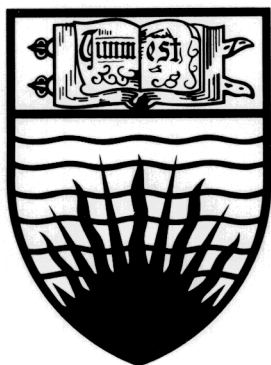




The President's Report 1977-78

The University of British Columbia

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The report of President Douglas T. Kenny
to the Senate and Board of Governors
of the University of British Columbia
for the 1977-78 academic year.

The University of British Columbia

Foreword

To the Board of Governors and Senate,
The University of British Columbia
Ladies and Gentlemen:


My report on the 1977-78 academic year records the major accomplishments of the University of British Columbia as well as the continuing problems of a period of adjustment necessitated by static enrolments, financial limitations and inflation.

I take this opportunity of expressing my gratitude to the individuals and groups who continue to ensure that the academic enterprise at UBC remains fundamentally sound: the Board of Governors and Senate; the deans, department heads and members of the teaching and research establishment; the employed staff; and our students. Their energy and perseverance, often in the face of overcrowding, sub-standard working conditions and shortages of funds, are commendable and have my continuing admiration.

In the academic year under review, the University took additional steps to ensure future academic excellence. Departmental reviews initiated in recent years have now been extended to entire faculties in order to identify areas that must be strengthened academically. One of our major objectives in the immediate future will be to find the resources to improve all areas of the University so that we are able to offer the overall high standard of higher education that present and prospective students have a right to expect.

Only if we strive to achieve this objective can we hope to retain the confidence of the taxpayers who support us and make a reasoned case for increased financial support. To do less would be to fail in our responsibility to the future soundness of the province and the nation.

Cordially yours,

A handwritten signature in black ink, reading "Douglas T. Kenny". The signature is fluid and cursive, with the first name "Douglas" written in a larger, more prominent script than the last name "Kenny".

Douglas T. Kenny
President



During the 1977-78 academic year UBC took new and important steps towards the goals of seeking self-renewal and a new sense of purpose to meet the problems posed by static enrolments and the cancer of creeping inflation.

The President's Report 1977-78

*Whereof what's past is prologue; what to come
In yours and my discharge.*

The Tempest, Act II, Scene I.

The past plays its part in shaping the future. Higher education in British Columbia, and indeed throughout North America, is at a transition point in its development marked by the cessation of growth in the student body. It is therefore useful to examine our history in an attempt to sketch the outlines of our objectives for the future. The history of UBC divides itself naturally into three parts: the *pioneering decades* from 1915 to 1945; the *golden age* from the mid-1940s to 1970, a period marked by rapid growth and adaptation to change; and the *contemporary age* in which we now seek self-renewal and a new sense of purpose.

THE PIONEERING DECADES. During this period, handicapped by birth during World War I, by adolescence during the Great Depression with its chronic shortage of funds, and finally in its early maturity by the sacrifice of its own needs to those of the nation during World War II, the University could not attain the academic heights of which it dreamed in its quest for excellence. Nevertheless its record at that time is outstanding in two respects. First, a group of outstanding teachers offered "a sparkling armada of promise" to the undergraduate body, so that excellence in teaching remains a primary goal today. Second, through its activities in continuing education, then called extension, the University made its presence felt and its resources available throughout the entire province. Service to the educational needs of the wider community is still a primary goal today.

THE GOLDEN AGE. The golden age was marked by spectacular growth and the emergence of the University on the national and international scenes as an important, comprehensive institution of higher learning characterized by increasingly pluralistic goals and objectives. By the mid-1940s UBC was a modest institution with only three faculties, Arts

and Science, Applied Science, and Agriculture, but its enrolment, already swelling with the ranks of returning veterans of World War II, reached 6,632 in 1945-46, more than double the enrolment of 2,528 in 1940-41. Because of the educational needs of the veterans, rising birth-rates and the rising expectations of the public, enrolment continued to increase in an unprecedented manner. More than 10,000 students registered in 1960-61, more than 15,000 in 1964-65 and some 20,195 in 1970-71. In 1970 Senate, alarmed by the prospect of ever-increasing growth, set an upper limit on enrolment of 22,000 undergraduate and 5,000 graduate students, 27,000 in all. As we shall see, circumstances changed and that limit was never attained.

In meeting the demands of the new generation of students for marketable skills and the demands of an increasingly technological society for highly trained professionals and scientists, the University did more than cope. It altered out of all recognition and in doing so demonstrated a remarkable ability to adapt to changing circumstances in the province, the nation and the world. Thus by 1964 the vital task of undergraduate and graduate education was conducted by 12 faculties and included professional programs in Agriculture, Architecture, Commerce and Business Administration, Dentistry, Engineering, Forestry, Home Economics, Law, Librarianship, Medicine, Nursing, Pharmacy, Rehabilitation Medicine, Social Work and the training of school teachers in addition to the traditional fundamentals of the arts, humanities, social sciences, and sciences.

The post-war growth in enrolment and in the number of faculties and programs was accompanied by an equally impressive growth in research and graduate studies. UBC awarded its first four Doctor of Philosophy degrees in 1950. By 1965 Senate had authorized Ph.D. programs in 35 departments and 53 Ph.D. degrees were granted that year. Five years later, in 1970, 161 Ph.D. candidates graduated and today the degree is offered by some 50 departments which are broadly representative of most major areas of knowledge. The vast majority of Ph.D. degrees awarded in the 1960s and 1970s were in the pure and applied sciences. Indeed, as late as 1966 only two Ph.D.'s had been granted in the humanities and none in the social sciences. The disparity in the rates of growth of Ph.D. programs between the sciences and the arts directly reflects the impact of World War II and Sputnik I on the policies of the federal government in supporting research at universities. Historically, the federal government has always been the most important source of research funds for Canadian universities. Between 1966 and 1971 research funds received by UBC from all sources doubled to a little over \$15.5 million a year, with the federal government providing about 73 per cent of this total. Indeed it is evident that the federal government, through its granting agencies, particularly the National Research Council, has had about as great an impact in changing the nature of the University as the provincial government has through its operating grants for instructional purposes.

All these developments greatly strengthened

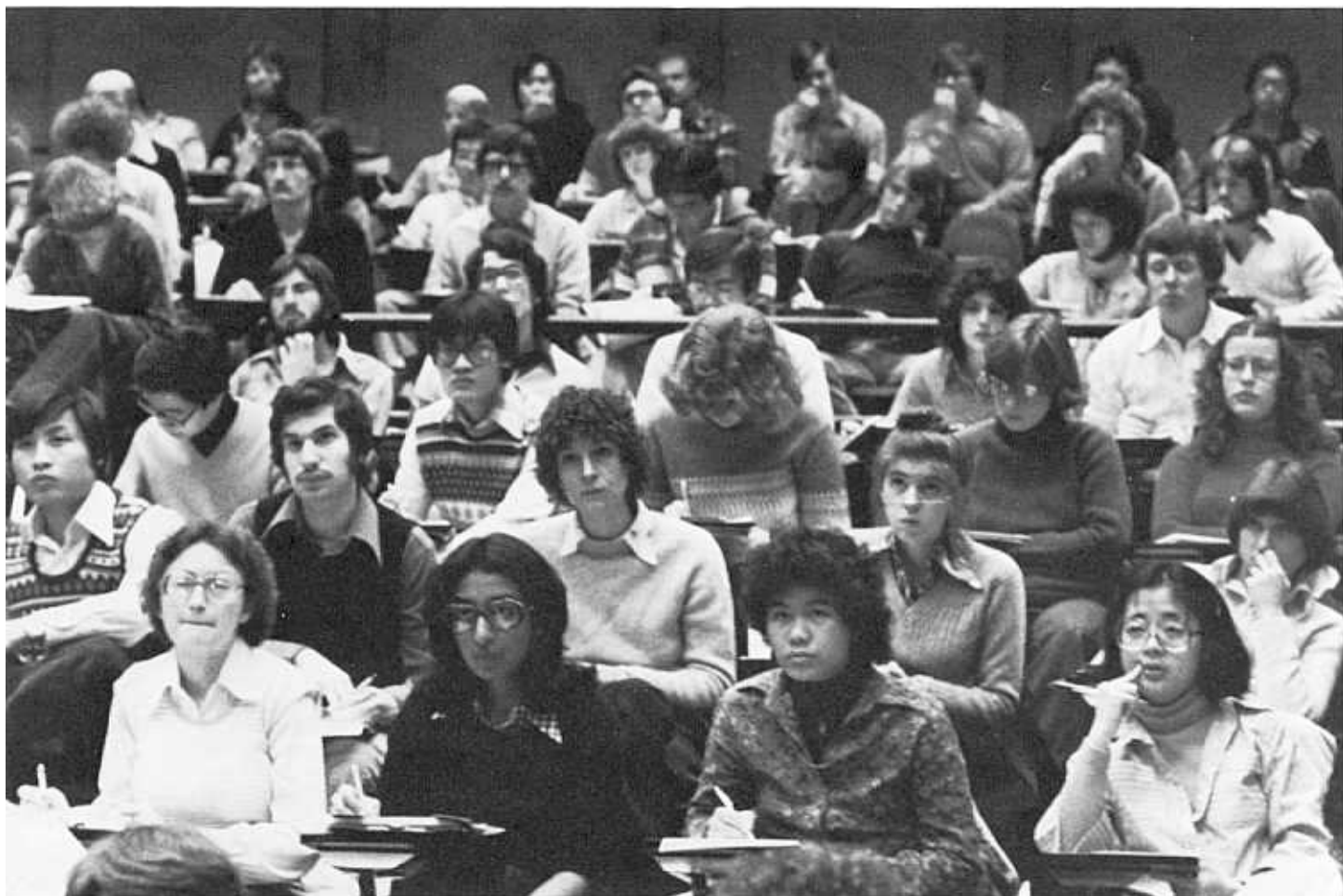
the University's overall ability to perform its primary functions in serving society by teaching, by training for the professions, by the pursuit of new knowledge, by offering programs in continuing education and by serving as an independent source of opinion and expertise for the greater good of the province and the nation. Unfortunately, the very rapidity of the expansion from 1945-1970 left areas of weakness because increases in operating revenues did not keep pace with growth. Many of these deficiencies are in the services that support the academic endeavor, but there are also many academic programs that lack depth and resources and are consequently still very much less than first class.

THE CONTEMPORARY AGE. The contemporary age, beginning in 1970-71, is characterized first, by the levelling off in enrolment, in which growth has now ceased, and second, by relentless increases in costs, largely because of inflation. The extraordinary rate of growth that marked the golden age will not be repeated in the foreseeable future, in which winter enrolment is expected to hover around 20,000, well below the limit of 27,000 set by Senate in 1970. Yet costs continue to increase. Readers of the president's reports from 1970 to 1977 will be all too familiar with the consequences of minimal increases in operating grants, inadequate capital grants, static research funding and the serious encroachments of inflation. These realities have seriously threatened the quality of the academic enterprise. More than that, they have made the University acutely uncomfortable, made it aware that it is now in circumstances that are entirely different from those of the 1950s and 1960s, made it aware that it must seek self renewal and a new sense of purpose if it is to overcome the qualitative deficiencies which were glossed over in the euphoria of post-war expansion.

The three most acute problems currently facing UBC are: (1) Its requirements for modern facilities and buildings to replace the outmoded and substandard accommodations of the post war period; (2) Its urgent need to correct deficiencies in many of its existing programs; and (3) The cancer of continuing inflation.

For the long term the thrust must be toward: (1) Exploration of imaginative new developments in teaching and research; (2) Improvement of academic standards in all our programs, undergraduate, professional and graduate; and (3) The achievement of excellence in all that the University does.

Indeed, the University would be failing in its responsibility to itself, to the company of educated men and women everywhere and to the public at large were it to accept any lesser aims. Only by expressing these objectives and demonstrating our determination to strive to attain them can we hope to retain the confidence of the taxpayers who support us and make a reasoned and reasonable case for improved financial support. The University should aspire to lead and not be content with minimal levels attained elsewhere.



THE 1977-78 ACADEMIC YEAR. During 1977-78 the University took new and important steps towards achieving the goals and objectives outlined above. Each of these will be described in greater detail in the sections that follow in this report, but it is appropriate to summarize them here.

At its first meeting of the academic year Senate approved higher requirements for admission to the University. The new requirements will mean that UBC entrance standards are among the highest in Canada. These will be phased in over the next three years and will be fully in place in September, 1981, thus allowing students now in high school to adjust their programs accordingly.

Senate also approved motions calling for "annual, systematic, objective and cumulative evaluations" of all undergraduate courses for which it is practical to do so and of the performance of all faculty members, so that teaching evaluations can be considered in making decisions affecting reappointment, promotion and the granting of tenure.

The section of this report on teaching and curriculum will, I am sure, impress readers with the number of faculties and departments which have intensified their efforts to renew and revise their programs and courses. In addition, a number of new programs, ranging from coal

engineering to teacher training in the Yukon, have been initiated.

Research grants to the University in 1977-78 increased by 24 per cent over 1976-77. A high proportion of our research projects provide direct benefits to the people of British Columbia and Canada. Many of these are described in the section on research.

Each of these aspects of University activity in the past year indicates that UBC takes seriously its obligation to be responsive to many forces, including the accumulation of knowledge that leads to new fields of study, societal needs and student interests.

However, there are areas of weakness in even the strongest departments and faculties. Steps have been taken to identify such areas and to find the resources to strengthen them. Departmental reviews have been undertaken in several faculties and, for the first time in the history of UBC, full-scale reviews of two major faculties, Education and Science, will be undertaken in 1978-79. The review committees will be composed of experts chosen both from within and outside the University and the province. Review of these two faculties is appropriate at this time because of the resignation of Dr. John Andrews as dean of Education to return to teaching and research at UBC, while the dean of Science, Dr. George Volkoff, reaches retirement age on June 30, 1979.

In addition to introducing a number of new programs, many UBC departments and faculties intensified their efforts to renew and revise the curriculum to make it responsive to new knowledge resulting from research, the perceived needs of the economy and the interests of students.

The purpose of these faculty reviews is not inquisitorial; it is to identify needed improvements in the curriculum, in the preparation of faculty members, and in the resources and equipment they require to perform their functions in teaching and research. I am only too aware of some of these needs in advance. The commonest pleas of deans and department heads are for funds for additional faculty and staff to strengthen areas of weakness and to replace outmoded equipment.

The number of teachers and researchers employed at UBC has been virtually constant for the past few years. We must therefore continue to press our case before the Universities Council so that we can improve our faculty-student ratio and also provide faculty with the increasingly sophisticated equipment they need in order to maintain first-class academic standards. Among the 23 largest universities in Canada, UBC ranks first in the proportion of its operating funds allocated for academic purposes and a distant last in the proportion allocated for non-academic (administrative) services. This speaks volumes about where the University's priorities lie and should lead to sympathetic consideration of our requests for operating funds.

Our objective in the past year has been, as it will be for the future, to make UBC a better University for its students and the people of British Columbia by upgrading entrance standards, by improving standards of teaching and research, and by continuing to make the expertise of faculty available to the community whenever we have the resources to do so.

Teaching and the curriculum

I have been impressed, in reading the reports of the deans of UBC's 12 faculties for the 1977-78 academic year, with the continuing efforts that are being made to review and revise the University's curriculum to make it responsive to the continuing accumulation of new knowledge through research, the perceived needs of the economy and the interests and needs of students. I am confident that our curriculum in all academic units is being updated to meet the educational conditions and needs of the 1980s. Our ongoing process of review and the adaptability of the curriculum are designed to ensure program quality.

It is sometimes said that the University continuously adds courses to its curriculum without updating or changing existing ones or discarding those that are out-of-date. These accusations are not true. There is a continuous process of innovation at the University involving the invisible evolution of existing courses, deletions of outdated courses and the introduction of new courses and programs, although this latter process has been slowed somewhat in recent years as the result of financial cutbacks.

The invisible evolution of existing courses is carried out regularly by our teaching staff who are sensitive to new developments in their disciplines. In many cases, these changes are made annually and require nothing more than professorial initiative. However, over a period of time, a course or program will change to such a degree that it is scarcely recognizable from the one that was offered a few years earlier. This, of course, reflects the fact that knowledge in all fields combined is now doubling every 8 to 12 years. In some fields, the rate of accumulation is even faster.

The process by which the University curriculum alters is not a haphazard one. Changes proposed at the departmental level are subject to review by departmental and faculty curriculum committees, which make recommendations to full meetings of each faculty before proposals are forwarded to Senate, where they are again considered by that body's curriculum committee. Special attention is given to proposals for new programs by a sub-committee of the Senate curriculum committee to ensure that the new program is academically sound and does not needlessly duplicate academic work offered elsewhere in the University or at other provincial institutions. These detailed procedures are a reflection of the University's insistence on the establishment of programs of high academic quality. The overriding policy is the commitment to quality.

Courses and programs approved by Senate must also be submitted to the Board of Governors and, even if approved, are not implemented until funding is assured.

The result of this lengthy process is continuous change in the University's inventory of

In the coming year it is my hope that the Universities Council will give serious consideration to our request for additional funds that will enable us to hire additional faculty members who will bolster the resources of many departments to give them the depth and breadth they now lack. Given this University's responsibilities as a centre of scholarship, the attainment of the objective of qualitative improvement requires that new and additional faculty members be appointed. Simple reallocation of existing faculty resources will not achieve this goal. Doubtless, many new faculty members will want to introduce new courses, but that is as it should be. It would make little sense to hire an expert who was unable to offer academic work in his or her specialty.

In what follows, I have selected from the reports of the deans of the faculties those items which illustrate the continuing restructuring of the University curriculum, as well as new programs approved in the 1977-78 academic year.

AGRICULTURAL SCIENCES. This faculty reviewed and modified its curriculum to ensure that it is in harmony with the needs of the students, the discipline and the community the faculty serves. The Department of Animal Science plans increased research in range beef production and will expand present programs in reproductive biology to make it a true area of excellence.

At its meeting in February, 1978, Senate approved a new program that will lead to the Bachelor of Landscape Architecture degree. The four-year program, which will be offered in the Department of Plant Science, will be available to students in the 1979-80 academic year if adequate funds are approved.

APPLIED SCIENCE. The Department of Mineral Engineering began the development of an appropriate curriculum in coal engineering following approval by the Universities Council of a UBC proposal to introduce a fourth-year option in this discipline. Visiting experts in coal engineering provided guidance in course work and appropriate teaching laboratories. The program is designed to alleviate a serious shortage of Canadian coal experts, whose knowledge is vital for the exploitation of huge coal reserves in B.C., which will become more valuable as the energy crisis deepens.

ARTS. Significant curriculum changes in UBC's largest faculty included: extensive revision of the Sociology curriculum to ensure graduating students have marketable skills and to provide breadth to make a meaningful choice of specialization; a reorganization of elementary and intermediate Japanese-language courses in Asian Studies to make courses more accessible to day and evening students; further revisions of courses in Hispanic and Italian Studies to provide opportunity for a more flexible major in three areas — Spanish language, literature and Latin American literature; institution of a new major in family science in the School of Home Economics to open up opportunities for graduates to enter areas other than teaching, e.g., in gerontology and the preparation of pro-

grams in family life and nutrition; complete restructuring of the core music theory program; and addition of a course in Psychology on the aging process, thus further strengthening the growing interest in gerontological studies.

Regretably, the Faculty of Arts has been unable to introduce the following degree programs because of budget constraints: new graduate and undergraduate courses in writing children's literature in the Department of Creative Writing; and Ph.D. programs in fine arts and theatre history.

