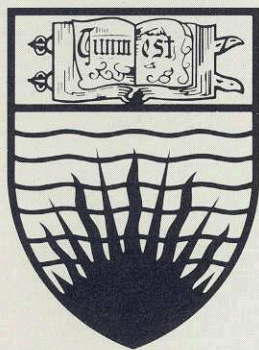
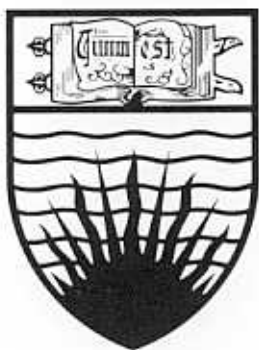


The President's Report 1976-77



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 1976-77 academic year.

The University of British Columbia

Foreword

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

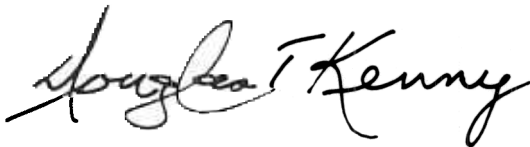
In this report on the 1976-77 academic year I have tried to record the significant academic accomplishments of the year as well as the major problems that arose as a result of financial cutbacks and inflation.

Despite the financial difficulties that confront us, I believe that the basic functions of the University — teaching, research and service to the community — remain intact and fundamentally sound.

The maintenance of the integrity of the academic enterprise at UBC in the face of these problems is no small tribute to the individuals and groups that make up the University community — the members of the Board and Senate, the two main governing bodies of the University; the deans and administrative heads, who daily have to grapple with the basic realities of our current problems; the faculty, whose loyalty to their disciplines and the University preserves and strengthens the values on which UBC was founded; the employed staff, whose dedication and support help in the maintenance of academic standards; and our students, whose energy and intellectual curiosity make UBC one of the liveliest places in Canada.

While I have mixed feelings about the current state of the University, I remain optimistic about the future of higher education in general and UBC in particular. My feelings of optimism result from the expressions of goodwill for the University that I have encountered locally and in my travels around the province. There is a very substantial pool of goodwill for UBC in the community and I am confident that public opinion will ultimately prevail and that the University will receive the resources it needs to enhance and expand opportunities for higher education for all those who are capable of taking advantage of them.

Cordially yours,

A handwritten signature in black ink, reading "Douglas T. Kenny". The signature is fluid and cursive, with the first name "Douglas" and last name "Kenny" clearly legible.

Douglas T. Kenny
President



The President's Report 1976-77

It is with mixed feelings that I begin this report on the activities and events of the 1976-77 academic year at the University of British Columbia. Let me explain why in terms of the three main functions of the University — teaching, research and service to the community.

Our teaching function has never been more extensive and diverse. Some new programs and courses were introduced and internal changes and improvements made in the academic offerings of every faculty of the University. But the functioning of a

large number of academic units and the University library system has been weakened and new academic opportunities have had to be foregone because of inadequate operating grants.

The quality of our faculty attracted more than \$17 million for research in the 1976-77 fiscal year. The University also opened several new buildings that offer opportunities for expanding our research and teaching capabilities. But government policies and inflation are such that an additional \$3 million is required immediately simply to bring UBC's total research effort back to 1970-71 levels. And we have a backlog of unmet building needs that total approximately \$145 million.

In the area of public service and professional activities, faculty members have continued to be active in placing their expertise at the disposal of governments, industry and community organizations. But the University has come under attack in the

UBC strove to maintain and enhance its academic standards in 1976-77 in the face of inadequate operating grants and a near-crisis in research funding.

UBC's teaching function has never been more extensive and diverse, but some courses and programs approved in 1976-77 have been shelved because funds are not available to offer them.



past year for this function and steps have been taken that will formalize and, in some cases, limit this activity.

It is this series of paradoxes that has led to my mixed feelings. I take pride, on the one hand, in the accomplishments and activities of our faculty, students and employed staff and, on the other, I have a growing sense of apprehension that the basic functions of the University are being undermined by a faltering commitment to higher education. The federal government, for instance, has withdrawn its direct support to Canadian higher education. Until March 31, 1977, the federal government paid 50 per cent of the approved costs of higher education under an agreement with the provincial governments. Under new arrangements, the federal government has transferred income tax points and makes cash payments to the provincial governments which are intended to compensate for the operating costs of post-secondary education. The provincial governments, however, are under no obligation to use the funds obtained in this way to meet the operating costs of the universities.

