUPE: \_\_\_\_\_

ADRESSE POSTALE: \_\_\_\_\_

FORMATION PROFESSIONNELLE (Diplômes universitaires): \_\_\_\_\_

SUJET D'INTERET PARTICULIER: \_\_\_\_\_

N.B. Les candidats doivent joindre un CURRICULUM VITAE et UNE LISTE DES PUBLICATIONS INCLUANT LES TITRES

\_\_\_\_\_  
(Signature du candidat)

PARRAINS (Membres de la Société canadienne d'immunologie)

Nom: \_\_\_\_\_ Nom: \_\_\_\_\_

Adresse: \_\_\_\_\_ Adresse: \_\_\_\_\_

Signature: \_\_\_\_\_ Signature: \_\_\_\_\_

INDIQUER LA CATEGORIE RECOMMANDEE

(1) Membre \_\_\_\_\_ (2) Membre associé \_\_\_\_\_ (3) Membre correspondant \_\_\_\_\_

(4) Membre émérite \_\_\_\_\_ (5) Membre étudiant \_\_\_\_\_

CANDIDAT: Veuillez compléter ce formulaire, obtenir les signatures des parrains, et le faire parvenir en 11 copies (y compris les appendices) à:

Dr. Arnold Froese, Department of Immunology  
Faculty of Medicine, University of Manitoba  
Winnipeg, Manitoba, Canada R3E 0W3

LES DEMANDES D'ADHESION SERONT EXAMINEES 2 FOIS PAR AN, SEPTEMBRE ET EN MARS

(English on reverse side)