COMMERCE AND BUSINESS ADMINISTRATION. The faculty completed a review of its undergraduate program in the academic year which led to extensive discussion and debate at full faculty meetings. The revised B.Com. program is designed to further bridge the gaps between theory and practice in the fields of knowledge needed by modern managers. The revised program will be considered by Senate in the coming academic year.

The faculty also continued planning for the second year of the evening Master of Business Administration program. A revised M.B.A. program is being prepared to bring it in line with recent developments and to allow greater flexibility than has been possible in the past.

Summarizing the faculty's year, Dean Peter Lusztig says it has been an active one "despite serious manpower shortages.... We had neither the faculty nor the manpower resources to explore innovative and new programs needed to serve better the businesses and governments who hire our graduates."

DENTISTRY. The faculty altered its clinical curriculum during the year to extend clinical instruction to students in the second year. This change has, however, strained the faculty's clinical facility by interrupting the free flow of students through it.

In the coming academic year the faculty will be selecting students for entry in 1979 into a new Master of Science program in the field of periodontics.

EDUCATION. In November, 1977, I had the pleasure of visiting Whitehorse in the Yukon to take part in the official opening of the Yukon Teacher Education Program, funded by the Yukon government and staffed by members of the UBC Faculty of Education. The first class of 22 students enrolled for the program will receive certificates enabling them to teach in elementary schools in the Yukon after one year of study. A second program for high school graduates or mature students who meet UBC entrance requirements is planned.

The faculty's new five-year program leading to a Bachelor of Education degree in special education got underway in September, 1977. The purpose of this program is to prepare competent generalists to work with the estimated eight per cent of children with mild handicaps in a variety of school settings.

The Centre for the Study of Curriculum and Instruction increased significantly the number of graduate students enrolled for master's degrees and the degree of Doctor of Education.

The centre, with financial assistance from a variety of sources, also produced 11 publications, many of which are being used in graduate and undergraduate courses in Canada and the United States.

As the result of a careful consideration of the faculty's administrative structure, the divisions of elementary and secondary education were united under the title of Undergraduate Programs with assistant directors and advisers responsible for implementing programs and advising students, and the director and associate directors responsible for policy matters and program planning. In the coming academic year attention will be given to reorganization of the central administration and the 22 "departments" of the faculty. The aim of these changes, says Dean John Andrews, is greater efficiency in administration and improved communication with the faculty.

Budgetary restraints prohibited the introduction of five Senate-approved courses in Education — two general education courses at the third-year and graduate levels and two fourth-year education courses.

FORESTRY. Senate approved a proposal by the faculty to use the Diploma Course in Administration for Engineers as the basis for a Diploma in Administration for Foresters. Many foresters had been taking the latter program without receiving credit.

Lack of staff prevented the faculty from offering a fourth-year course entitled "Forest Landscape Analysis and Design," although the B.C. Forest Service has recommended it and employment opportunities are opening up.

GRADUATE STUDIES. The School of Community and Regional Planning completed a major curriculum review which will focus the school's program more clearly on two streams — urban and regional planning and resource management. The revisions will be subject to approval in the next academic year. The school co-operated with the School of Physical Education and Recreation in staging a professional workshop on planning for urban leisure services, and the site planning course for land surveyors completed its first full year of operation.

New graduate programs which received Senate approval in the academic year were: Master of Science in periodontics in the Faculty of Dentistry; a studio program leading to the Master of Fine Arts degree; and a one-year post-doctoral internship in clinical psychology in the Faculty of Medicine. In December, 1978, Senate approved the establishment of a Centre for the Study of Childhood within the Faculty of Graduate Studies. The centre will function as an interdisciplinary and co-ordinating facility that will foster research and other projects related to the study of children.

LAW. A faculty committee commenced a complete review of the curriculum and plans to submit recommended changes to the full faculty in 1979.

New developments in the faculty include: experimentation in the clinical program with the use of videotapes and simulation to teach the skills of advocacy; installation of a computer



terminal in the law library to facilitate the retrieval of legal documents and instruction in this kind of research for students; progress in negotiations for the installation of television cameras in three court rooms in the new Vancouver court house directly linking them to the UBC law school, together with the possibility of videotaping the proceedings for future instructional purposes.

MEDICINE. The curriculum changes in the undergraduate medical program approved some years ago by Senate are now in their third year and, as a result, the third year of the training program has been changed to a block system of teaching.

PHARMACEUTICAL SCIENCES. A broadly based curriculum overview committee held its first meetings in the 1977-78 academic year and submitted its first report containing five recommendations. The committee is made up of representatives of the four divisions of the faculty, the College of Pharmacists of B.C., the Canadian Society of Hospital Pharmacists, the B.C. Pharmacists' Society, and two undergraduate students. The terms of reference of the committee are all-encompassing; it is charged with reviewing the present curriculum and its relevancy to current and future practice in the profession, including the role of the pharmacist as a member of the health team.

Notable developments in the faculty in the academic year were extension of the clinical clerkship program for fourth-year students to include teaching at Shaughnessy Hospital, complementing a similar program already underway at three other Lower Mainland hospitals; and introduction in the third year of the phar-

Qualitative improvement in the process of education will be central to the University's future academic planning with evolutionary change of existing programs serving as the focal point of the process.

macy curriculum of clinical teaching assignments, which will see students rotated through the campus Extended Care Unit to learn the drug usage needs and problems of the extended-care patient.

Dean Bernard Riedel says the most serious problem facing the faculty is its inability to obtain funding for development of its clinical program, which needs to be expanded in various teaching hospitals and other patient-service areas with the faculty having some degree of control over teaching appointments. The faculty also hopes to develop a clinical pharmacokinetics program, which will require a specific laboratory in a clinical facility staffed by trained technical personnel.

SCIENCE. The Department of Chemistry undertook and had approved by Senate a major reorganization of the department's graduate courses which will come into effect in the 1978-79 academic year.

In the Department of Computer Science, the new curriculum entered its second year with major effects on other departmental courses. The Department of Geophysics and Astronomy completed arrangements to offer selected low-enrolment senior courses in alternative years only, a move that will improve teaching efficiency at little loss of flexibility to students and enable the department to achieve a better balance between graduate and undergraduate instruction.

Unfortunately, funding was not available to allow the faculty to implement some third- and fourth-year courses in biology approved by Senate in previous years.

Two motions approved at the March, 1978, meeting of Senate are of interest in this section of my report. The motions call for "annual systematic, objective and cumulative evaluations" of faculty members and instructors and of all undergraduate courses where it is practical to do so, and for the annual evaluations to include teaching evaluation and for teaching evaluation to be considered in reappointment, promotion and tenure decisions.

UBC faculties will have the power to develop and administer appropriate evaluation instruments and to decide on the timing for their administration as the result of other motions passed by Senate.

Research

Research is a primary function and an essential component in the intellectual life of the University of B.C. There are three reasons for this.

- Faculty members have an obligation to engage in the process of discovery that leads to the creation of new knowledge.

- Teaching students is so directly linked to research that a faculty member who engages in scholarship is likely to be a far more effective teacher than one who is not actively engaged in scholarly activities.

- Canada is stronger as a result of research carried on at universities. Accordingly, there is an obligation for faculty members, where they have the expertise, to assist in the solution of problems facing the nation. Basic research must, of course, remain the central focus of university research.

The leading universities of the world have a very strong research dimension. I am pleased to report that UBC is rapidly becoming a leading institution with a strong international reputation in the area of research.

I am not so sure, however, that the general policies of the federal government in the area of research funding are in keeping with the basic needs of Canada. The nation's research and development is threatened by unstable financing, as shown by the following facts.

- Since the start of this decade, federal funding of university research has declined by approximately five per cent in real terms.

- The federal government's research spending has decreased from 3.55 per cent of total government spending in 1970 to 2.02 per cent in 1976. In 1978, however, government spending on research did increase to 2.10 per cent.

- The ratio of expenditure on research and development in the natural sciences to the gross national product has declined from 1.21 per cent in 1970 to 0.92 per cent in 1977. The comparable figure in the United States and West Germany is approximately 2.5 per cent.

- Similarly, the ratio of national expenditure on research in the humanities and social sciences to the gross national product has dropped from 0.15 per cent in 1971 to 0.12 per cent in 1977.

Strong centres of university research have been harmed by the decline in federal support. Some research teams have had to be disbanded and many young and talented researchers have never been able to undertake careers for which they have been trained as a result of the fund shortage. In other cases, highly trained research technicians, who are supported by annual grants, have had to be let go. This short-sighted policy was undertaken at a time when the need for research to strengthen the long-term development of our resources and lives was never greater.

During the 1977-78 academic year there were some hopeful signs for UBC and other Canadian universities. The three federal granting councils were given budgetary increases almost sufficient to offset the effects of inflation, and two of them received an extra \$8 million for programs related to problems of national con-

cern. The Natural Sciences and Engineering Council and the Medical Research Council received budget increases of \$5 million and \$3 million respectively. Hon. Judd Buchanan, the Minister of State for Science and Technology, also announced the federal government's intention to raise the proportion of the gross national product spent on research and development from 0.92 per cent to 1.5 per cent by 1983. This commitment by the federal government is most welcome.

In announcing this new federal objective, Mr. Buchanan stressed that the government intends to increase funding in the area of industrial research and development, with more money available for research in "areas of national concern."

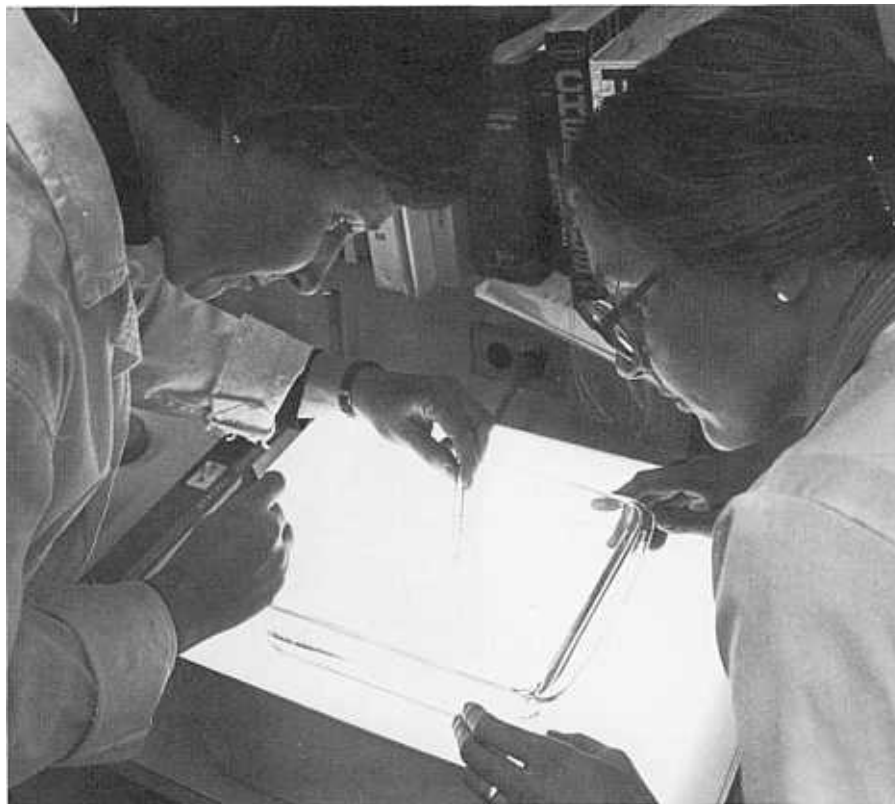
While I welcome this federal initiative, I want to sound two notes of caution. First, it seems likely that money will be available for research of an applied nature where the outcome will be of immediate value to Canadian business and industry. This is all well and good, but it fails to acknowledge that applied science can only thrive in an atmosphere where there is equal emphasis on basic research. Without a sound understanding of basic science we have little hope of stimulating industrial development in Canada. Traditionally, universities have been the institutions where most basic research in Canada has been carried out. I sincerely hope that support of university research groups will not be sacrificed for the mirage inherent in limiting research to the development of new products and technologies.

Universities, in fact, have a unique contribution to make to the process of decision-making about how funds should be spent for research in areas of national concern. I hope that the federal government will consult widely with university researchers and with appropriate people in industry in determining the research priorities of the nation.

I hope, too, that the increased emphasis on scientific research and development will not be at the expense of activities in the fields of the humanities and social sciences. In our technologically oriented age it is increasingly important that these disciplines should be adequately supported.

I would like to report on two other notable developments, one at the federal level, the other at the provincial level.

The first was the decision of the federal government to reorganize the administrative structure for making research grants. The new Natural Sciences and Engineering Research Council, on which UBC vice-president Michael Shaw sits as a member, has taken over the functions formerly held by the National Research Council. I have the honor of being a member of the new Humanities and Social Sciences Research Council, which takes over the granting functions formerly held by the Canada Council, which is now solely responsible for grants in the area of the creative or performing arts. The Medical Research Council will continue to make grants in the field of the health sciences. The ability of these granting agencies to fund research will, of course, continue to depend on the federal government's generosity in appropriating money.



A notable development at the provincial level during the academic year was the creation of a Science Council of B.C., which is chaired by Prof. Erich Vogt, UBC's vice-president for faculty and student affairs and a noted physicist who chairs the board of management of TRIUMF, the nuclear research facility located on the UBC campus.

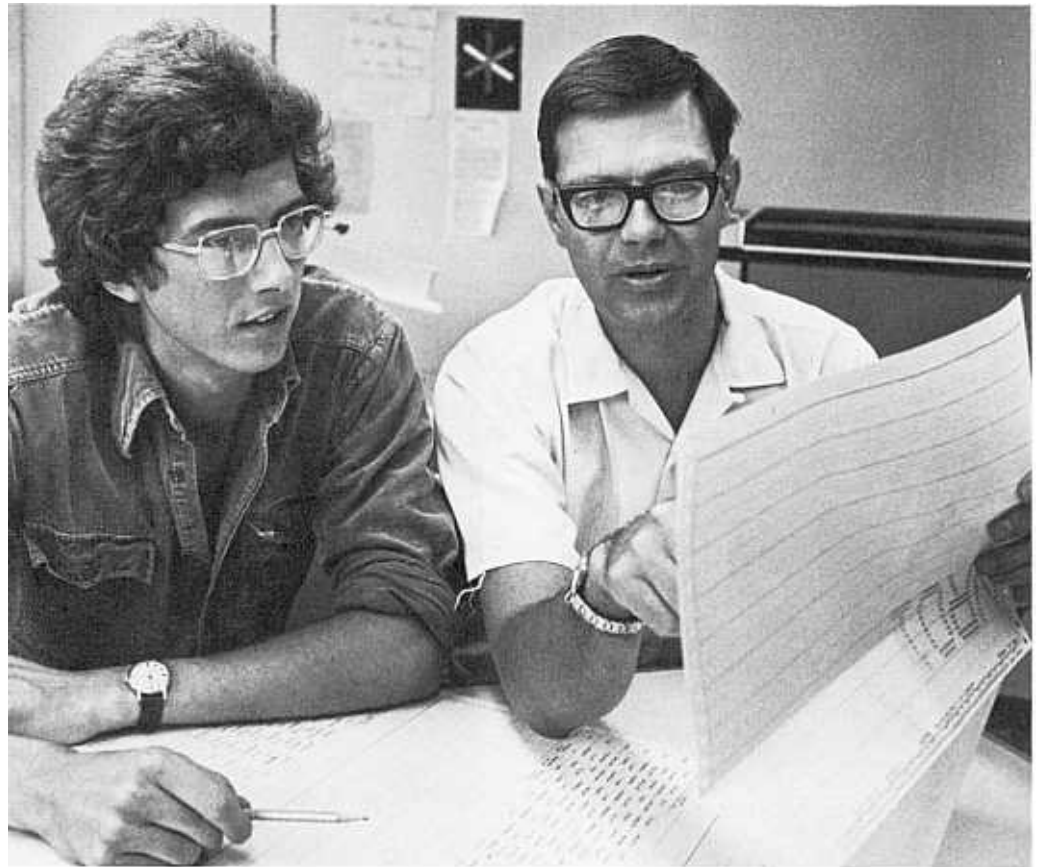
The new body has been asked by the provincial government to provide advice on the rapid development of projects that would be beneficial to the province, including the possibility of a national fusion laboratory funded by both levels of government and a centre to develop products from wood wastes produced by the B.C. forest industry.

Happily, I can report to you that in the 1977-78 fiscal year the University attracted a total of \$21,138,533 for research activities, a significant increase of 24 per cent over the total in the previous fiscal year. Grants from the federal government were up 20 per cent and those from Canadian companies and foundations by 48 per cent. In the face of limited research funding, this achievement is outstanding and indicates that UBC is providing national leadership in terms of the advancement of knowledge and the research needs of the province and the nation.

In a later section of this report, readers will find an extensive list of honors and awards made to UBC faculty members, many of them for research activities. In this section, I list only the winner of UBC's own leading award for research — the Prof. Jacob Biely Faculty Research Prize, which is awarded annually to a

UBC received more than \$21 million for research in the 1977-78 fiscal year, a significant increase of 24 per cent over the amount provided in the previous fiscal year. Above, Dr. Beverley Green, left, and research associate Dr. Edith Camm examine a research project in plant biochemistry in the Department of Botany.

Prof. John Helliwell, right, was the 1978 winner of UBC's top research award, the Prof. Jacob Biely Faculty Research Prize. With research associate Alan Cox, he has recently carried out a study of the economics of utilizing wood wastes as an energy source in B.C.'s pulp and paper industry.



faculty member for work carried out in the previous three years. The prize was established in 1969 by Mr. and Mrs. George Biely in honor of Prof. Biely, a former UBC faculty member. Mr. Biely is president of Biely Construction Co. and the brother of Prof. Biely.

The 1978 and 10th winner of the award, which carries with it a cash prize of \$1,000, was Prof. John Helliwell, a member of the Department of Economics who was UBC's Rhodes Scholar in 1959. He is regarded as one of Canada's most innovative economists and a pioneer in the development of econometric models. He played a key role in the development of RDX2 model of the Canadian economy, described as "perhaps the most sophisticated of the early econometric models of an open economy." He is also a member of a group of natural-resource economists at UBC who are utilizing an \$806,000 Canada Council grant for integrated studies on the management of the world's natural resources.

This year, in requesting material from the deans of UBC's 12 faculties to be used in writing this report, I asked them to provide information on research that directly benefits the people of British Columbia and Canada. The reports have provided an embarrassment of riches.

Because most research is carried on in more than 100 departments throughout the University, it is often difficult to realize how much effort is being made to solve important contemporary problems. In the field of energy research, for instance, I was impressed with the significant number of projects that are going on in almost

every faculty. Prof. Helliwell, mentioned above as the winner of the 1978 Biely award, is using the computer to investigate the economics of utilizing wood wastes as an energy source in B.C.'s pulp and paper industry. In the Department of Civil Engineering, a research team headed by Prof. Philip Hill is concerned with methods for improving the safety of nuclear reactors and a new method for transporting safely the highly radioactive spent fuel produced in reactors. Important work in the field of solar energy is being carried out in the Departments of Geography, Civil Engineering and Electrical Engineering. A team of scientists headed by physics department head Roy Nodwell has developed a new type of high-intensity, energy-efficient lamp that will go into commercial production in the spring of 1979. Geothermal energy is being explored in the Department of Geological Sciences. In the Faculty of Agricultural Sciences researchers are investigating the use of waste materials for the production of methane, an important source of fuel. I emphasize that these examples represent only a sample of dozens of projects underway at the University in this important research area.

What follows are faculty-by-faculty reports on research that is of direct benefit to the people of the province and the nation.