My mixed feelings are set against another paradox. A recent poll by the

Southam Press asked Canadians what element in their society they valued most. The answer was "education." If Canadians place such a high value on education it should follow that the level of government support will reflect the will of the people.

Such is far from the case. Over the past two years, shortfalls in operating grants to UBC have forced us to cut \$3.1 million out of our operating budget. The impact of these cutbacks has been threefold:

- We have been unable to make appointments in areas of the University that need strengthening. The \$3.1 million pared from UBC's operating budget means that the University has cut back the equivalent of 150 assistant-professor positions, if one assumes that a new appointee at this rank is paid \$20,000 a year.

- The academic functioning of a large number of faculties and departments has been weakened as a result of the cutbacks. For our students, this has meant larger classes because many sections have had to be cut from required or popular courses and, in some cases, departments have not been able to offer specific courses despite student demand.

- Some new courses and programs approved by the University and the Universities Council have been shelved because funds are not available to offer them. In other cases, faculties and departments have had to be told that a proposed new academic direction has no hope of being implemented because of the financial squeeze.

The financial cutbacks and the inroads of inflation are being felt by all groups at the University, including our students. They are paying higher prices for food, residence accommodation and parking. And during the academic year the Board of Governors, in order to balance the budget, was forced to raise tuition fees between 25 and 30 per cent for the 1977-78 academic year. This course of action was taken with the greatest reluctance and only after the Board had made a formal request to the Universities Council for additional funds for the coming year. When this request was rejected, the Board had no recourse but to impose the increased fee schedule. The fee increase was not the only strong measure needed to balance the budget. The Board also approved cutbacks totalling \$1.3 million from the budgets of every academic and administrative unit.

In terms of research, the universities of Canada have traditionally relied on the

federal government for funding. In recent years, funds from this source have declined rapidly, with the result that we face something very close to a crisis at UBC in research funding. This dangerous change in public policy has a number of ramifications.

In the first place, it denies to gifted young people and established academics the opportunity to break new ground in the search for knowledge. And because research is a valuable training ground for graduate students, we may even now be creating a manpower gap that will become evident only toward the end of this century, when the need for highly trained specialists could become greater than ever.

A decline in research funds also means that the quality of teaching is impaired. Teaching and research are really two sides of the same coin; the new knowledge painstakingly gained in the laboratories and the libraries of the University is communicated to students in the classroom. In the absence of adequate research funding our teaching capability is diminished. The ultimate losers are the students.

Finally, the decline in research funding impairs Canada's ability to come to grips with the problems that confront it in the realms of science, the economy, and the quality of life of our citizens. Few voices are raised in opposition to research that holds out the hope of solving inflation or developing new ways of exploiting and managing our natural resources. But there is an equally pressing need for exploration in the humanities and other social sciences. To support only those areas that promise to improve our material needs is to see Canada as a country where progress is measured in terms of shares traded and dividends returned.

In the past year, I have come to the conclusion that the public is unaware of the very substantial achievements of the universities over the past three decades. Let me briefly review how UBC has responded to the challenges following the Second World War.

When hostilities ended in 1945, UBC was a university of three faculties and a student enrolment of just over 3,000 students. In the following winter session enrolment more than doubled and in 1947-48, our total registration at winter and summer sessions and for extra-session studies was 11,189. Anyone who attended UBC at that time knows the ter-



rible inconveniences that students and faculty members faced — overcrowded classrooms and laboratories that operated six days a week, an inadequate library where study seats were at a premium, and endless lineups for textbooks, food and registration.

It was also the period that marked the advent of surplus army huts to the campus. More than 300 were brought to UBC to serve as *temporary* classrooms, laboratories and offices. I emphasize "temporary" because some 100 of these wooden buildings are still with us, and I see no hope that we will rid ourselves of them in the near future. Perhaps UBC graduate Eric Nicol, who himself taught in several of them during his career here, said it all when he remarked in one of his newspaper columns that the huts have seen "more service in the war against ignorance than they ever saw in the war against Hitler."