AGRICULTURAL SCIENCES. Faculty research projects include development of an agricultural labor forecasting model; transportation and regional development; production,

harvesting, storage and marketing of forage crops; production on marginal rangelands; early detection of pregnancy in cows to save costly delays in milk production; seaweed production in sewage plant effluent; development of skim milk products; animal waste management; the effect on plants of air pollutants; weed control; and the biodegradation of sewage sludge. It is notable that this relatively small faculty received \$1.6 million for research in the academic year from government, industrial and University sources.

APPLIED SCIENCE. A notable development in this faculty in the academic year was the conclusion of an agreement between UBC and the Pulp and Paper Research Institute of Canada for the establishment of a research arm of the institute within the Department of Chemical Engineering. A PAPRICAN research scientist will join the University in the next academic year to carry out research and direct the work of graduate students who are doing research of interest to the industry. The agreement also provides for PAPRICAN scientists to teach at the graduate level. In the same department important work on the gasification of coal, allied to our plans to develop a coal research centre, is continuing.

In the Department of Civil Engineering seven new research contracts valued at \$110,000 were awarded for work in such fields as environmental, soils, transportation and water resources engineering.

In the Department of Electrical Engineering, a group of biomedical engineers are co-operating with interested members of the Faculty of Medicine and personnel at local hospitals to continue development of diagnostic devices. The engineering physics group is working on the use of microwaves for mechanical pulping and development of a high-energy storage battery.

Research by faculty members in the School of Nursing, which is part of the applied science faculty, is steadily increasing. Nursing and medical circles have expressed interest in a project on parent and child concerns and coping behaviors and attitudes toward a type of diabetes.

ARTS. Research in this faculty covers a wide range of interests from research into company towns in B.C. by Dr. Patricia Marchak, who received a Canada Council grant of \$52,000 for her work, through continuing archeological excavations in Turkey by members of the classics department, to establishment of a network of monitoring stations in the Fraser Valley by Dr. J.E. Hay of the Department of Geography, as part of a continuing program on solar energy.

A new atlas of British Columbia, the work of Prof. A.L. Farley of Geography, will appear in 1979, and Prof. R.C. Harris of the same department is taking an active part in discussions that will lead to a new historical atlas of Canada. Another member of the geography department, Dr. K.G. Denike, has contributed to a federal government study designed to rationalize the location of truck depots in Vancouver.

In the School of Home Economics a wide range of studies related to nutrition is underway, including a study of the social factors in-

volved in the dietary treatment of kidney disease among children and the evaluation of the relationship between diet and agents that cause cancer of the colon, an important problem in the Chinese and some other ethnic communities in Vancouver. Dr. I.D. Desai is in Brazil on sabbatical leave to assist the Brazilian government in studying nutritional problems among migrant agricultural workers, the results of which are of interest in Canada and in other countries.

A great deal of research in our Department of Psychology is directly related to the solution of some individual or social problem. Among these are studies on the training of police officers, attitudes toward the aged, alcoholism, reading difficulty and drug addiction. The prestigious nature of the output of the department is indicated in a 1978 report that showed our psychology department was rated first in Canada in terms of the average number of times that publications of the faculty were cited by other authors in the field, as well as the total number of publications produced.

Dr. Lawrence Shulman of the School of Social Work received grants totalling \$36,000 in the academic year to support his continuing inter-disciplinary project on the nature of the helping process. In the same school, Prof. William Nicholls was awarded a Molson Fellowship that enabled him to visit the Vanier Institute of the Family in Ottawa for a year for field research on the economic and work patterns of Canadian families and communities. Two other members of the school, Dr. Kloth-Ann Amacher and Dr. Henry Maas, developed plans for a major project on "children at risk" in three problem situations — divorce, foster care and mental illness in the family.

A highly respected publication, *Studies in Medieval and Renaissance History*, is now being edited at UBC by Prof. J.A.S. Evans of the classics department. The first volume of the new series is now being printed and should appear before the end of the 1978 calendar year.

Prof. Robert Will, the dean of the Faculty of Arts, has drawn attention to several aspects of research in his faculty that cannot go forward for lack of funds. These include work in anthropology and sociology that is hampered by a lack of qualified technical assistance to maintain, service and instruct in the use of equipment for various departmental laboratories; a long-standing proposal to institute in-depth studies of B.C. communities; and a new proposal to establish a Social Survey Statistical Centre. In the School of Home Economics, a proposal to investigate attitudes of high school students to marriage and family life has been inhibited by the reluctance of school officials to approve the work for fear of public and school board disapproval.

COMMERCE AND BUSINESS ADMINISTRATION. Members of this faculty's management science division have been working with the B.C. Ambulance Service to develop additional models for the allocation of ambulance services across the province. Members of the faculty's marketing division are investigating the costs to Canadian consumers of agricultural marketing boards; improved com-

Prof. A.L. Farley of UBC's geography department has compiled a new atlas of British Columbia which will be published by the University of B.C. Press in 1979.



munication with the public on measures for conserving energy; and shopping problems encountered by Canadian consumers. Other noteworthy studies include risk-taking behavior among U.S and Canadian managers, changes in relative house prices in Vancouver, and the development of energy models.

DENTISTRY. This faculty is making an important contribution to public welfare through a variety of research in the field of preventive dentistry. Dr. Alan Richardson has completed a clinical study of the use of fissure sealants in the prevention of tooth decay in young children. Other faculty members are studying problems related to oral surgery, cosmetic surgical treatments for facial deformities, and facial growth and congenital anomalies associated with cleft palate and harelip. A forthcoming field of research for the faculty is geriatric dentistry, which will be carried on in the dental clinic of the Extended Care Unit of the Health Sciences Centre Hospital.

FORESTRY. Research in the Faculty of Forestry that relates to public interests covers a broad range of forest resource management problems, including wildlife, fisheries and range and watershed management through timber management and wood utilization research. Dean Joseph Gardner says the full potential for research in his faculty is limited by funds available. A survey has indicated that double the presently available funds could be usefully used for work in the faculty.

The faculty is participating in a major, five-year, Canada-U.S. study aimed at finding measures for control of the spruce budworm, which is threatening to destroy large tracts of timber in B.C. and in the Maritime provinces of this country. Dr. John McLean is on the western task force of the study. Two other members of the faculty, Profs. Oscar Sziklai and Harry Smith, have been awarded grants totalling \$45,000 to explore the additional use of wood in reducing Canada's dependence on petroleum as a source of energy and fuel.

In May, 1978, representatives of the University, industry and government attended an event at the University Research Forest near Haney in the Fraser Valley, where a self-propelled planter capable of planting 20,000 tree seedlings a day was demonstrated. The machine, invented by Prof. John Walters, the director of the UBC forest, holds out the prospect of a major advance in reforestation in B.C. and elsewhere. At the same event, a new 400-acre demonstration forest was officially opened. It demonstrates forest management practices and is open to the public.

EDUCATION. Various faculty members conducted basic and applied research, mostly in the areas of teaching and learning. Under grants from the provincial Ministry of Education, seven members of the faculty were responsible for devising and analysing assessments and achievement levels of public school children in physical education, written expression, science learning, mathematics achievement and science programs. Dr. Stanley Blank continued his work on the development of curricular material for gifted students.

Other grants to researchers in education and the School of Physical Education and Recreation support work on the use of computers in education, education of the mentally retarded, physical fitness testing, values education and cancer education.

Dr. John Andrews, the dean of the faculty, has listed some areas of research that are not adequately developed because of a lack of funds. These include studies in educational leadership, the role of the principal and other school officials, criteria for predicting success in teaching, and research related to the teaching of foreign languages.

GRADUATE STUDIES. The faculty fosters a wide range of studies of public interest throughout the University and in the institutes and centres that come directly under its control.

The Westwater Research Centre has undertaken a coastal resource management program that has two major components: estuary

management, with particular reference to determining the importance of wetlands for salmon in the Lower Fraser River; and the development of industries based on selected fisheries resources, such as oysters, clams, sea urchins, abalone and prawns. Both components are designed to suggest policies for economic development and environmental protection.

The Centre for Transportation Studies undertook three significant research studies at the request of the provincial government or associated corporations. For the provincial Department of Transport the centre prepared a report on transport availability and needs in northern coastal communities; for the B.C. Ferry Corporation it carried out the most extensive survey of ferry users in B.C.'s history and prepared a report used to determine the impact of a change in location of a major ferry terminal; and for the British Columbia Railway the centre undertook six major studies related to royal commission hearings on the BCR.

The Institute of International Relations concluded a number of studies associated with its wide-ranging project with the general title "Canada and the International Management of the Oceans." Funding from a variety of sources has enabled 25 faculty members and research associates to contribute to the project since 1954. The UBC Press has already published *Canadian Foreign Policy and the Law of the Sea*, written by eight project participants and edited by Barbara Johnson and Mark Zacher, who heads the institute.

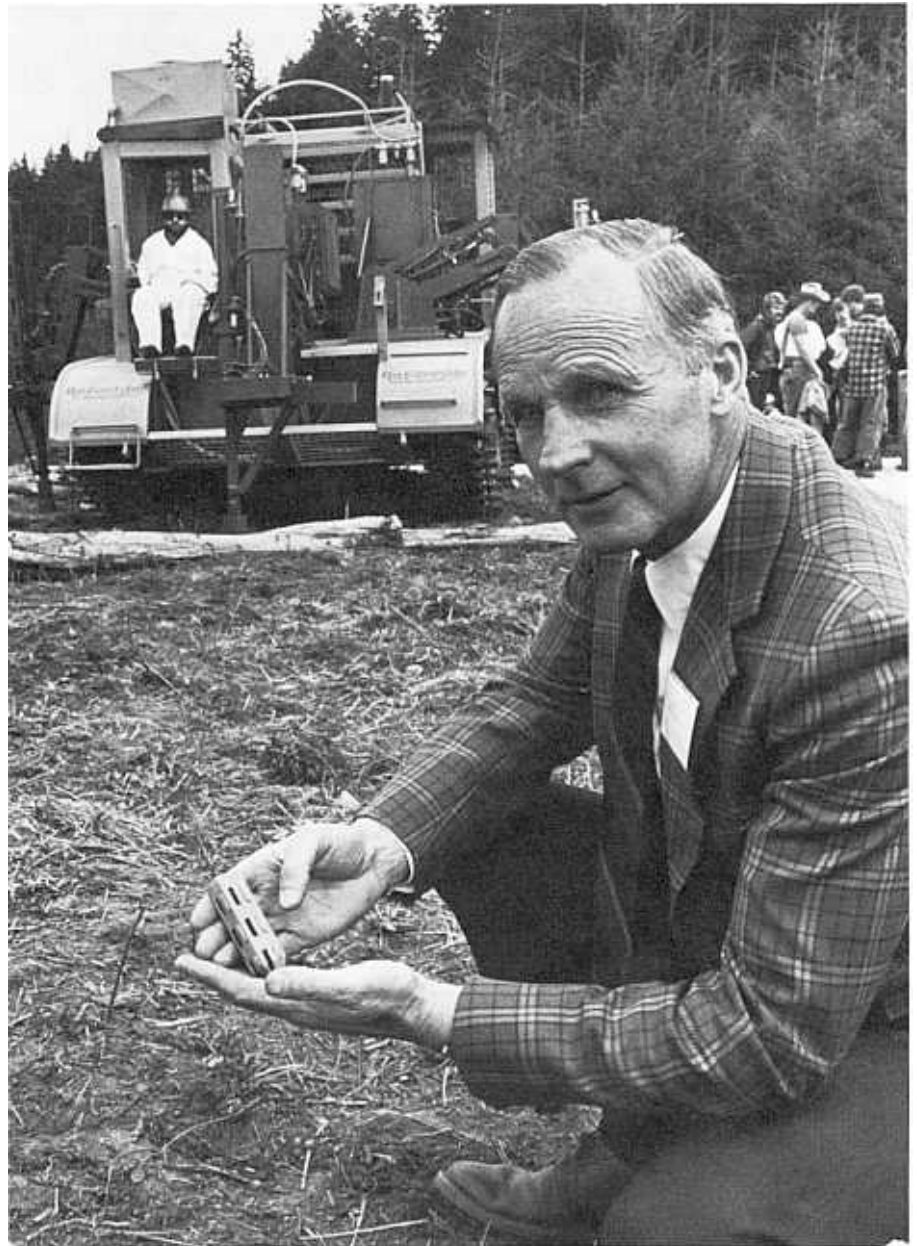
The Institute of Oceanography continues to attract significant grants for a wide variety of studies, including air-sea interaction at high wind speeds; studies in the Gulf of Georgia related to pollution and the development of marine life; and studies of sediment distribution and water circulation in a northern Vancouver Island inlet where mine tailings are being discharged.

The Institute of Asian Research fostered two main projects: the China Resources Centre, which makes teaching materials available to B.C. teachers and which sponsored a trip to China and a conference on teaching about China in 1978; and a rice research project dealing with the history and development of rice research in Sri Lanka and India.

The Institute of Applied Mathematics and Statistics continues to develop and foster a wide range of studies, including fishery management and occupational mobility as well as research in oceanography and medicine.

The Institute of Animal Resource Ecology continues to attract large amounts of money for studies that cover a wide variety of projects in the fields of energy, environmental management, marine food resources, land use and resource planning in the Arctic, and animal research. One member of the institute, Prof. C.S. Holling, received grants totalling more than \$250,000 from Environment Canada to continue his pioneering work in environmental analysis and management.

LAW. Research in the Faculty of Law usually manifests itself in the form of articles published in law journals and in papers delivered at local and national meetings. The faculty's publica-



tions list for 1977-78 includes an impressive amount of material which dealt with matters of widespread public interest.

These included the human rights code in B.C., recent developments in the law of insanity, disclosure of information, confidentiality and administrative proceedings, social impact of northern development, native Indian land claims, reshaping Canadian federalism, children and the law, class and consumer law actions, medical malpractice, and discipline for illegal strikes.

MEDICINE. Research grants in this faculty showed a dramatic increase in 1977-78 to just over \$6 from \$4.2 million the previous year. In percentage terms the increase was 42 per cent. This largely reflects an increase in the number of grants received — 312 in 1977-78 as com-

Prof. John Walters, director of the University's research forest in the Fraser Valley, is the inventor of a reforestation machine that is capable of planting 20,000 tree seedlings a day.

pared to 216 in 1976-77 — from the Medical Research Council, the B.C. Heart Foundation, the National Cancer Institute and the federal Department of National Health and Welfare.

Despite this increase, researchers in medicine feel that progress toward solution of major health problems would be accelerated if adequate funds were available for research. The cutbacks of recent years have meant that many members of the faculty are unable to obtain grants and in other cases the funds provided have been far below the level of adequacy. Yet another problem encountered in medicine, and reflected in reports from other faculties, is the lack of funds for obtaining and replacing major equipment.

Research grants in medicine are expected to increase in the future as the result of the establishment of the B.C. Health Care Research Foundation and the hiring of new faculty members, needed as a result of the expansion of the medical school, who will either bring with them or attract new funds to the University.

Noteworthy research in the faculty includes: studies in chronic pain being carried out in the field of anesthesia; an interdisciplinary research program on cell membranes with the aim of determining the fundamental molecular basis of heart disease and anesthesia; environmental medicine research into the effects of arsenic and fluorides; studies of microbial infections of the alimentary and urinary tracts; a two-year project in obstetrics on the possible effects of therapeutic abortion on subsequent pregnancy outcome; and studies in psychiatry on epilepsy and drug-induced behavior

PHARMACEUTICAL SCIENCES. A research program to develop drug-usage review systems for ambulatory and long-term care patients in B.C. has been undertaken based on a model completed at St. Paul's Hospital by Dr. J.N. Hlynka, of the UBC faculty, with the assistance of hospital staff pharmacists and physicians and pharmacy students and residents. The aim of the study is to develop a system that will identify major trends in drug overuse and misuse among ambulatory and long-term patients so that steps can be taken to identify and correct them. The work will be of value in rationalizing drug therapy.

The division of pharmaceutical chemistry within the faculty is continuing to develop a radioisotope program in association with TRIUMF and the Vancouver General Hospital. Iodine 123 is produced at TRIUMF, purified for human use, and used in human experiments as a tracer in the diagnosis of disease.

SCIENCE. Dean George Volkoff describes the academic year as one of "consolidation rather than expansion" in terms of research. He says the faculty's departments "continued their programs at as high a level as was consistent with the static budgets from the granting agents eroded by inflation." In spite of these difficulties, he adds, the chemistry department produced nearly 200 research papers for publication and Zoology produced 113.

A major addition to the research resources of the University was a new high-resolution spectroscopic system purchased with a \$310,000 Na-

tional Research Council grant to Chemistry. The Department of Computer Science purchased a minicomputer to facilitate co-operative research with the University of Waterloo.

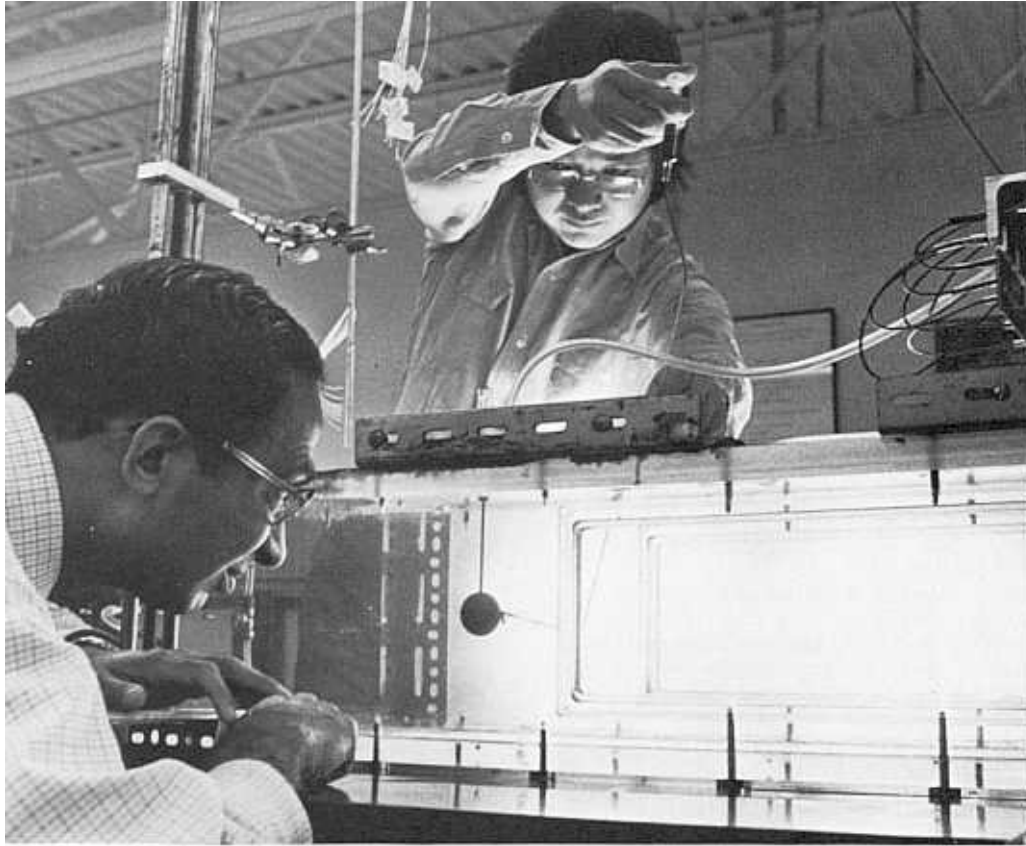
Scientists in the Department of Geophysics and Astronomy continued a program of seismic monitoring for the B.C. Hydro and Power Authority in the Kootenays at McNaughton Lake, where the Mica Reservoir is located. As a result of an expansion of the Mica equipment, the region of the Revelstoke reservoir now under construction is also being monitored for seismicity. The data obtained from the monitoring will provide locations where seismicity may occur during reservoir loading and a data base to determine whether the reservoir modifies seismicity in the region.

In the same department, researchers are developing highly sophisticated techniques for the interpretation of data from electric and electromagnetic geophysical surveys which has application to exploration for minerals, petroleum, natural gas and geothermal energy.

TRIUMF. The nuclear research facility known as TRIUMF located on the campus is a joint project operated by UBC, Simon Fraser University and the Universities of Victoria and Alberta. During 1978, the cyclotron operated at ever-increasing beam-power levels, producing beam for 34 different approved experiments. Extension of facilities made possible by supplementary federal government grants proceeded on schedule.

TRIUMF is more than a tool for basic research. The project took a major new direction with the signing of a contract between the TRIUMF board, UBC and Atomic Energy of Canada which commits TRIUMF to the production of a broad range of radioisotopes, which will be marketed by the commercial products division of AECL for supply to hospitals, industry and universities for a variety of uses, including the diagnosis of disease in humans. To ensure continuity of production, a new, low-energy, high-current cyclotron will be installed at TRIUMF. This machine will also be capable of delivering beams of neutrons which will be used to treat some forms of cancer. Facilities have also been installed that allow assays of the chemical constituents of chemicals and minerals. These new developments have been made possible by loans and grants from the provincial government of about \$4 million.

The extension into applied fields of the operations of TRIUMF, which is attracting scientists from all over the world because of its unique capabilities in the field of meson research, opens new vistas for direct University research involvement in society.



Project that combines research with public service is taking place in the laboratory of Prof. V.J. Modi of the Department of Mechanical Engineering, left. Dr. Modi is being assisted by graduate student Toshi Akutsu in studies which are contributing to the development of an artificial heart valve for persons suffering from heart disease.

Public service

The mission of a modern university may be described as teaching, research and public service. However, the tidy separation of these functions is somewhat artificial and potentially misleading. Each of these functions is inter-related and represents a form of the same activity — learning — which is the prime function of the University.

Moreover, in the largest possible sense, teaching and research are the most important public services that the University renders to the community. Teaching provides students with knowledge and skills to serve the province and the nation in almost every sphere of human activity. Research also prepares students for careers. Scholarly projects involve training in the techniques of problem solving and provide new knowledge about social, economic, scientific and technological concerns.

Two specific examples may be cited to illustrate the artificiality of differentiating public service and teaching and research.

The public programs of our Centre for Continuing Education will serve as the first example. They are an important source of service to the citizens of British Columbia. Yet the very existence of such programs is based on the scholarship and intellectual activity of the regular teaching program.

Our research forest in the Fraser Valley and its many functions may be cited as the second example. With a proud, 30-year history, the

forest has an international reputation for its many research activities. More than 350 research projects have been initiated in the forest and currently there are some 100 projects underway. However, the forest also serves as a teaching facility for UBC forestry students. Almost all of the 1,100 professional foresters in B.C. have received their formal field training at the forest. In addition, the public and other students also visit and make extensive use of the forest as an outdoor classroom. In 1977, for example, more than 15,000 school-student days were recorded, representing an average of 75 students for every day of the school year. A new facility for public education has also been developed — the demonstration forest — the objective of which is to explain various aspects of forest management to the public.

I believe the University is opening its resources to the public. I also firmly believe that appreciation by the public for the worth and value of the University within the community will be facilitated by their use of our resources.

In this section of my report I am using the term "public service" in two contexts: first, in the sense of the service provided by the University directly to the community through such units as the Museum of Anthropology and the Botanical Garden; and second, in the sense of the contribution that our faculty members and students make to the work of governments and other organizations — including the University itself — at the local, provincial and national levels and to the professional organizations within their disciplines.

In other sections of this report I have pointed to the public service the University renders to the community through its library system and by making its athletic facilities available to non-University users. In addition, several hundred non-University users and organizations make use of the UBC Computing Centre for projects that cannot be carried out by local companies that offer computer services. (Worth mentioning here are two other matters that affected the Computing Centre in 1977-78. The University's Data Processing Centre was merged with the Computing Centre to provide a systematic approach to the development of University-wide administrative systems. This amalgamation was undertaken in the interests of efficiency and economy. The other significant change in the centre was the replacement of the IBM 370/168 system by an Amdahl V/6-II central processor in April, 1978. This move assures adequate processor capacity for the next two or three years at very modest costs, since 80 per cent of the cost of the Amdahl unit was covered by the sale of the IBM machine.)

Our University Bookstore also provides service to the public by stocking material that is not available elsewhere. Manager John Hedgecock reports that a large proportion of the Bookstore's profit margin was generated by non-student traffic through sales to conferences held on campus, school boards, libraries and the purchase by local industries of such things as calculators. The result is that prices to students are stabilized by the development of this broader sales base.

Steady growth has also characterized the operations of the University of British Columbia Press, which came into existence seven years ago to publish scholarly books on specialized subjects and to provide a platform for the publication of scholarly research and writing in British Columbia. Of the 67 books published by the press since its establishment in 1971, 15 of which were issued in the 1977-78 academic year, 20 have been about B.C. on subjects ranging from native studies and local architecture to history and economic and government policy. In seven years more than 35,000 copies of these books about B.C. have been sold. A further 20 titles published by the press treat other Canadian subjects and the balance deal with international subjects, mainly concerning Asia and the Pacific and international law. Tony Blicq, the energetic director of the press, reports that in the 1977-78 academic year there was a 25 per cent increase in titles published over the previous year and a 30.5 per cent increase in sales.

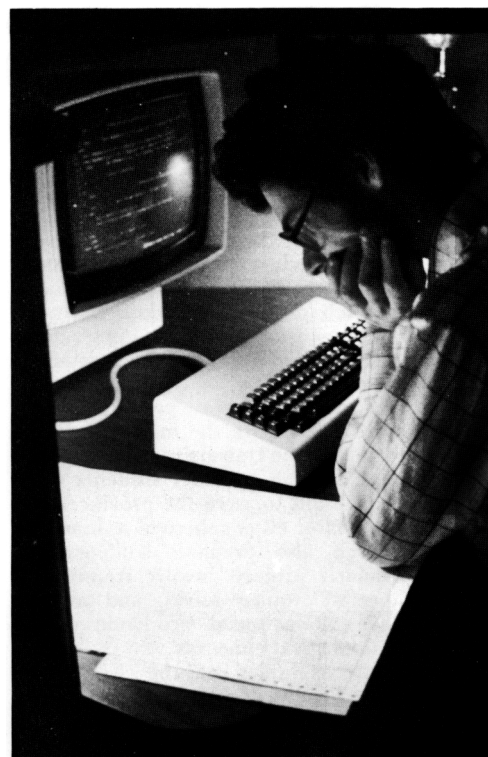
Two books, both on B.C. Indian affairs, won awards during the academic year. *Early Indian Village Churches: Wooden Frontier Architecture in British Columbia*, by John Veillette and Gary White, was one of 31 winning titles chosen from 254 entries in the aesthetic design category of the 1978 American Association of University Press awards. The book is featured in the 1978 AAUP travelling book show that will be on display on university campuses and in libraries throughout North America. The second award-winning book was *Contact and Conflict: Indian-European Relations in British Columbia, 1774-1890*, written by Robin Fisher. The

author received the Sir John A. Macdonald Prize of the Canadian Historical Association for the book, "judged to have made the most significant contribution to an understanding of the Canadian past."

Two other press books were selected for book club distribution: *For Most Conspicuous Bravery: A Biography of Major-General George Pearkes, V.C., through Two World Wars*, by Reginald Roy; and *Canadians of the Nile: The Adventures of the Voyageurs on the Khartoum Relief Expedition and other Exploits, 1882-1898*, by Roy MacLaren, which received the most extensive media coverage of any book published by the press.

The University's new Museum of Anthropology completed its second full year of operation in the academic year under review. I could not help being deeply impressed by the scope of activity that went on in the museum during this period as described in the report of Dr. Michael Ames, the museum's director. In its second year the museum succeeded in laying the foundations for a smoothly working organization, significantly expanded its teaching programs and, says Dr. Ames, "established on an on-going basis the liveliest public program of any university museum in the country."

In addition to a full- and part-time staff of 16



UBC's Computing Centre acquired a new central processing unit during the academic year to ensure adequate processor capacity over the next two or three years.

persons, the museum is aided by 45 volunteer associates who assist museum staff in all areas of activity, especially those related to public programs. A second volunteer force was instituted in 1977 to operate a small anthropology shop, which received a start-up grant of \$12,000 from the Leon and Thea Koerner Foundation. A small group of women with business and managerial experience responded eagerly to an invitation to operate the shop and has recruited and trained some 25 volunteers to assist them. A society of Friends of the Museum of Anthropology was established in December, 1977, to assist with the museum's public programs and fund-raising activities. Mrs. Jean MacMillan Southam is the first president of the Friends and our chancellor, Hon. J.V. Clyne, is its vice-president. I have the honor of sitting as a member at large on the executive.

The museum continues to act as a major attraction for tourists, students and the public in general. In the fiscal year ending March 31, 1978, 111,340 persons visited the buildings as individuals or as members of groups. They were attracted not only by our permanent display of Northwest Coast Indian materials and artifacts from other world cultures, but also by a wide range of special exhibitions, adult education programs offered in association with the Centre for Continuing Education, and participation programs at which artists and members of ethnic communities demonstrated everything from native Indian songs and dances to Scandinavian dancing.

There was a total of 12 special exhibitions in the museum during the fiscal year, including five collected and arranged by anthropology and fine arts students. The titles of some of these exhibitions convey their variety: Chinese Peasant Textile Arts, Haida Argillite Carving in Retrospect, Igbo Masks from Southeast Nigeria, a display of work by Nishga carver Norman Tait, and a special display commemorating the 18th-century voyage of Captain James Cook to B.C.

Adult education programs included courses on the origins of north Europeans, popular culture in contemporary Canada, the anthropology of Vancouver, the crafts and culture of Russia, Poland and the Ukraine, east Asian ceramics, an introduction to Egyptian civilization and an appreciation of Northwest Coast Indian design. Several workshops and art courses for children and adults were held during the year. The Sunday-afternoon participation programs at the museum saw ethnic groups and experts give talks and demonstrations of Chilean music, Korean dances, preservation of Indian baskets, choral concerts, Chinese calligraphy, and the songs, history and traditions of the Kwagiutl Indians of B.C. On Tuesday evenings the new theatre gallery, completed with funds from the Devonian Foundation, was used for musical concerts and film and slide presentations.

The museum also has an important role to play in the academic life of the University. Training in museum studies is centred here and a number of credit courses offered in anthropology and sociology, fine arts and education make extensive use of the museum and its collections. Nine credit courses held classes in the



museum in the last academic year and eight senior and graduate students made use of museum materials for research projects.

From the above, I think you will agree with the claim of Dr. Ames that the museum is the leader at Canadian universities in developing programs that attract the public as well as students and their professors.

I have chosen to review the activities of the University's Botanical Garden in this section of my report on public service because of the opening during the academic year of two important new areas that enhance its reputation as a public attraction and as an important part of the University's academic program. On April 24, 1978, several hundred spectators were on hand for ceremonies that marked the opening of an eight-acre garden devoted to the plants of British Columbia and a nearby two-and-a-half acre alpine garden. Both these new gardens are located on the south campus in a semi-circle surrounding Thunderbird Stadium. They

UBC's Museum of Anthropology attracted more than 110,000 visitors in 1977-78 and staged many special programs, including one for blind children, above, who were introduced to museum artifacts by museum staff members.



Glade in the B.C. Native Garden developed by the UBC Botanical Garden served as the site for official opening ceremonies held in April, 1978. Nearby alpine garden was opened the same day.

represent two of the most important windows that the University has opened to the community. They provide the general public with opportunities to participate in University programs and to have an active interface with the University community.

The B.C. Native Garden, dedicated to the memory of Prof. John Davidson, the first director of the campus botanical garden and a pioneering B.C. botanist, contains more than 1,800 of the seed and flower plants native to B.C., which have been carefully planted and labelled among tall evergreens. The visitor to the garden follows bark-mulch paths through the trees and undergrowth of a typical west coast forest.

The nearby Alpine Garden has been named for E.H. Lohbrunner of Victoria, who until 1972 produced rare and unusual alpine plants at his Vancouver Island nursery. When he retired, UBC purchased his stock for incorpora-

tion into the campus garden, which will be supplemented with materials propagated by members of the Alpine Garden Club of B.C., who have taken an active interest in the development of this new area.

In the same area, known as the Main Garden, the Botanical Garden staff are developing a contemporary display garden, a physic garden for growing medicinal and pharmaceutical plants and an arbor garden for the display of climbers and twiners.

The developments described above are part of a 10-year plan that began in 1971 under the direction of Dr. Roy Taylor, who holds an appointment in the Department of Plant Science as well as serving as the Botanical Garden's director. Quite apart from its value as a public attraction, the Botanical Garden, which encompasses 110 acres of campus land, is used by students, teachers and researchers for educational purposes and for the testing and evaluation of plant materials. Biology, forestry and education students use the Botanical Garden as a learning resource. Special research programs, such as the growth and development of the shitake mushroom, are examples of the ways in which this living University facility can be effectively used by our campus community.

Another major program fostered by the Botanical Garden in 1977-78 was the use of horticulture in therapy for the University's health sciences program and for programs associated with extended care units in Vancouver. More than 40 professionals in the health and social sciences attended a symposium on the subject in March, 1978, and a technical bulletin was published following the event. The Garden Club of Vancouver provided funds for construction of a special octagonal greenhouse on the grounds of the garden's headquarters, which serves as a training and teaching centre for handicapped people, particularly wheelchair patients. During the summer of 1978, 32 patients in the Harry Purdy Extended Care Unit of the UBC Health Sciences Centre Hospital were participants in the program. This type of program serves to exemplify the kind of innovative and creative activities that can be developed through the Botanical Garden.

The Botanical Garden also continued its active role in providing direct public services by participating in the Home and Garden Show held annually at the Pacific National Exhibition, by providing guided tours of the garden with the assistance of the Friends of the Garden, members of the community who assist the garden's staff in many areas of its operation, and by providing a phone-in service for members of the public who want advice on the care of plants. These developments are the direct result of innovation and dedication by Botanical Garden staff. I extend warm thanks to Dr. Taylor and his staff for their professional contribution to University activities and public education. I also wish to extend my deep appreciation to the Friends of the Garden for their help in increasing community awareness of Botanical Garden programs. We all look forward to the successful completion of the entire Botanical Garden plan.

The University also continues to make an important contribution to the cultural life of the

Lower Mainland in terms of art exhibitions in addition to those staged in the Museum of Anthropology and in terms of theatrical productions and musical concerts.

The Department of Fine Arts sponsored a total of 10 exhibitions and other events during the academic year, seven of them in the inadequate Fine Arts Gallery in the north basement of the Main Library. These were supplemented during the year by exhibitions in the art gallery of the Student Union Building, arranged by a student committee.

Four major productions, including an original play, *Deus ex Machina*, by Prof. Donald Soule of the theatre department, made up the Frederic Wood Theatre's 1977-78 season, which was followed by three productions in the summer months by students under the name Stage Campus '78. The Department of Music presented 143 free recitals and concerts during the academic year by a myriad of groups — large and small choral ensembles, a full symphony orchestra, wind and string orchestras, and dozens of small-scale recitals for a full range of instruments and voice, including opera. A highlight of our summer session is the Vancouver Early Music Program, which consists of intensive music and dance programs for advanced students and professionals as well as a series of six public concerts.

And finally, there are the dozens of free lectures and other events that are held throughout the year both on and off the UBC campus designed for students, faculty and the general public as well as professional groups. All these cultural activities attest to the enthusiasm of our students and teaching staff in making the varied cultural life of the University available to our citizens.

An important aspect of the activities of our faculty members centres on their involvement with the dozens of professional organizations to which they belong. I was impressed, in the reports from the deans of faculties, with the number of faculty members who were chairing or serving as presidents or presidents-elect of these organizations. I take this opportunity to list the names of some of those who served in these capacities in 1977-78.

In Agricultural Sciences, Prof. James Mac-Millan was president-elect of the Canadian Agricultural Economics Society, Dr. Bruce Owen was president of the Agricultural Institute of Canada, and Dr. W.G. Wellington served as president of the Entomological Society of Canada.

In the Faculty of Arts, Dr. Douglas Bankson was co-founder and president of the New Play Centre in Vancouver, Prof. Donald Stephens was president of the board of the Vancouver Playhouse, Dr. James Dybikowski was president of the B.C. Civil Liberties Association, Dr. Richard Splane was president of the B.C. Association of Social Workers, Norman Young is chairman of the Vancouver Civic Auditorium Board and grants chairman of the B.C. Arts Board, Dr. Patricia Marchak was president of the Canadian Sociology and Anthropology Association, Prof. A.J. Podlecki served as president of the Classical Association of the Pacific Northwest, Geoffrey B. Hainsworth was elected



president of the Canadian Council for Southeast Asian Studies, Prof. Jan de Bruyn accepted a two-year term as president of the Association of Canadian University Teachers of English, Dr. Stefania Ciccone was elected president of the Canadian Society for Italian Studies for the period 1978-80, Dr. Arsenio Pacheco was elected president of the Canadian Association of Hispanists.

In Dentistry, Joan Voris, who teaches in the dental hygiene program, was elected president of the B.C. Dental Hygienists' Association, and in Education Hannah Polowy is the president of the Canadian Association of Young Children.

In the Faculty of Forestry, Prof. Harry Smith became president-elect of the Canadian Institute of Forestry. In the Institute of Oceanography in Graduate Studies Prof. T.R. Parsons continues as president of the International Association of Biological Oceanography and Prof. R.W. Burling serves as president of the Canadian Meteorological and

Seven major theatrical productions in UBC's Frederic Wood Theatre drew thousands of visitors to the campus.

Summary of Revenue and Expenditure

(Excluding Capital Additions to Endowments, Student Loan and Capital Development Funds)
April 1, 1982 to March 31, 1983

	<u>GENERAL FUNDS</u>		<u>TRUST FUNDS</u>		<u>TOTAL</u>		<u>1981-82</u>	
		Per Cent	For Specific Purposes	Per Cent		Per Cent		Per Cent
REVENUE								
Province of British Columbia								
Grants	\$172,370,508	86.1	\$10,720,405	13.8	\$183,090,913	65.9	\$172,131,645	67.9
Canada — Museum of Anthropology Grant	200,000	0.1	—	—	200,000	0.1	200,000	0.1
Student Fees	22,567,575	11.3	240,660	0.3	22,808,235	8.2	16,523,305	6.5
Investment Income	4,785,606	2.4	7,289,426	9.4	12,075,032	4.4	11,841,022	4.7
Sponsored Research	—	—	48,009,883	61.8	48,009,883	17.3	40,492,543	15.9
Gifts, Grants and Bequests	—	—	11,387,743	14.7	11,387,743	4.1	12,178,996	4.8
Miscellaneous	188,861	0.1	—	—	188,861	—	201,560	0.1
	<u>\$200,112,550</u>	<u>100.0</u>	<u>\$77,648,117</u>	<u>100.0</u>	<u>\$277,760,667</u>	<u>100.0</u>	<u>\$253,569,071</u>	<u>100.0</u>
EXPENDITURE								
Academic	\$146,235,050	71.6	\$19,131,332	26.7	\$165,366,382	60.0	\$145,629,710	60.6
Libraries	15,310,037	7.5	1,918,580	2.7	17,228,617	6.2	15,177,718	6.3
Sponsored Research	—	—	45,964,209	64.2	45,964,209	16.7	41,012,865	17.1
Student Services	3,073,957	1.6	1,252,670	1.8	4,326,627	1.6	3,382,350	1.4
Scholarships & Bursaries	3,661,112	1.8	3,183,160	4.4	6,844,272	2.5	4,741,081	2.0
Administration	9,952,437	4.9	182,775	0.2	10,135,212	3.7	8,927,666	3.7
Plant Maintenance	24,960,918	12.2	—	—	24,960,918	9.0	20,729,438	8.6
General Expenses	739,247	0.3	—	—	739,247	0.2	665,932	0.3
Ancillary Enterprises	221,136	0.1	—	—	221,136	0.1	17,271	—
	<u>\$204,153,894</u>	<u>100.0</u>	<u>\$71,632,726</u>	<u>100.0</u>	<u>\$275,786,620</u>	<u>100.0</u>	<u>\$240,283,968</u>	<u>100.0</u>
EXCESS (DEFICIENCY) OF REVENUE OVER EXPENDITURE								
— General Purposes	\$(4,041,344)		—		\$(4,041,344)		\$6,304,027	
— Specific Purposes	—		\$6,015,391		6,015,391		6,981,076	
	<u>\$200,112,550</u>		<u>\$77,648,117</u>		<u>\$277,760,667</u>		<u>\$253,569,071</u>	

Certain 1981-82 figures have been restated in order to conform with the Financial Statement presentation adopted in 1982-83.