By the mid-1950s, there was a consensus that something had to be done about the shoestring financing of the past and the utterly inadequate physical plant of Canadian universities if the country was to meet new challenges. In addition, we had entered a period of growth in student enrolment that approached 10 per cent a year.

UBC continued to be a major Canadian research centre in 1976-77, despite the fact that government policies and inflation have combined to weaken the University's research capacity.

Education, in the decade from roughly 1955 to 1965, became a national priority. In British Columbia, the provincial government and the general public provided massive funds for new buildings and facilities and operating grants increased substantially to enable us to recruit new faculty and pay an escalating salary bill that resulted from intense competition for new teachers. New universities and regional colleges came into existence in the latter part of this period, which further added to the costs of education.

By the mid-sixties, UBC had been transformed from an institution of essentially provincial importance to one that could point to a national and international reputation.

The supreme irony of this is that today some of the sharpest criticism that is levelled at the universities centres on their size and the composition of the faculty, who are supposedly paid inflated salaries.

In the late 1950s, however, there was simply no alternative but to allow university enrolments to increase. UBC and its affiliate, Victoria College, were the only institutions of higher education in the province at that time, and higher education was provided to a rapidly increasing student body at very reasonable costs.

Our heavy dependence on foreign scholars during this period has a simple explanation — Canada's undeveloped graduate schools were simply not capable of producing university-level teachers. Canadian universities had no alternative but to attract foreign scholars to teaching posts. We managed to do that quite successfully, but Canada has never acknowledged the debt it owes to this dedicated group of scholars, many of whom made sacrifices in order to come to this country.

I also reject the argument that we pay our faculty excessive salaries. If we want high-quality teachers and researchers — and I cannot conceive that British Columbians would want anything but the best available people to be hired at UBC — then we are going to have to pay for it. Our competition is not limited to other Canadian universities; business and industry exert a powerful influence on university salary levels.

Salary levels at UBC compare favorably with those at McGill and Toronto, the universities that can most logically be compared with UBC. I should add also that our salary adjustments for faculty at UBC in

the past two years were among the lowest in Canada.

Traditionally, universities have encouraged faculty members to make their knowledge and expertise available to industry and professional organizations, provided always that such activity does not detract from their primary commitment to teaching and scholarship. In the 1976-77 academic year, UBC came under heavy attack in the news media for one cited case of overzealous consulting activity. The impression that has been created is one of professors spending more time consulting than teaching, of neglecting their primary responsibilities in order to earn, outside UBC, fees that equal or exceed their salaries. This is a classic case of arriving at a generalization on the basis of a single example.

The upshot of this criticism is that we have had to establish machinery that requires faculty members to report regularly on their outside activities, and to set limits on the amount of time that they are allowed to devote to professional consulting. In consultation with the UBC Faculty Association, a University-wide committee has been established to make recommendations on this subject.

As in the past, we will do everything possible to maintain and enhance academic standards to ensure that our students receive the best possible education. Here, I want to emphasize that about 85 per cent of our total operating expenditures are tied up in salaries and wages for our teaching and employed staff. The remaining 15 per cent of University operating costs is in non-salary items, many of them virtually uncontrollable, for example, heat, light, water, and telephone services. For the fifth year in a row, UBC placed first in a national survey of the percentage allocation of funds for academic purposes in 23 Canadian universities with enrolments of 6,000 or more. The same survey showed we ranked lowest in the percentage of funds allocated for administration.

In short, when difficult choices have to be made about spending priorities, UBC has chosen to strengthen its academic function.

I want to assure you that economies are being effected wherever possible in such areas as energy costs, plant maintenance and through consolidation of services. Our faculty are pursuing research grants from all possible sources. And we are pressing

our case for adequate operating and capital grants before the Universities Council and the provincial government.

The cutbacks of the last two years have placed the University in a financial strait-jacket that threatens the academic enterprise. Any further cutbacks can mean only one thing — we will face the very real prospect of a slide into mediocrity and a lowering of academic standards. I cannot believe that British Columbians favor a second-class future because of a lack of commitment to first-class education.

The balance of my report for the 1976-77 academic year will deal with the accomplishments and challenges that were a part of the University experience during that 12-month period. It is a somewhat mixed picture compounded of unequal parts of growth and frustration in terms of the development of our academic offerings and our physical plant.