Oceanographic Society. In Law, Prof. Donald MacDougall was president of the United Way of Greater Vancouver.

In Medicine, Prof. Nellie Auersperg became president-elect of the Canadian Society of Cell Biology, Dr. Stephen Drance was elected president of the International Perimetric Society, Susan Fife served as president of the Association of Physiotherapists and Massage Practitioners of B.C. and Dr. Harold Copp became president of one of the sections of the Royal Society of Canada.

In the Faculty of Science, Prof. R.R. Haering served as president of the Canadian Association of Physicists, Prof. Charles McDowell was elected president of the Chemical Institute of Canada and for the second time president of the Council of Canadian Universities Chemistry Chairmen, Prof. J.E. Phillips was president of the Canadian Society of Zoologists, and Prof. Hugh Greenwood completed his term as president of the Geochemical Society.

In the Centre for Continuing Education, associate director Vince Battistelli was elected president of the Pacific Association of Continuing Education.

This partial list serves to indicate how deeply involved our faculty is in the work of professional organizations. The restrictions of space prevent me from listing the names of hundreds of other faculty members who serve on governmental and service organizations as members of the executive or who chair committees of experts assigned to deal with specific problems. The University and the academic community is grateful to them for their continuing efforts.

Let me conclude this section by listing some of the tangible ways in which faculty members and students make their expertise available to the Canadian community.

A broadly based group of UBC scientists, headed by Prof. John B. Evans, head of Mineral Engineering, monitor water quality in Rupert Inlet on northern Vancouver Island, where mine tailings are being dumped into the sea. The team reports to the director of the Pollution Control Branch in Victoria.

The School of Nursing in the Faculty of Applied Science participates in planned parent-hood clinics, provides consultation services to nursing programs in B.C. regional colleges and has implemented a series of workshops for nursing educators and nursing service administrators.

Dr. Michael Kew, of the Department of Anthropology and Sociology, continues to advise Indian groups on land matters, Prof. John Stager of Geography acts as an adviser to northern native peoples and to oil companies on the location of pipelines, Lois Bewly of Librarianship was consultant to the minister in charge of libraries for the province of Saskatchewan on public library legislation, and Prof. Sheila Egoff, also of Librarianship, served as consultant to the Canada Council on children's books.

Prof. Michael Goldberg, Commerce and Business Administration, was appointed a member of the newly formed City of Vancouver Economic Advisory Commission and continues as a member of the U.S.-based Transportation Research Board Committee on Urban Activity Systems.

Prof. Andrew R. Thompson, who became director of UBC's Westwater Research Centre on Sept. 1, 1977, chaired the federal government's West Coast Oil Ports Enquiry, chaired the executive committee of the Canadian Arctic Resources Committee and served as director of the West Coast Environmental Law Association. His predecessor as the director of Westwater, Prof. Irving Fox, who remains at UBC as a member of the School of Community and Regional Planning, was a member of the Alaska Highway Pipeline Panel responsible for making an independent critique of policies and plans for pipeline development in the Yukon.

Dr. Judith Myers, of Agricultural Sciences and the Institute of Animal Resource Ecology, was one of the organizers of a symposium held in Kamloops on knapweed problems. Prof. Thomas Northcote, another institute member, organized a group of senior and graduate students in one of his Department of Zoology classes to prepare and present a brief on Deer Lake to the Citizens' Committee for Disposal of Oakalla lands. The presentation was well received and was taken into account in the committee's decision to recommend deeding 178 acres of the Oakalla lands to the Municipality of Burnaby as part of Deer Lake Park.

The B.C. Drug and Poison Information Centre, sponsored jointly by the UBC Faculty of Pharmaceutical Sciences and the Ministry of Health of B.C., continued to expand. As of October, 1978, the centre will be operational round the clock seven days a week to provide drug and poison information to all B.C. health professionals. Dr. Sydney Katz, a member of the pharmaceutical sciences faculty, has been a key figure in the organization called Canadians for Health Research, which has had a significant and positive effect on government policy with regard to university research funding.

Prof. David Suzuki, of the Department of Zoology, is currently on leave of absence from the University to work with the Canadian Broadcasting Corporation on a series of radio and television programs that deal with science. His activities in this area have made him as widely known as his outstanding work in the field of genetics.

In the Faculty of Agricultural Sciences, Prof. W.D. Powrie was on a provincial advisory committee for the control of milfoil in the Okanagan Lake system, Dr. J.W. Neill was consultant to the Vancouver city engineering department on street tree planting at the new courthouse complex. Some 7,000 children visited the Dairy Cattle Research and Teaching Unit, where they were given tours by students from the Department of Animal Science. A display about the faculty appeared at eight rural fairs throughout B.C. in the summer of 1977.

The University also continues to make experts available for work in foreign countries. Dr. A.R.E. Sinclair, of Zoology and the Institute of Animal Resource Ecology, was asked by the federal government to assist in establishing a multidisciplinary team to study wildlife, agriculture and tourism in Kenya; Dr. Norman Wilimovsky of Zoology helped to organize the fisheries section of a federal-government funded project that is preparing a development plan for

the island of Sulawesi in Indonesia; Dr. Douglas Webster of Community and Regional Planning was on a World Bank mission concerned with regional development in northern Malaysia; and Dr. Setty Pendakur of the same school served for two months with the United Nations on the application of technology to development in Sri Lanka.

And finally, there are the public service contributions of our students. Students in dentistry provide services to hundreds of Lower Mainland school children during the summer months, and many medical students work in communities throughout B.C. in the summer providing services to a wide range of patients under the supervision of practising doctors. Our law students operate free legal advice clinics in centres throughout the Lower Mainland on a year-round basis and take part in the work of the Environmental Law Centre and various sub-sections of the B.C. branch of the Canadian Bar Association.

In the summer of 1978, some 700 students were involved in research and community service projects related to their disciplines under a \$1.5 million Youth Employment Program funded by the provincial government. The projects supported were many and varied — a small business advice program in Commerce and Business Administration, food information and horticulture advice services in Agricultural Sciences, preparation of films, videotapes and printed material for public-education purposes, and the preparation of specimen materials for use in laboratories during the University year. This brief description of student projects scarcely does justice to the effort that is expended on them and the impact they have on the community. Certainly, the response to this program gives the lie to critics who claim that today's students lack initiative and concern for contemporary social problems.



Jindra Kulich, a long-time member of the University's administrative staff, was appointed director of the Centre for Continuing Education in the 1977-78 academic year.

Continuing education

Quite frequently, the continuing education division of a North American university is viewed as the educational warehouse for academic miscellany. Our University has rejected this view. UBC has long had a major commitment to continuing education and firmly believes that programs offered through the Centre for Continuing Education and extension activities operated by various faculties are of great importance to the wider community.

Continuing education serves the general information needs of the province and also provides highly technical curricula for specialists in various professional areas. The units responsible for providing continuing education have over the years developed a province-wide network that enables them to arrange courses, programs

and workshops throughout B.C. There is scarcely a medium-sized centre in the province that does not benefit from UBC extension activities in one way or another.

In short, continuing education is one of the many ways in which the University reaches out to the community, not only in the Vancouver area but throughout the province.

The rapid creation of new knowledge and the consequent obsolescence of the old fosters the golden opportunity for continuing education. "Refresher" education is required by mid-career professionals and is an additional reason for the strong emergence of continuing education. UBC is prepared to meet and to serve these educational needs.

There were two very important developments in continuing education in 1977-78.

Perhaps the most important was the appointment of Mr. Jindra Kulich as the director of the Centre for Continuing Education, which was confirmed by the Board of Governors at its March, 1978, meeting. Mr. Kulich brings to his post an impressive background in continuing education. He has been associated with the centre since 1958 and served as acting director from January, 1976. He was honored last year by the Northwest Adult Education Association for making "an outstanding contribution to the field of adult education." I know that the University and the community-at-large will welcome his appointment and that he will continue to direct the centre's program with energy and creativity.

Secondly, I am pleased to report some of the major initiatives undertaken by the provincial government during the academic year with respect to the provision of educational services outside the metropolitan areas. These decisions may have a profound effect on the structure of higher education, particularly in the Interior of the province.

In April, 1977, the government established the Interior University Programs Board as an adjunct to the Universities Council. The new board was charged with making recommendations regarding the funding and extent of university-level programs to be offered in Interior communities.

In the 1977-78 academic year the Interior board considered proposals from each of the universities and recommended funding for a wide range of activities. UBC was able to expand its continuing education offerings in the Interior, to improve the quality of its independent study program, to expand its offerings of credit and non-credit courses in education for teachers in remote communities and to develop professional programs in commerce and health sciences. Funds were also provided for an important study of professional development needs of foresters living in the Interior.

In February, 1978, the minister of education, Dr. Patrick McGeer, announced that the ministry and Britain's Open University had signed a letter of interest which expressed the hope of implementing a program of inter-institutional co-operation in the development of distance education programs in British Columbia. Later in the year, Dr. McGeer announced the establishment of the Open Learning Institute which was charged with the delivery of

educational services by distance education methods to all areas of the province. At the same time, the Interior University Programs Board was disbanded. The minister expressed the desire that further development of Interior programs in the arts and sciences be undertaken by the Open Learning Institute and that the universities continue to develop Interior programs in professional fields. The institute has been given the power to grant baccalaureate degrees in the arts and sciences.

Prof. John Ellis of Simon Fraser University was appointed principal of the Open Learning Institute. The four Interior citizens who were members of the Interior University Programs Board were appointed to the board of directors of the Open Learning Institute. Among the other members of the board is Mr. Basil Stuart-Stubbs, University Librarian at UBC.

The abolition of the Interior Board, a very successful and energetic institution, and the establishment of the Open Learning Institute has created considerable uncertainty about the future of higher education in the Interior of the province and the role of this University in providing programs in the Interior. It would be premature for me to comment on the future of the Open Learning Institute or the inter-relationships which may develop between UBC and the institute. I must emphasize, however, that the University remains committed to the principle of providing higher education to all those who can profit by it and who can meet the University's high academic standards. We are prepared to co-operate in any programs which will benefit the people of this province educationally.

Inevitably, our thinking about higher education in British Columbia has to undergo some fundamental change. Fortunately, the University is in the forefront of this change.

The complex and dynamic image of our continuing education activities is not adequately described by a mere recitation of each of our offerings. Hopefully, the following snapshots catch part of that image.

Every UBC unit offering continuing education services and programs to the general public and professional groups experienced an enrolment increase in the 1977-78 academic year. Four major units — the Centre for Continuing Education, Continuing Education in the Health Sciences, the Faculty of Commerce and Business Administration and the School of Social Work — recorded nearly 60,000 registrations in 1977-78, an increase of more than 10 per cent over registrations in the previous academic year. In addition, the Faculty of Education continues to provide continuing education services for teachers throughout the province, through credit courses administered by Extra-Sessional Studies, seminars, conferences and workshops that are held on and off the campus.

Our Centre for Continuing Education annually provides one of the most varied and extensive programs in all of North America. It increased its registrations by more than six per cent in 1977-78 to 35,436 persons from 33,377 in the previous year.

A number of existing centre programs expanded considerably in 1977-78. Enrolment in the diploma program for vocational teachers in

colleges doubled, as did the number of women who made use of the Women's Resources Centre in downtown Vancouver, which developed a new service — a vocational planning centre and job-hunting manual. Increased enrolments were experienced in the continuing education program for librarians, offered in co-operation with the School of Librarianship; and the Language Institute, which offers beginners and advanced courses in a wide range of modern languages and a variety of English programs for non-English-speaking Canadians, immigrants and participants from abroad. Among the new programs offered by the centre in the academic year were a course for legal assistants, a spring school for professional planners, a fish-farming forum, a dairy goat production course, a project to assist professionals and others working with immigrant families and their elders, and a new overseas program in co-operation with universities in the United Kingdom.

One of the most exciting developments in university education has been the expansion of activities in the Interior of the province. The centre has participated vigorously in this activity, taking both general education and professional continuing education programs to Interior communities. Citizens advisory committees were established in several centres in the Thompson-Okanagan region to assist in exploring local needs and in the arrangement of programs. The centre worked closely with Interior community colleges in offering its non-credit programs.

Registrations for programs sponsored by our Division of Continuing Education in the Health Sciences increased by nearly 3,000 persons to 11,246 in 1977-78. It is worth noting that of the total number of courses arranged by this division — 238 — almost half of them, 109, were put on in off-campus centres as far-flung as Victoria, Penticton, Prince George, Terrace and Fort St. John.

The division placed increased emphasis on stimulating inter-professional learning among two or more health professions and undertook a number of projects to encourage health professionals to initiate their own continuing education with the division providing faculty support when requested. A network of eight regional co-ordinators for the continuing dental education program was established at a workshop held in June, 1978. The co-ordinators were provided with skills to identify and meet the particular continuing education needs of dentists in their communities. Another intensive workshop trained 32 new co-ordinators for the continuing pharmacy program. The division has also reprinted a handbook entitled "Program Planning Guide for Health Professionals," which provides a step-by-step explanation of how continuing education programs should be planned.

Professional programs in the Faculty of Commerce and Business Administration are divided into three divisions: Executive Programs, which offers short-term management seminars; the Diploma Division, which is concerned with long-term professional career training; and the Real Estate Division, which is responsible for licensing and continuing education in the real estate industry.

In 1977-78, executive programs offered more

than 70 management seminars to more than 2,000 businessmen and women throughout the province on such diverse topics as organizational management, finance, marketing, accounting and management information systems, industrial relations and urban land economics. Off-campus locations for some of these seminars included Kamloops, Kelowna, Castlegar, Cranbrook, Prince George, Edmonton, Calgary and Toronto.

Some 4,500 students were registered for five professional development programs offered by the diploma division. Approximately 2,500 students are enrolled for the five-year Certified General Accountants' course, while the balance of the division's enrolment was in the five-year Society of Management Accountants' course, the Junior Chamber of Commerce business management program, the three-year Marketing and Sales Management diploma program and a three-year course that leads to fellowship in the Institute of Canadian Bankers.

The continuing education program offered by our School of Social Work is designed to enhance the knowledge and skills of social workers who hold a university degree and to provide educational opportunities for people employed in social services but who lack professional education. Some 2,000 people in these categories were involved in continuing education programs sponsored by the school in 1977-78, including an annual conference on family practice sponsored by the five western Canadian social work schools.

Throughout the year, at all three of our academic sessions, the Faculty of Education provides continuing education opportunities for the teachers of B.C. In 1977-78, 129 on-campus credit courses were provided in the late afternoon and evening, 88 credit courses were held off campus, and 95 major non-credit courses and workshops were provided in various centres. During the spring and summer sessions, 166 undergraduate and 59 graduate education and physical education courses were available for both teachers and non-teachers.

The education faculty and the Centre for Continuing Education co-operated in presenting several conferences, non-credit courses and credit and non-credit travel courses. In July, 1978, the education faculty's Business Education Department sponsored a Business Educators' Work Experience Refresher Program in association with a federal government department. Dean John Andrews estimates that members of his faculty devoted 8,000 hours during the academic year to public lectures, seminars and conferences sponsored by UBC or by participating in workshops at the request of teachers' groups and school districts.

Grants from the Devonian Foundation in Calgary enabled the University to move the buildings and totem poles in Totem Pole Park to a new site adjacent to the Museum of Anthropology.



Capital financing and new buildings

For more than two years the University has had before the Universities Council a five-year building program totalling approximately \$145 million. It was my hope that the provincial government's new B.C. Educational Institutions Financing Authority Act, passed in the spring of 1976, would enable us to break the log jam of the last five years and begin to make substantial progress toward our goal of providing improved academic and research space for a substantial number of overcrowded faculties and departments.

Authorization was given to the University in 1977-78 to begin planning some new facilities, but the fate of most of our proposals to the Universities Council is still unknown. As I have said in previous reports, our backlog of unmet building needs is having a serious effect on the improvement and development of the academic program, which cannot flourish and grow in sub-standard quarters, which include about 100 old army huts that were brought to the campus at the end of World War II to provide temporary accommodation when our enrolment escalated almost overnight as the result of the University's decision to provide higher education to returning war veterans.

I do not regard our requests for capital funds and new buildings as extravagant. They were carefully chosen from a list developed as a result of an investigation by the Senate Committee on

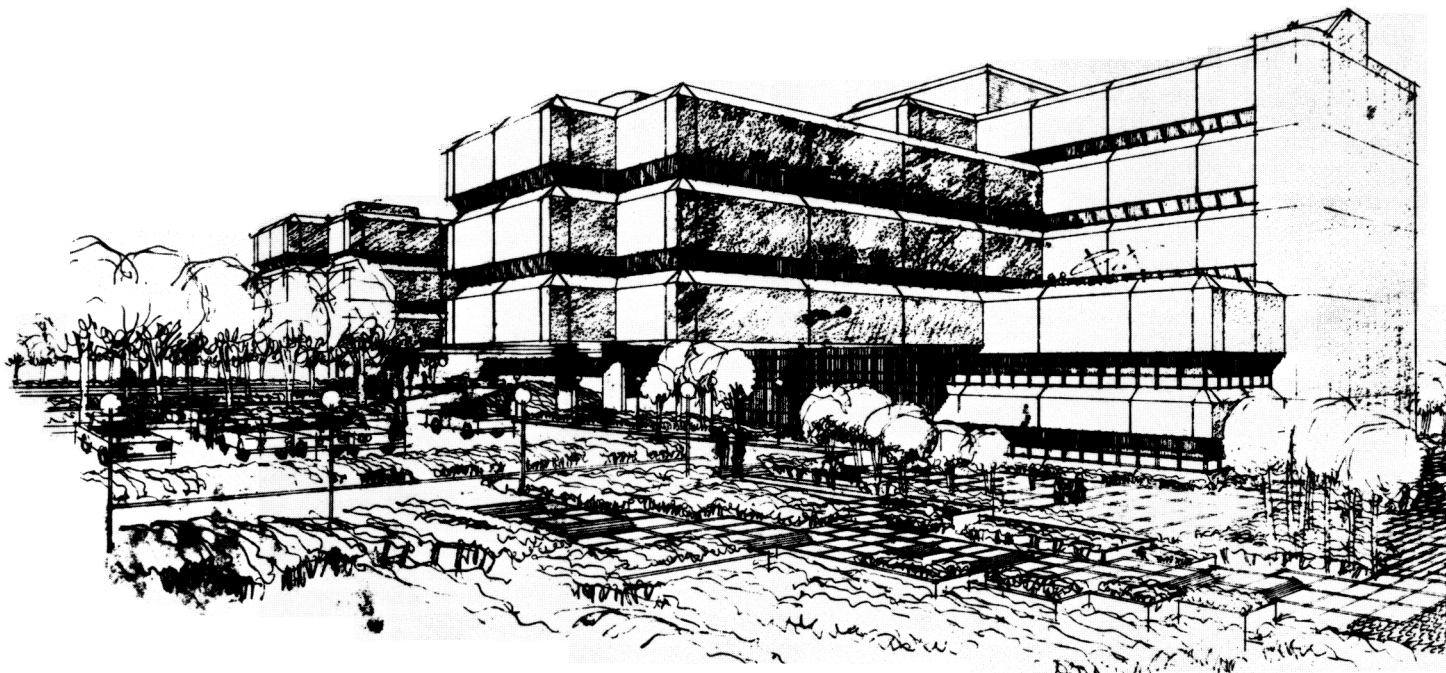
Academic Building Needs. The requests were also scrutinized by the Board of Governors and have been the subject of discussions and meetings with a sub-committee of the Council charged with making recommendations on construction. I can only add that we are continuing to press with the Council our need for capital funds.