Teaching and the curriculum

Any university worthy of the name has a constantly changing curriculum that reflects many things — new knowledge that is continuously accumulating as the result of research by scholars all over the world, new fields of study that result from advances in technology and the merging of related disciplines, the stated needs of business and industry, and student interests.

The University constantly has to guard against pressures to introduce vocational programs that are better suited to other kinds of institutions, and fields of study that are faddish to the extent that initial interest is followed by neglect. There also have to be assurances that qualified faculty are available to teach new courses and programs, that library facilities are adequate to meet the needs of both students and instructors, and that there is adequate space to house new or expanded programs. All of these factors have financial implications.

Thus, proposals that alter, add to, or eliminate courses and programs from the curriculum are subject to rigorous study at many University levels. From their point of

initiation in the departments of the University, proposals are scrutinized at the faculty level before being forwarded to Senate. At this level they are considered by the curriculum or new programs committees and then debated on the floor of Senate. They are then subject to approval by the Board of Governors and the president, who must determine whether physical space and adequate finances are available for their implementation.

If they pass all these hurdles, proposals then go the Universities Council, where they are again subject to review and study. The establishment of the council has meant that there is a delay of up to two years from the time a proposal is initiated to its appearance in the University Calendar as a course offering.

What follows is a faculty-by-faculty listing of major program and course changes in 1976-77. Programs and courses we have been unable to offer because of financial limitations are also listed.

AGRICULTURAL SCIENCES. A new program in aquaculture — the growing of plants, fish and animals in seawater — was introduced in this faculty in the Department of Bio-Resource Engineering. The undergraduate program, a first in western Canada, offers an interdisciplinary approach in terms of teaching, research and public service. It will involve the disciplines of genetics, nutrition, disease control, economics and engineering. Under the department's energetic new head, Dr. John Zahradnik, an active research program has commenced. Units for growing seaweed, an important source of thickening agents in food production, are being tested in the Strait of Georgia, and at the University's Oyster River research farm on Vancouver Island a pilot plant has been set up for studies on the utilization of animal wastes to grow zooplankton, a major source of food for fish. Water discharged from the unit is used to irrigate pasture on the research farm.

The faculty also introduced a new rangeland resources option in the Department of Plant Science, a program that involves several other departments in the faculty as well as the Faculty of Forestry.

Dr. Warren Kitts, the new dean of agricultural sciences, has drawn attention to the need for development of a series of land bases in the province to maintain and extend the faculty's teaching, research and public service programs. A number of

these land tracts would be necessary in various areas of the province in order that the work carried out at each of them would reflect local needs and conditions. Dr. Kitts and his colleagues have already defined a suitable tract for this purpose near Langley in the Fraser Valley and a task force of UBC and provincial government agriculturalists has begun to draw up plans and prepare a proposal for development of the area for submission to the provincial government.

The faculty has also submitted to the Interior University Programs Board, established to advise the Universities Council and the provincial government on the delivery of credit courses in the B.C. Interior, a proposal to set up agricultural resources programs in conjunction with regional colleges that would use research lands owned by Agriculture Canada for teaching and research keyed to the needs of each area of the province.

APPLIED SCIENCE. The faculty introduced new courses at the graduate level in waste treatment and disposal and in geotechnical engineering in the Department of Civil Engineering. These offerings will strengthen the department's curriculum and development in environmental engineering, soil mechanics and off-shore ocean technology. Funding has also been provided to foster research and teaching in the area of soil mechanics. A diploma course in surveying within civil engineering was dropped because of declining interest and low student registration.

Within the Department of Mechanical Engineering, a naval architecture program got underway. The program is being offered as a fourth-year option as the initial stage in the development of Canada's first professional school of naval architecture. Seed money to initiate the courses has come from Canadian shipbuilders, designers and allied industries, and the provincial and federal governments. The program will benefit from the construction of a \$1.7 million towing tank and manoeuvring basin constructed with provincial and federal grants at B.C. Research on the campus.