Two projects were accepted as being substantially complete by the Board during the 1977-78 academic year: Stage II of the new Aquatic Centre, which is being built with funds contributed by UBC students, faculty and employed staff, the Board of Governors, the federal and provincial governments and the community-at-large; and Phase II of a new building adjacent to the Museum of Anthropology to house the Department of Anthropology and Sociology. The former building will provide unrivalled recreational and academic facilities for UBC and the community when it opens in the 1978-79 academic year; the latter building provides teaching and office facilities for a department that has long endured in old army huts and its proximity to the new museum provides easy access to an outstanding collection of anthropological materials which will enhance teaching and research.

The Devonian Foundation of Calgary generously provided funds for two projects associated with the new Museum of Anthropology. The gift enabled the University to move the buildings and totem poles in Totem Pole Park to a new site adjacent to the museum, and to complete the theatre gallery inside the museum. The latter facility, which will be used for lectures and the showing of films and slides, is equipped with a sophisticated audio-visual system. These performance facilities significantly increase the University's capacity to communicate with the public on a variety of cultural topics, including our native Indian heritage, and provide modern facilities for student experimentation and education. We are grateful to the Devonian Foundation for its assistance.

At its final meeting in the academic year on July 4, 1978, the Board approved the award of a \$3,230,000 contract for construction of additions to the Basic Medical Sciences Buildings for the Departments of Anatomy, Biochemistry and Physiology. These additions are another step in the expansion of our medical school, which involves the expenditure of more than \$50 million to expand facilities on the campus and at teaching hospitals in Vancouver where our senior medical students receive clinical training. The University has also undertaken to double the size of its entering medical class from 80 to 160 students. As a first step in this expansion, the size of the class was increased by eight students in 1977-78. A continuing project which is part of the physical expansion of our campus Health Sciences Centre is construction of a 240-bed Acute Care Unit costing more than \$32.5 million.

At its meeting on April 4, 1978, the Board approved sites for construction of new buildings to house the School of Home Economics and the Department of Psychology and approved a recommendation to locate the Schools of Nursing and Rehabilitation Medicine on the third



floor of the Acute Care Unit now under construction.

The home economics building will be built 100 yards or so south of the school's present location on the East Mall, directly across from the new Library Processing Centre, which is rapidly nearing completion. The psychology building will be constructed on the West Mall, due west of the Neville V. Scarfe Building which houses the Faculty of Education. Detailed planning preceding a call for tenders for construction of these new units is now underway.

At its May meeting, the Board was informed that the provincial government had authorized the University to borrow \$3.5 million to build an addition to the TRIUMF accelerator which will house a small cyclotron that will produce radioactive isotopes that are widely used in the diagnosis of disease in humans and for research. The radioisotopes produced at TRIUMF will be marketed by the commercial products division of Atomic Energy of Canada Ltd. under an agreement between UBC and that federal agency.

In June, the University received authorization to borrow \$5.1 million for a variety of labor-intensive capital projects, including general landscaping improvements, upgrading of playing fields and roads and installation of new underground services such as sewers and water mains. One of the major projects being undertaken with this grant is the improvement of the south-campus road system to provide improved access to parking lots adjacent to the expanding Health Sciences Centre.

At its June meeting, the Board approved a change of name for the Physical Education Centre adjacent to the Thunderbird Winter Sports Centre on Thunderbird Boulevard. This complex will be known in future as the Robert F. Osborne Centre for Prof. Osborne, who retired on June 30, 1978, after faithfully serving the

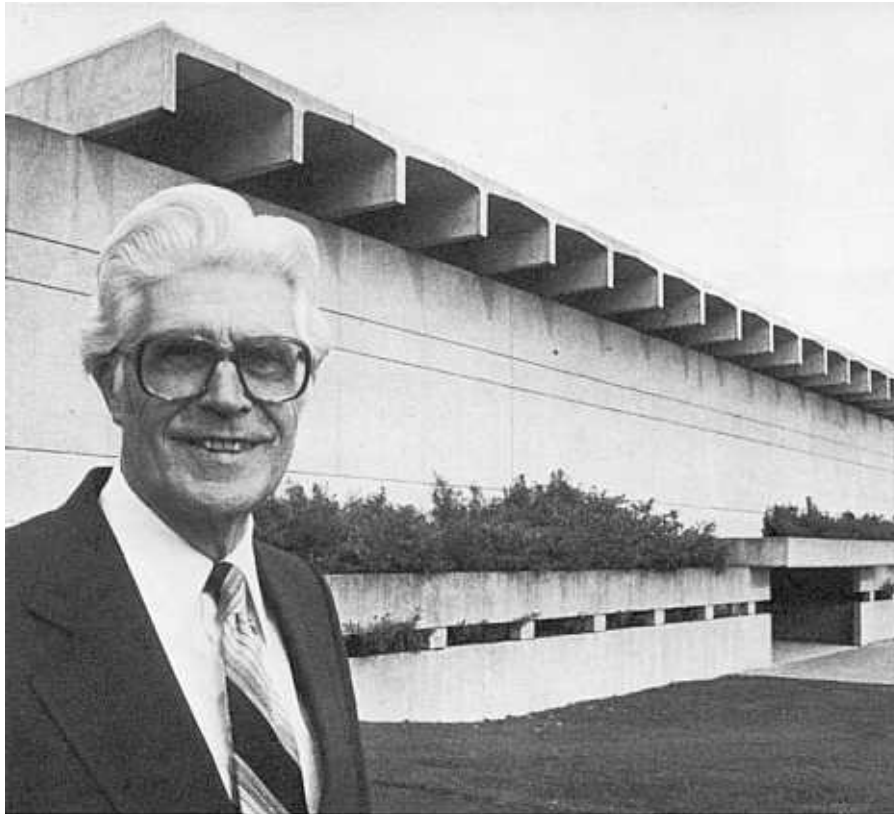
University for 33 years as director of the School of Physical Education and Recreation.

For the first time in many years, the University lost a teaching and research facility to fire, which broke out in the swine research unit operated by the Department of Animal Science early on Sept. 24, 1977. About 190 animals died in the blaze, which wiped out the breeding and feed-trial program operated by the department. The unit was insured and steps have been taken to rebuild it.

In my last report I outlined the position the University had taken on the future of the University Endowment Lands, which were the subject of a study by a task force established by the provincial government. One of the main recommendations in the report of the task force, made public in September, 1977, was that just under 2,000 acres of the lands "be designated as a natural park supporting integrated uses for recreation, education, and forest ecology research." The area to be so designated includes the undeveloped part of the UEL, the existing University golf course, and Foreshore Park, the strip of land now under the control of the Vancouver Park Board, which runs around the perimeter of the Point Grey peninsula on the seaward side of Marine Drive from the Musqueam Indian Reserve to Spanish Banks.

Other recommendations of the task force would give the University a major role to play in the future management of the lands. UBC would be a member of a representative body to advise the provincial government on park-operation policy and would have authority to issue park-use permits. The task force also recognizes that the lands are extensively used by many UBC faculties and departments for teaching and research purposes. The location of the lands adjacent to the campus, the report says, "offers unique educational potential with

Construction continued during the academic year on the new acute care unit of the campus Health Sciences Centre Hospital.



Physical education gymnasium complex on the south campus was renamed the Robert F. Osborne Centre for Prof. Osborne, who retired in 1978 after serving for 33 years as director of the School of Physical Education and Recreation.

maximum efficiencies in travel time and constant access."

The University's suggestion, in its submission to the task force, that portions of the UEL be reserved for agricultural, forestry and ecological demonstration areas was viewed with approval by the task force, which said this proposal was "compatible with all criteria, including those of Vancouver and the Greater Vancouver Regional District, and has received widespread institutional and public support."

No announcement had been made by the provincial government concerning the recommendations in the task force report when the academic year ended on August 31, 1978.

The student body

Enrolment at the University during the 1977-78 academic year — the 12-month period from September 1, 1977, to August 31, 1978 — was at an all-time high of 32,015 students. This total was made up of 23,208 students registered for the regular daytime winter session; 1,050 in nighttime, extra-session courses held during the winter session; 2,565 registered for the spring session which runs from May through July; 3,975 registered in the summer session; and 1,217 who were registered for correspondence courses administered by the Centre for Continuing Education.

For the purpose of reporting to the Universities Council, our enrolment figures are based on the University's 1977-78 fiscal year, which runs from April 1 to the following March 31. During this period, UBC's total enrolment was 31,572 students, made up of 23,208 daytime winter session students; 1,050 nighttime, extra-session students; 2,110 spring session students; 3,987 registered for the 1977 summer session; and 1,217 who took correspondence programs. This total represents an increase of .04 per cent in student registration over the 1976-77 fiscal year.

Two interesting aspects of our daytime winter session enrolment are the growing number of students who are classified as part-time students taking fewer than 12 units of academic work, and the percentage of women in the student body.

In the five-year period from 1973 to 1978, the percentage of part-time students in the daytime winter session enrolment has risen from 16.8 to 21.07. Many of these students, it appears, are simply extending their school year by taking a reduced number of courses during the winter session. Some students continue their studies by enrolling in the spring session which begins in May.

I am pleased that the University has recognized and accepted the responsibility for educating students of all ages who cannot come to the campus for full-time study. I am convinced that the trend toward part-time study will accelerate in the years to come, providing students with the opportunity to combine work experience with formal education. Moreover, access to higher education should not be manipulated in such a way that individuals who cannot attend full-time are disqualified.

The traditional model of universities assumed that an "educated man or woman" could only be produced by having students "stay put" for four consecutive years. Quality education is not necessarily guaranteed by forcing all students into this framework. And I cannot accept the argument that part-time study is a threat to the quality of education. We surely should welcome this trend toward alternative ways to obtaining a degree.

For the second winter session in a row, women outnumbered men 51.6 per cent to 48.4 in a total first-year class of 3,318 students enrolled in the Faculties of Agricultural Sciences, Arts,

Education, Science and the nursing program in the Faculty of Applied Science. Men are still in the majority in terms of our overall daytime winter enrolment, 55.6 per cent to 44.4 per cent. Women continue to make up an increasing proportion of our undergraduate and graduate enrolment. The undergraduate ranks were 46.1 per cent women and our graduate enrolment was 35.1 per cent women in the 1977-78 winter session.

It is interesting to compare these proportions to the general Canadian picture for post-secondary gross enrolment rate, or the total full-time enrolment related to the 18-24 age group, which makes up about 80 per cent of all students. For Canada as a whole, the mix of post-secondary students changed from 30 per cent female in 1962 to 40 per cent in 1971 and 45 per cent in 1976.

Women are also increasingly evident in UBC's professional schools. They make up 20.6 per cent of the enrolment in Commerce and Business Administration; 28.3 per cent in Law; 13.6 per cent in Forestry; and 28.6 per cent in Science. In the Faculty of Arts, women now make up 59 per cent of the total enrolment.

Our undergraduate enrolment was up very slightly in 1977-78 to 19,953 students compared to 19,879 the previous year. Our graduate enrolment in 1977-78 increased to 2,972 from 2,918 in 1976-77.

In recent years, there have been suggestions that Canadian universities should drastically restrict enrolments in graduate education because of a belief that there is a serious unemployment problem for new Ph.D.'s. This bleak conclusion raises some serious questions.

I want to emphasize that if those who set policy at the provincial and national levels do not recognize the vital role that graduate education plays in our society the future of Canada may not be what we would wish. In general, I do not believe that past history or the employment picture justifies the conclusion that graduate enrolment should be diminished, especially if Canadian universities are to meet the needs of the work force and society. Canada's top graduate schools must continue to educate doctoral students if this country is to have adequate human resources in the 1990s to staff our universities and meet the needs of business and industry. Lack of foresight will have a disastrous effect on the overall future needs of the nation.

Past experience should enable us to avoid the mistakes of the past. Briefly, let me describe the development of graduate education in Canada and the consequences of the policies pursued in the past.

Just over 30 years ago, in 1944-45, there were only five Canadian universities that offered doctorates, and then only in a few areas of specialization. As a result, with a few exceptions, scholars of my generation were educated outside Canada. By 1958-59, 16 Canadian universities offered work at the doctoral level. During the late 1960s and early 1970s, there was a general maturation in quality and number of doctoral programs in Canada.

The upshot of the late development of graduate studies in Canada has been that the number of doctorates granted has never been

commensurate with our maturity as a developed country. In 1960-61, for example, all Canadian universities produced 305 doctorates, about equal to the number granted by Harvard University, a university significantly smaller than UBC in size. Today, the number of earned doctorates awarded in Canada is estimated at only 2,000 each year. This figure must be balanced against the large number of Canadian students studying abroad. As late as 1976-77, there were 603 Canadian graduate students in British universities and at least 3,000 in U.S. universities. Not surprisingly, it is estimated that 60 per cent of all Ph.D.'s in Canada were awarded by foreign universities.

Data such as these serve to indicate that it is vital that there should be no weakening of the network of graduate schools in Canada. Otherwise, the country will, in the late 1980s and early 1990s, be once again forced to recruit non-Canadians to meet its work force needs. It would indeed be ironic and sad if Canadian universities and industry were faulted for recruiting non-Canadians because public policy forced universities to contract enrolment in graduate schools.

The University made two major decisions in the 1977-78 academic year that will affect future and present students.

At its first meeting of the academic year in September, 1977, the University Senate approved higher admission requirements for students entering the University for the first time. Effective in September, 1981, students entering UBC from B.C. secondary schools will be required to have a general C+ average, and they will have to have taken English 11 and 12, Social Studies 11, Mathematics 11, a science 11, plus French 11 or a foreign language. At present the only mandatory subjects are the two English courses and Social Studies 11.

It had been hoped that the University policy of not requiring specific courses would permit secondary schools to tailor academic programs to the individual needs of the student. This hope has not been realized. School principals report that they have been frustrated in their attempts to provide the best possible program in the face of a desire by secondary-school students to take an easy one. In short, our policy was not providing adequate guidance to secondary-school students in selecting the broad academic background for University study that the Senate admissions committee felt was appropriate.

Senate also approved a timetable for the implementation of the new entrance regulations. A suitable period of time had to be allowed for in scheduling the new requirements so that students just entering secondary schools would be able to tailor their programs to fit the new policy.

As the result of a request made by the Board of Governors at its November meeting, a President's Advisory Committee to Review Student Services was established. I welcomed the motion from the Board's staff committee because, so far as I am aware, there had never been a University-wide review of services provided to students. The object of the study was to devise more effective ways of delivering existing services and to receive suggestions for new services that might be provided for students.

Dr. Margaret Fulton, who resigned as dean of women during the academic year to become president of Mount St. Vincent University, fostered programs that raised the level of consciousness concerning women's issues within the University.



The request for the review coincided with the announcement that Dr. Margaret Fulton, UBC's dean of women and an esteemed member of the Faculty of Education, had accepted an invitation to become the president of Mount St. Vincent University in Halifax, Nova Scotia. Until the review was completed it was decided to hold in abeyance the appointment of a committee to seek a successor to Dean Fulton.

The eight-member committee, including two students, that carried out the review was chaired by Dr. Ruth L. White of the Department of French. The committee's report, submitted in May, 1978, called for a radical reorganization of services provided to students.

The report recommended, among other things, the appointment of a senior person with appropriate administrative and academic background who would provide "creative and vigorous leadership" to student service agencies at UBC, and who would chair a standing advisory committee to co-ordinate the work of the directors of each major area of student services.

The report also recommended establishment of a counselling centre that would provide general counselling as well as special facilities for counselling foreign students and accommodation for chaplains, community referral services, day care and residence co-ordinators. The committee also recommended that the centre include an office for women students to replace the Office of the Dean of Women and, in close association with the centre, a Career Education and Placement Centre, which would be staffed by career-education specialists who would work closely with the new Canada Employment Office on the campus.

The Board of Governors approved recommendations that affected the Office of the Dean

of Women at its meeting in June, 1978. The unit was renamed the Women Students' Office and it was agreed that it should be headed by a director and that an immediate search should be launched for an appropriate person to fill the position.

Dr. Lorette Woolsey, a sessional lecturer in counselling psychology, was named acting director of the Women Students' Office while the search is being conducted.

The recommendations that affected the Office of the Dean of Women were the subject of a minority report by Dr. Myrne Nevison, of the Faculty of Education, who was a member of the advisory committee on student services. The committee was divided on some of the questions affecting the future of the office. Dr. Nevison took issue with the suggestion that the women's office should be part of an overall counselling service with the director reporting to the head of the proposed counselling centre. She felt that restricting access by the women's office director to the counselling centre head would prevent women's issues being heard in the higher administrative echelons of the University. She said the University "would be wise...to preserve the function of the Office of the Dean of Women at a level where the head of it reports directly to the vice-president (of faculty and student affairs)...."

It was decided to accept the views expressed by Dr. Nevison. The new director of the Women Students' Office, when appointed, will report directly to Prof. Erich Vogt, the vice-president for faculty and student affairs, rather than through the new position of assistant to the vice-president for faculty and student affairs. Prof. Vogt plans to move quickly in the 1978-79 academic year to establish a senior administrative position for an individual who will co-ordinate the work of various campus counselling services and to establish the standing advisory committee on student services recommended in the report. The committee will be asked to consider the recommendations made in the student services report that have not already been acted on.

The decision of Dr. Margaret Fulton to accept a new challenge as president of Mount St. Vincent University means that her talents and insights as an academic and administrator will be visible on a larger stage. Her vigorous leadership as Dean of Women at UBC has made the University community more aware of the issues that affect women as students and members of society in general. She was the driving force behind the introduction of a number of new programs that raised the level of consciousness concerning women's issues within the University. Dean Fulton and her able staff initiated a career orientation program for women that included counselling workshops and panel discussions and new internship and co-operative education programs provided opportunities to participate in course-related and supervised work experiences in forestry and engineering, two fields traditionally dominated by men. Dean Fulton also fostered the initiation of University-wide cultural programs, expanded student counselling and referral services and improved liaison with a wide range of committees and organizations both on and off the cam-

pus. I know that her many friends at UBC and in the community will join me in wishing her comparable success in her new post.

Toward the end of the academic year it became necessary for the University to take action to solve a number of serious administrative problems that had arisen at International House. These centred on the relationship between some students and some members of the board of directors of the house and its executive director, Dr. Colin Smith. At its meeting on May 2, 1978, the Board of Governors approved a recommendation from Vice-President Erich Vogt that the constitution of International House be suspended. The Board placed the administration and day-to-day operation of International House in the hands of Prof. Vogt and requested him to consult with appropriate community and University groups with a view to revising the constitution of International House and to investigate charges concerning the administration and management of the house and its role on campus.

Regrettably, the Board had to take further action concerned with this problem by terminating the appointment of the executive director, Dr. Smith, at its meeting on June 6.

International House has been a part of campus life at UBC since the end of World War II, when its organization was fostered by UBC's then president Dr. Norman MacKenzie. It has played a valuable role over the years in providing a social and activity centre where Canadian and foreign students have been able to meet one another and engage in a wide range of useful activities. I am confident that the consultations now taking place at the University and in the community will lead to a resolution of the problems that have beset International House and that it will once again become a focal point for international student activities on the campus.

Athletic programs in some North American universities have frequently been the target of harsh criticism. In general, Canadian universities have escaped the charges levelled at some institutions of engaging in a mad scramble to recruit star athletes and name coaches who, in the case of the former, do little studying and fail to graduate and, in the case of the latter, make no contribution to the academic life of the university through teaching and research.

Canadian universities in general have achieved a consensus view on the role of athletics within a university, a view that excludes the awarding of athletic scholarships to create winning teams. UBC students take a keen interest in the campus athletic program, both as participants and spectators. It is a source of pride to me that most student athletes complete their academic work and obtain their degrees. The coaches of our teams, most of whom are members of the School of Physical Education and Recreation, should also be congratulated for their dedicated efforts over the years in building an exciting program, often in the face of considerable financial and other obstacles.

UBC has one of the most extensive athletic programs and some of the finest facilities in Canada for physical activity. Our students,



faculty and staff, and members of the community take full advantage of these facilities on a year-round basis.

During the University's winter session these facilities are in almost constant use for extra- and intra-mural sports programs and by students and faculty members who enrol in Recreation UBC, which provides supervised recreation services in a wide variety of sports. The demand for the use of facilities far exceeds their availability. Ice surfaces in the Winter Sports Centre, for instance, are in use until three and sometimes four o'clock in the morning most nights of the week to accommodate all those who want to play hockey and engage in other winter sports activities.

In the spring and summer, the School of Physical Education and Recreation runs youth sports camps that enable young people to learn basic skills in a wide range of physical activities. A soccer school and daytime and resident hockey schools are part of this program. Most of the instructors in the camps and schools are UBC students who are well qualified to instruct in these activities.

When our new Aquatic Centre comes into operation early in the 1978-79 academic year it will provide an outstanding facility for swimming and a number of academic activities associated with physical education and recreation as well as rehabilitation medicine.

I want to emphasize here that the use of these athletic facilities is not restricted to members of the University community. We have gone to

UBC has one of the most extensive athletic programs in Canada for students, faculty and staff. Facilities are also used by the off-campus community on a year-round basis.



Trophy recognizing UBC's top female athlete for 1977-78 was shared by Dorothy Schwaiger, left above, and Dorothy Livingstone, both members of the UBC Thunderette volleyball team that won the Canadian universities and Canadian open championships. Gary Warner, right, the captain of the UBC Thunderbird volleyball team, was the recipient of the Bobby Gaul Memorial Trophy as UBC's outstanding male athlete.



great lengths to ensure that wherever possible a considerable portion of time is available to community groups and that members of the community-at-large sit on the management committees responsible for the administration of these facilities.

Our extra-mural athletic teams continued to perform well in competition with other universities. The year's top honors went to our women's volleyball team, which won the Canadian open championship in April, 1978, after having won the Canadian intercollegiate championship. The team's captain, Dorothy Schwaiger, shared the most-valuable-player award and the team's coach, fourth-year Education student Dianne Murray, was named coach of the year.

Other women's teams that brought home championships were field hockey, cross country and track and field.

Our men's teams also performed well and brought home their share of championships. Our English rugby team retained the World Cup and two members of the squad — Preston Wiley and Gary Hirayama — were selected for a national team coached by UBC's Donn Spence. Bob Laycoe was named wrestling coach of the year after his team regained the Canada West championship and sent five students to the national collegiate championships, where Peter Farkas won his division and was named outstanding wrestler. Other outstanding performances came from our junior varsity basketball team; our judo team, which won the Canada West title for the fourth consecutive year; our rowing team, which won at local regattas and at two meets in the United States; our men's hockey team, which finished second to the University of Alberta, which went on to defeat the University of Toronto for the national collegiate championship; and our Canadian football team, which came within an eyelash of winning their second straight western Canada title.

Our coaching staff also received their share of national recognition. Donn Spence coached Canada's rugby team; John McBryde served as Canada's national field hockey coach; Bob Laycoe as assistant coach of the Canadian wrestling team at the Commonwealth games held in Edmonton in the summer of 1978; Lionel Pugh as track and field coach to the Canadian team at the same event. And Dr. Robert Hindmarch was a member of the national Hockey Development Council as adviser to Hockey Canada. Rick Noonan, who serves as trainer to senior UBC teams, was head trainer for Team Canada in the World Hockey championships in Prague and at the World B Tournament in Japan.

UBC students are widely recognized for their achievements in fields other than athletics. Many have been singled out for special academic recognition and I extend my personal congratulations to each of them. Listed below are the winners of awards that were announced publicly or reported to me by the deans of faculties.

Dennis Bergen, a fourth-year student in Mineral Engineering, received the top undergraduate award made to students annually in the field, the Canadian Mineral Industries Foundation Scholarship.

For the second year in a row, Anthony Southgate, a graduate student in the Department of Creative Writing, was honored at the Canadian Student Film Festival held in Montreal in September, 1977. His award in this academic year was a special one for dialogue. In the same competition, theatre student Forrest Taylor won the best editing award.

A graduate student in Music, M.C. Maguire, received the William St. Clair Low Award for chamber music in Canada in a competition sponsored by the Composers, Authors and Publishers Association of Canada.

The University Chamber Singers, directed by James Fankhauser, won first prize in the mixed voices category of an annual national choral competition sponsored by the Canadian Broadcasting Corporation.

Craig Emby, a Doctor of Philosophy degree candidate in the Faculty of Commerce and Business Administration, was the recipient of a Bronfman Fellowship to further his studies in accounting. In the same faculty, all three commerce students in the urban land economics division who applied received prestigious graduate scholarships awarded annually by Central Mortgage and Housing Corporation. This brings to five the number of graduate students in the division who hold the CMHC awards.

Third-year Dentistry student Wayne Chou was a student representative at the 56th general session of the International Association for Dental Research held in Washington, D.C., in March, 1978, and UBC representative at the Canadian Dental Association task clinic presentation in Winnipeg. Mark Antosz, a second-year student in the same faculty, represented UBC at the 14th annual Dental Student Conference on Research at the University of North Carolina in April, 1978. J. Girard was a member of the Council of Student Affairs of the Canadian Dental Association.

Tom Redl, a Forestry student working under the direction of Thomas Northcote of the Institute of Animal Resource Ecology, was the recipient of the B.C. Professional Foresters' Prize for the best thesis submitted for the Bachelor of Science in Forestry degree.

Michael Sinclair, a student working with Dr. W.E. Rees in the School of Community and Regional Planning, received an American Institute of Planners' outstanding achievement award for his master's thesis.

Marc Gold, a graduating student in the Faculty of Law, was awarded a Viscount Bennett Fellowship to pursue a graduate degree at Harvard University.

Gordon Wong, a 1978 honors graduate in biochemistry, was the recipient of the 1978 Rhodes Scholarship for British Columbia.

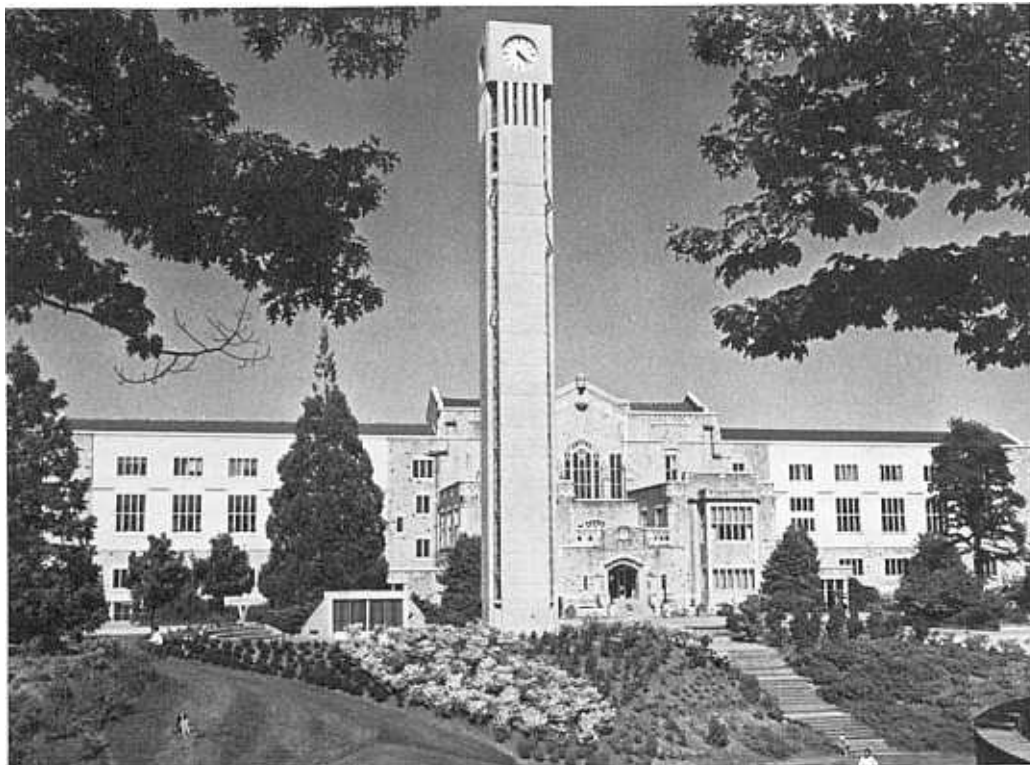
A number of students in the Faculty of Pharmaceutical Sciences distinguished themselves during the academic year. Stephanie Ensworth won the Aubrey Brown Award for the best thesis on a topic related to the practice of pharmacy awarded by the Canadian Association for the Advancement of Pharmacy and was the recipient of an association fellowship to support graduate work in hospital pharmacy. The association's E.L. Wood Award for the best undergraduate research thesis was awarded to

Stephen Ng. Marc Levine had the highest standing in the national Pharmacy Examining Board examinations which won him the George E. Burbidge Award.

Too numerous to mention are the hundreds of undergraduate and graduate students who won national and UBC awards and scholarships for their outstanding academic work. Our students have always done extremely well in the many awards competitions that are held annually. It is their academic abilities which have served to enhance the reputation of the University throughout the world.

The heads of the 1978 graduating classes are listed in a later section of this report dealing with our annual Congregation ceremony for the awarding of honorary and academic degrees.

The useful life of UBC's Main Library, a landmark on the central campus since 1925, is rapidly coming to an end, partly because overcrowding has become a serious barrier to meeting the needs of users.



The University library

UBC's library system, which is charged with maintaining and expanding collections of books, documents, maps and recordings and providing reference services for the University community and the general public, has been among the University units that have been hardest hit in recent years by inflation and the devaluation of the Canadian dollar.

The library spent \$2,473,368 to add 90,403 volumes to its collection in 1977-78; the previous year it spent \$1,954,121 to add 92,843 volumes. This situation would have been significantly worse had not the Board of Governors provided an additional \$487,000 during the academic year so that the library would not experience any loss in purchasing power.

Overcrowding in the Main Library and in reading rooms and branch libraries continues to be a major obstacle in meeting the needs of users of the library system. Main Library collections increased by 53,020 volumes, of which 32,245 were added to the main stacks. But in order to diminish overcrowding on shelves and allow for another year of normal growth, 62,066 volumes had to be relegated to storage, which results in increased costs of operation and user dissatisfaction.

There seems little hope of early relief for the overcrowding problem. The Asian Centre, which will eventually house our outstanding col-

lection of Asian library materials, remains half-finished with no assurance of the funds that would enable us to resume construction, and planning for the extension to the Scarfe Building for the Faculty of Education is in abeyance. The only hope for increased space in the Main Library lies in the completion of the new Library Processing Centre, which is moving ahead but behind schedule. Alterations to the interior of the Main Library will mean very high costs because of the necessity of conforming to the National Building Code. UBC's chief librarian, Basil Stuart-Stubbs, believes that "the useful life of this extremely complex and obsolete building is running out." Clearly, the University will be compelled to face this major issue in the immediate future.

The so-called "knowledge explosion" of recent decades has raised some grave problems for libraries and librarians. It's estimated that information in all fields is doubling every decade. In some areas, the rate of increase is even faster. In a system as large as UBC's, this has meant that the traditional card catalogue has grown to about 6.2 million cards occupying a generous part of one floor of the Main Library as well as scores of catalogues located in branch libraries and reading rooms scattered across the campus.

New technology — the computer and the development of microfiche — hold out the hope of solving some of the problems that confront the librarian and the library user. The first steps in the development of a computer-based union catalogue of UBC's collection of library materials got underway during the 1977-78 academic year. The UBC project is only one slice of a province-wide project which will eventually result in a computer-based union

catalogue that will list the holdings of all B.C. libraries.

This development is particularly important for potential and future students in communities scattered over wide distances in this province. If the library in their own community does not have the material they want, users will be able to locate it rapidly and order it over an interlibrary telex or computer link. The development of this system and establishing it throughout the province is no overnight task, however. It will be five years before the UBC library holdings are on microfiche. UBC and other post-secondary institutions are receiving generous financial backing from the provincial Ministry of Education to enable planning and development to go forward on several aspects of work related to this project.

This development, plus the fact that reference services in the UBC library system continue to attract very heavy use, serves to emphasize what I have said in previous reports: the UBC library system is a provincial and national resource that is called on daily to meet the needs of a wide range of people inside and outside the University. If we continue to experience financial difficulties, the value of that resource will be eroded and will not be able to respond to the legitimate demands made on it. In such a case, it is not just our faculty and students who will be the losers, it will be the entire Canadian community.

Finally, let me say that I have the greatest admiration for Mr. Stuart-Stubbs and his professional and support staff, who make every effort to maintain a high quality of service in the face of severe problems. The time is approaching, however, when hard work will not be able to make up for the widening gap between wish and reality in the Main Library.

Faculty honors and awards

The University honors scholarship and achievement and takes pride when faculty members are recognized by the wider academic community. An impressive number of our teaching and research staff were honored or received awards in the 1977-78 academic year. I take this opportunity to congratulate all these distinguished scholars. I list below those reported to me by the deans of the faculties.

In Agricultural Sciences, Dr. R.M. Beames was inducted into the Canadian Agricultural Hall of Fame and Prof. V.C. "Bert" Brink was the recipient of the Man-of-the-Year Award by the Pacific Seedmen's Association. Dr. R.L. Taylor was elected a fellow of the Linnaean Society of London and Dr. W.G. Wellington a fellow of the Entomological Society of Canada.

In Applied Science, Prof. D.S. Mavinic received the Keefer gold medal for the best paper published in the *Journal of the Canadian Society of Civil Engineering* during 1977. Dr. Yao-Nan Yu, in Electrical Engineering, was elected a fellow of the Institute of Electrical and Electronics Engineers "for contributions to the development of analysis and testing techniques applied to stability of large electrical power systems." Prof. John B. Evans, head of Mineral Engineering, was named the distinguished lecturer of the Canadian Institute of Mining and Metallurgy and in this role spoke to 25 branches of the CIM in Canada.

In the Faculty of Arts, Prof. Keith Aldritt of the English department was elected a fellow of the Royal Society of Literature; Prof. J. Ross Mackay, Geography, was the Arctic Institution's outstanding fellow for 1977; Dr. R.M. Flores received the Canadian Association of Hispanists Award for the best book on Hispanic studies published in the years 1974-77 by a Canadian university faculty member; Roderick and Jean Barman were awarded the Latin American history prize of the American Historical Association for an article on Brazilian history; Prof. Wallace Berry, the new head of the music department, received the award of the American Academy of Arts and Letters for his achievements as a composer; Alan Cairns, the head of Political Science, was awarded the President's Medal of the University of Western Ontario for the best scholarly article in the social sciences published in 1977; and Norman Young, of the theatre department, received the Hamber Award for 1977-78 from the B.C. Drama Association for outstanding contributions to theatre in British Columbia.

In the Faculty of Commerce and Business Administration, Prof. Philem Boyle received an award for contributing one of the outstanding papers of the year to the *Journal of Risk and Insurance*, the leading journal in that field, and Prof. Stanley Hamilton was named an honorary fellow of the Real Estate Institute of Canada in recognition of his outstanding service to that industry and also received an honorary life membership in the Vancouver Island Real Estate Board.

Dean George Beagrie, the new head of the Faculty of Dentistry, was inducted as a fellow of the International College of Dentists.

Awards in the Faculty of Education included the Outstanding Citizenship Award to Prof. Joseph Katz by the Canadian Council of Christians and Jews and the election of Prof. Sam Black to the Royal Canadian Academy of Arts.

Prof. Peter Larkin, the dean of the Faculty of Graduate Studies, was the recipient of the Fry Medal, the highest honor of the Canadian Society of Zoologists.

Prof. Charles Bourne, of the Faculty of Law, was one of four Canadian experts on international law appointed by the federal government to serve on the Permanent Court of Arbitration, members of which are available to arbitrate international disputes that cannot be settled by diplomacy. Members of the permanent court also submit to the United Nations the names of nominees to sit on the International Court of Justice in The Hague, Holland.

In Medicine, Dr. R.A.L. Sutton, of the faculty's Department of Medicine, was the 1978 recipient of the medal of the Royal College of Physicians and Surgeons for studies on the excretion of calcium by the kidney, and Dr. Morton Low of the same department was the first member of a Canadian medical school to take part in a senior medical scientist exchange program between Canada and France.

In the Faculty of Science, Prof. R.D. Frost received the Doctor of Science degree from the University of Liverpool; Prof. Walter Hardy, Physics, was awarded the Herzberg Medal of the Canadian Association of Physicists; Prof. R.A. Freeze, Geological Sciences, and his student R.A.L. Hodge were jointly awarded a prize for the best paper in geotechnical engineering; Dr. William Unruh, Physics, was awarded a prestigious Alfred P. Sloan fellowship; Prof. C.E. Brion, Chemistry, was the recipient of a Guggenheim fellowship; and Prof. Myer Bloom, Physics, was awarded an Isaac Walton Killam memorial scholarship.

In the Centre for Continuing Education, Pat Thom was named Adult Educator of the Year by the Northwest Adult Education Association.

Two members of the UBC faculty were inducted into the Royal Society of Canada in June, 1978: Prof. R. Alan Freeze, of Geological Sciences; and Dr. David Suzuki, of the zoology department.

Honorary degrees were conferred on the following members of our faculty by other universities: Prof. W.S. Hoar, Zoology, by the University of Western Ontario; Prof. Gordon Smith, Education, by Simon Fraser University; and Prof. Arthur Beedle, Commerce and Business Administration, by the University of Malaysia for his contributions to the development of academic programs in that country.

In the Faculty of Pharmaceutical Sciences, Dr. John McNeill was the recipient of the "Good Teacher Award" of the Pharmacy Undergraduate Students Society, and the Walter H. Gage Teaching Award in the Faculty of Applied Science went to Dr. John Bichard who teaches in the engineering physics program of that faculty and in the Department of Physics in the Faculty of Science.

Governing bodies

The Board of Governors and Senate, the two main governing bodies of the University, were reconstituted in the 1977-78 academic year under the terms of the Universities Act.

Prof. Charles McDowell took his seat on the Board in October, 1977, following an election that was necessitated by the resignation of Dr. William Webber, who was appointed dean of the Faculty of Medicine.

Elections and appointments to reconstitute the Board occurred in the months of December, 1977, and January, 1978.

Elected by the faculty to serve three-year terms on the Board were Prof. Peter Pearce, of the Department of Economics, and Prof. R.D. Russell, head of the Department of Geophysics and Astronomy. Mr. Ken Andrews was re-elected by the non-faculty employed staff for a three-year term.

UBC students, in elections conducted in January, elected Mr. Paul Sandhu and re-elected Mr. Basil Peters to serve one-year terms on the Board. Unfortunately, the student elections were marred by allegations of irregularities, which became the subject of an investigation by an ad hoc committee of Senate, which is charged with responsibility for the conduct of elections to University governing bodies. After a thorough study, the committee concluded that while there was evidence of irregularities they were not of a nature that affected the outcome of the election and the results, therefore, should be allowed to stand. While the investigation was underway, however, the students were not allowed to vote on any motion before the Board and were restricted to acting as observers. A committee of Senate is considering action that will prevent irregularities occurring in the future.

In January, 1978, the provincial government announced the appointment of three new members to the Board and the reappointment of Mr. George Morfitt, who was chairman of the Board in 1977-78, and Mr. Ian Greenwood, of Kelowna, who was elected to serve as Board chairman for 1978-79 later in the academic year. The new Board members are: Mr. Leslie Peterson, a Vancouver lawyer who held three cabinet posts, including that of minister of education, in former provincial governments; Mr. Alan F. Pierce, a managing director of a well-known actuarial and pension consulting firm; and Mr. Alan Crawford, president of a B.C. electronics firm. All those appointed and reappointed are UBC graduates with the exception of Mr. Crawford, who is an alumnus of the University of Saskatchewan.

In its announcement, the provincial government said two other present members of the Board, Hon. Thomas Dohm, Q.C., and Professor Emerita of Education Sadie Boyles would continue to serve on the Board until new appointments were made.

At its February, 1978, meeting, the Board accepted with regret the resignation of Mr. P.R. Brissenden, a UBC graduate and well-known

Vancouver lawyer who had served on the Board since March, 1976.

On June 1, 1978, Mrs. Rendina Hamilton was appointed to the Board for a three-year term by the provincial government. A UBC law graduate, Mrs. Hamilton also chairs the Penticton School Board.

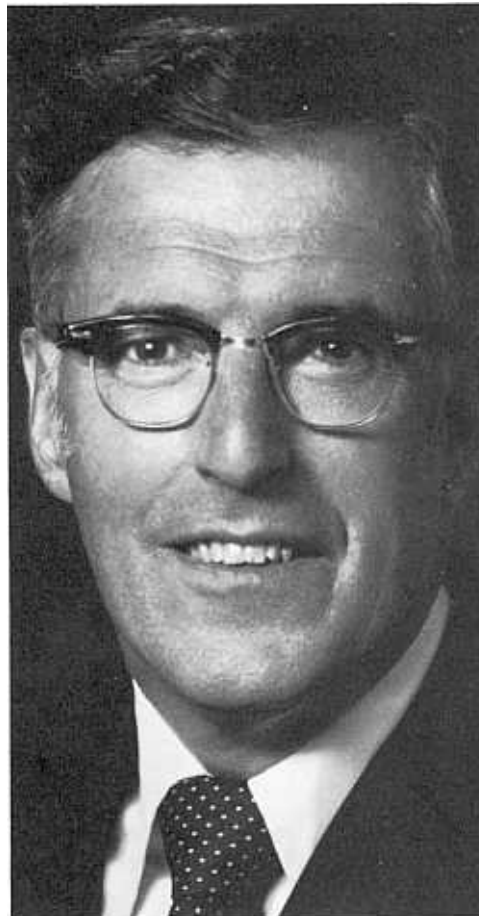
Early in 1978, UBC's Convocation elected Hon. J.V. Clyne, a UBC graduate with a distinguished background in law and industry, to the post of chancellor of the University for a three-year term. He succeeds Mr. Donovan Miller. Mr. Clyne was installed in office on June 2, the final day of UBC's 1978 Congregation and formally became chancellor on June 28.

The reconstituted Senate of the University held its first meeting in April, 1978. In accordance with a motion passed earlier in the year, a representative of UBC's professional library staff now sits on Senate. Mrs. Laurenda Daniells, UBC's archivist and a member of the library's special collections division, was elected to this position for a three-year term of office.

I am deeply grateful to all those who have served on the Board and Senate over the past three years for their untiring efforts to ensure that academic standards at UBC have not only remained high but improved. The last three years have been characterized by acute financial problems which have led to the necessity of making difficult decisions. The advice that I have received from Board and Senate members on many occasions has made the heavy task of administering a complex institution like UBC a lighter and, on the whole, an enjoyable one.



UBC graduate Hon. J.V. Clyne, left, was elected chancellor of the University for a three-year term in 1978. Another UBC graduate, Mr. Ian Greenwood, below, was elected chairman of the Board of Governors for 1978-79.



Congregation

The University's annual Congregation ceremony for the awarding of academic and honorary degrees was held on May 31, and June 1 and 2, 1978, in the War Memorial Gymnasium. During the academic year, the Senate of the University awarded a record 4,562 academic degrees and 86 diplomas.

On Wednesday, May 31, honorary degrees were conferred on Mr. Jack Shadbolt and Dr. Dorothy Blakey Smith. Mr. Shadbolt is one of Canada's best-known painters whose works hang in galleries across the nation and the world, and Dr. Smith was a distinguished member of the UBC faculty from 1935 to 1957, when she joined the staff of the Provincial Archives as a researcher and editor, remaining there until her retirement in 1968.

Two noted graduates and members of the Canadian academic scene were honored on Thursday, June 1: Prof. Harry V. Warren, who embarked on a career as an influential teacher, scholar, scientist and amateur sportsman after graduating from UBC in the late 1920s as a Rhodes Scholar; and Dr. Robert Bell, a 1939 graduate of UBC whose talents as a nuclear physicist and university administrator led to his appointment as principal of McGill University.

On Friday, June 2, honorary degrees were conferred on outstanding Vancouver lawyer and former justice of the B.C. Supreme Court Thomas Dohm, Q.C., who has served on the UBC Board of Governors since 1972; and Mr. Lawrence Wallace, a tireless provincial civil servant who is now agent-general for B.C. in London, England.

A highlight of the 1978 Congregation ceremony was the installation on June 2 of Hon. J.V. Clyne as UBC's 12th chancellor by Hon. Henry P. Bell-Irving, the lieutenant-governor of B.C. Mr. Clyne, a distinguished UBC graduate whose career has encompassed the law and industry, was elected during the academic year to serve a three-year term as chancellor by the Convocation of the University.

The 1978 ceremony was the last presided over by Chancellor Donovan Miller, whose three-year term as chancellor ended officially late in June, 1978. His association with University governance began in the 1950s with an active interest in the UBC Alumni Association, which he served as president in 1960. He was a member of both the Board of Governors and the Senate throughout most of the 1960s and was nominated for chancellor by the Alumni Association in 1974. In his quiet, unassuming way, Mr. Miller has been a most effective spokesman on behalf of the University and I take this opportunity to record my gratitude to him for his untiring efforts and wise counsel over the years. The University will forever hold him in high esteem.

Two people who play key roles in the behind-the-scenes arrangements for Congregation also retired this year. I record the gratitude of the University community to Miss Peggy Sayle, administrative assistant in the Ceremonies Office, who handled much of the detailed preparation for the degree-granting ceremony, and Prof. Robert Osborne, who served as chief marshal

for the student procession for a quarter of a century.

Each member of the graduating class pays a fee, part of which is used to purchase a gift for the University. This year, nearly \$10,000 was distributed to campus organizations that help to improve the physical environment on campus for wheelchair students and provide free legal services in the community to the general public, and to the University Day Care Council, which operates nine centres in the University area.

Each year, the students who head the respective graduating classes of the University are recognized when they arrive at the platform to receive their degrees. I am pleased to pay tribute to their academic achievements. Here is the list of 1977 medal and prize winners.

The Association of Professional Engineers Gold Medal (Head of the Graduating Class in Engineering, B.A.Sc. degree): Brian W. Thomson.

The Helen L. Balfour Prize, \$300 (Head of the Graduating Class in Nursing, B.S.N. degree): Wanda M. Gordon, Lancashire, England.

The Ruth Cameron Medal for Librarianship (Head of the Graduating Class in Librarianship, M.L.S. degree): Mary K.W. Matthews, Hamilton, Ont.

The Canadian Institute of Forestry Medal (best overall record in Forestry in all years of course, and high quality of character, leadership, etc.): Alan J. Waters, Burnaby, B.C.

The College of Dental Surgeons of British Columbia Gold Medal (Head of the Graduating Class in Dentistry, D.M.D. degree): Stanley Soon.

The College of Dental Surgeons of British Columbia Gold Medal in Dental Hygiene (leading student in the Dental Hygiene program): Joan I. McMillan, New Westminster, B.C.

The Dean of Medicine's Prize (School of Rehabilitation Medicine) (Head of the Graduating Class in Rehabilitation Medicine, B.S.R. degree): Penny A. Wilson, Chemainus, B.C.

The Governor-General's Gold Medal (Head of the Graduating Classes in the Faculties of Arts and Science, B.A. and B.Sc. degrees): James L. Tiechroeb, Penticton, B.C.

The Hamber Medal and Prize, \$250 (Head of the Graduating Class in Medicine, M.D. degree, best cumulative record in all years of course): Penny J. Ballem, Montreal, Que.

The Horner Prize and Medal for Pharmaceutical Sciences, \$100 (Head of the Graduating Class in Pharmaceutical Sciences, B.Sc.Pharm. degree): Marilyn J. Fraser, Kincaid, Sask.

The Kiwanis Club Prize, \$300 (Head of the Graduating Class in Commerce and Business Administration, B.Com. degree): Brian R. Watts, Edmonton, Alta.

The Law Society Gold Medal and Prize (Call and Admission fee) (Head of the Graduating Class in Law, LL.B. degree): Marc E. Gold, Montreal, Que.

The H.R. MacMillan Prize in Forestry, \$200 (Head of the Graduating Class in Forestry, B.S.F. degree): Carol A. Frost, Chicago, Ill.



The University's annual Congregation ceremony for the awarding of academic and honorary degrees was held on May 31 and June 1 and 2, 1978. UBC's Senate awarded a record 4,562 academic degrees and 86 diplomas to graduating students.



UBC's 1978 Congregation ceremony was the last presided over by Chancellor Donovan Miller, shown conferring degree on graduating student. Mr. Miller has been closely associated with various governing bodies of the University since the 1950s.

The Physical Education Faculty Award (Head of the Graduating Class in Physical Education, B.P.E. degree): Wendy J. Taylor.

The Recreation Society of British Columbia Prize (Head of the Graduating Class in Recreation, B.R.E. degree): Leslie E. White.

The Royal Architectural Institute of Canada Medal (outstanding student in Architecture, B.Arch. degree): Allan A. Hepburn, Hamilton, Ont.

The Wilfrid Sadler Memorial Gold Medal (Head of the Graduating Class in Agricultural Sciences, B.Sc.(Agr.) degree): Gertrud Jensen, Copenhagen, Denmark.

Special University Prize, \$200 (Head of the Graduating Class in Fine Arts, B.F.A. degree): William J. Jeffries, Jersey City, N.J.

Special University Prize, \$200 (Head of the Graduating Class in Home Economics, B.H.E. degree): Patricia A. Buckley.

Special University Prize, \$200 (Head of the Graduating Class in Licentiate in Accounting, Lic. Acct. degree): William D. Filtness.

Special University Prize, \$200 (Head of the Graduating Class in Music, B.Mus. degree): John F.I. Fairlie, Deep River, Ont.

The University Medal for Arts and Science (Proficiency in the Graduating Classes in the Faculties of Arts and Science, B.A. and B.Sc. degrees): Yvonne Y. Hsieh, Hong Kong.

Dr. Maxwell A. Cameron Medal and Prize (Head of the Graduating Class in Education, B.Ed. (secondary) degree): Lina Davita.

Dr. Maxwell A. Cameron Medal and Prize (Head of the Graduating Class in Education, B.Ed. (elementary) degree): Barbara J. Pozzebon.

Appointments, resignations and retirements

During the academic year the Board of Governors approved a change of title for Vice-president Michael Shaw from vice-president for University development to vice-president for academic development. Because this title change involves added duties, Prof. Ronald Shearer of the Department of Economics was appointed assistant to Vice-president Shaw.

Prof. Hugh Greenwood, a member of the UBC faculty, became head of the Department of Geological Sciences on December 1, 1978, succeeding Prof. Hugh Wynne-Edwards, who has accepted an important post in the field of science and technology with the federal government.

Prof. Brahm Wiesman succeeded Prof. Henry Hightower, who remains at UBC, as director of the School of Community and Regional Planning in the Faculty of Graduate Studies.

Dr. George Beagrie became dean of the Faculty of Dentistry on July 1, 1978, succeeding Dr. S. Wah Leung, the founding dean of the faculty who will continue to carry out teaching and research duties at the University.

Dr. H. Joachim Burhenne joined the faculty on April 1, 1978, to head the Department of Diagnostic Radiology in the Faculty of Medicine.

Dr. Terence McGee joined the Department of Geography and assumed the post of director of the Institute of Asian Research on July 1, 1978.

Mr. Jindra Kulich was confirmed as director of the Centre for Continuing Education, effective April 1, 1978.

Prof. Philip G. Hill, a member of the Department of Mechanical Engineering, became head of the department on July 1, 1978, succeeding Prof. James P. Duncan, who continues as a faculty member.

Prof. R.G. Campanella became head of the Department of Civil Engineering, succeeding Prof. Sam Lipson, who will remain on the teaching staff.

Prof. Ben Moys became head of the Department of Mathematics on July 1, 1978, succeeding Prof. Ronald Bures.

Dr. Robert Morford became director of the School of Physical Education and Recreation on July 1, 1978, succeeding Prof. Robert Osborne, who has retired.

The following persons submitted their resignations during the academic year (unless otherwise indicated, they will remain members of the UBC faculty): Prof. Liam Finn as dean of the Faculty of Applied Science; Dr. Margaret Fulton as dean of women to become president of Mount St. Vincent University in Halifax; Prof. Francis E. Murray as head of the Department of Chemical Engineering; Prof. Gordon Walker as director of the Institute of Astronomy and Space Science; Prof. William C. Gibson, head of the Department of the History of Medicine and Science, to become chairman of the Univer-



Dr. George Beagrie is the new dean of UBC's Faculty of Dentistry, succeeding Dr. S. Wah Leung, who remains at UBC as a teacher and researcher.

sities Council of B.C.; and Prof. R.D. Russell as head of the Department of Geophysics and Astronomy.

Eighteen members of UBC's teaching, research and administrative staff reached retirement age in the 1977-78 academic year, seven of them with 30 or more years of service.

Jack Hunter, a familiar and active figure on the UBC campus for 42 years, retired after serving as manager and consultant to the UBC Bookstore and director of Campus Mail. He is a good friend of the University.

Prof. Vernon C. "Bert" Brink, a 1930s graduate of UBC who became a member of the Faculty of Agricultural Sciences in 1940, retired after 37 years as a teacher and researcher who was widely known and respected in the agricultural and scientific community of B.C.

Two faculty members who retired after 33 years of service were: Prof. Robert Osborne, one of Canada's outstanding athletes in the 1930s who joined the UBC faculty in 1945 as head of the School of Physical Education and Recreation; and Prof. Leslie G.R. Crouch, a member of the Department of Mineral Engineering and a former president of the Association of Professional Engineers of B.C.

Prof. Sam Lipson, a faculty member since 1946 and head of the Department of Civil Engineering since 1970, retires after 32 years at UBC. He, too, is a former president of the Association of Professional Engineers of B.C.

Retiring after 31 years of association with UBC are Prof. Paul Wisnicki, of the University's School of Architecture, and Prof. Alex Wainman, a linguist who specialized in the study of Slavonic languages in the Department of Slavonic Studies. Both joined the faculty in 1947.

Those who retired after 20 or more years of service are: Dr. Maurice Young, an original member of the pediatrics department of the Faculty of Medicine when it was established at UBC in 1951 and associate dean for residency programs in the faculty since 1974; Dr. Brock M. Fahrni, who joined the UBC faculty in 1952 to lay the groundwork for the School of Rehabilitation Medicine, which he has headed since 1961; Prof. Philip G. Haddock, a silviculture expert and forest geneticist in the Faculty of Forestry since 1953; and Prof. Robert J. Gregg, a linguist who taught since 1955 in several departments in the Faculty of Arts before being appointed head of the Department of Linguistics in 1972.

Three members of the Faculty of Education who retired after 20 or more years of service are: Prof. Donald C. Gibbard, a music specialist who was on the teaching staff of the provincial Normal School when it was incorporated into UBC as the Faculty of Education in 1956; Prof. Harold Covell, a reading expert who joined the faculty in 1957 and who is the author of a number of textbooks used to teach reading in Canadian schools; and Prof. Sam Black, one of Canada's best-known painters, winner of UBC's Master Teacher Award in 1970 and professor of art education since 1958.

Other retiring faculty members are: Dr. Vera MacKay, an 18-year member of the Faculty of Education's elementary division; Prof. Dennis Chitty, an internationally known zoologist who

joined the faculty in 1961 and who was the winner of UBC's Master Teacher Award in 1973; and Prof. Maurice Pryce, a distinguished physicist who also served as acting director of the University's Institute of Astronomy and Space Science in addition to teaching in the Department of Physics for 10 years.

John C.F. Gray reached the age of retirement after serving on the staff of the UBC library for 14 years, laterally as a cataloguer in the catalogue records division.

I extend the warm thanks of the entire University community to those who retired after many years of dedication to the academic life of the University. Over the years, the University has had the benefit of much counsel and help from these distinguished individuals. We are especially grateful and indebted to them for their contributions to many areas of University life. We owe much of the success of the University to them.



Prof. Hugh Greenwood, a long-time member of the UBC faculty, is the new head of the Department of Geological Sciences.



Dr. Terence G. McGee joined the faculty as head of the Institute of Asian Research and professor in the geography department.



UBC graduate Dr. Robert Morford returned to his alma mater as director of the School of Physical Education and Recreation in the Faculty of Education.



Dr. Vernon C. "Bert" Brink retired after 37 years as a teacher and researcher in the University's Faculty of Agricultural Sciences.



Prof. Sam Lipson retired after 32 years as a faculty member and head of the Department of Civil Engineering since 1970.



Jack Hunter, a familiar campus figure for 42 years, retired after serving as manager and consultant to the UBC Bookstore and director of Campus Mail.

Deaths

The year also brought its sadness. With regret and sorrow, I record the names of active and retired faculty members who died during the academic year. We mourn the loss of the following friends and fellow members of our community.

Benjamin Trimble, assistant professor in the Department of Medical Genetics, died on Nov. 10, 1977.

Stephen W. Borden, a computer analyst in the Faculty of Graduate Studies, died on Jan. 29, 1978.

Professor Emeritus of Classics Geoffrey Riddehough died in London, England, on April 6, 1978.

David Elder, head of the diploma division of the Faculty of Commerce and Business Administration, died on April 23, 1978.

Dr. Sydney Israels, a member of the Department of Paediatrics, died suddenly on July 17, 1978.

The University lost a firm friend and former member of the Board of Governors on April 12, 1978, with the death of Dr. Leon Ladner. A founding member of the Convocation of the University, Dr. Ladner provided, following his retirement from the Board in 1966, the funds to construct the Ladner Clock Tower which stands in front of UBC's Main Library.