In June, 1977, the Board of Governors approved funding to enable the Department of Mineral Engineering to begin planning an extension of its teaching and research in coal production engineering in accord with a submission approved by the Universities Council. It is expected that the

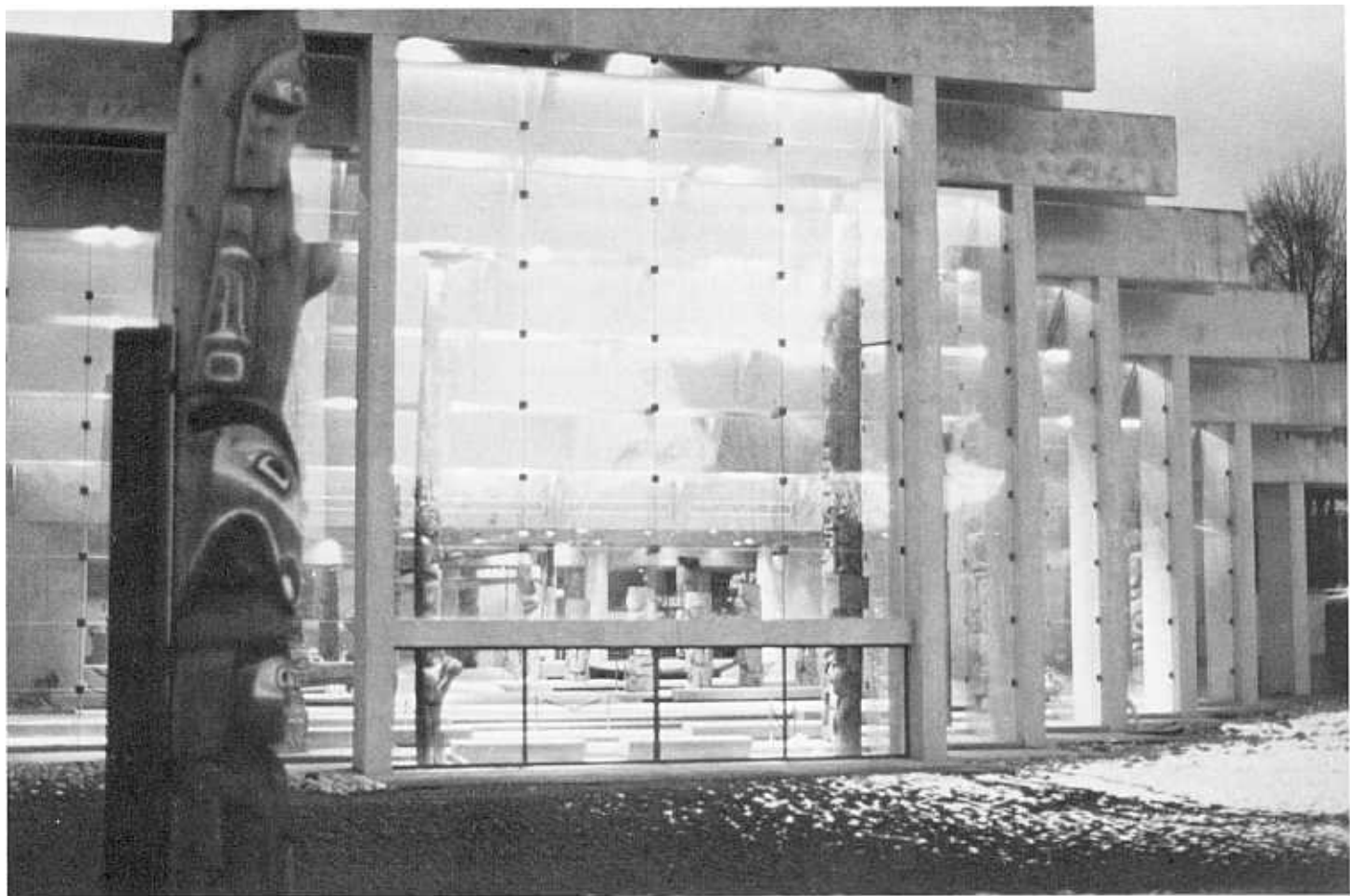
expanded program, which will require additional faculty appointments as well as new physical space for the department, will begin operating in the 1978-79 academic year.

The current academic year was the last one in which the University received funds from the W. K. Kellogg Foundation of Battle Creek, Michigan, to aid an expansion of the University's School of Nursing in the Faculty of Applied Science. The school received a total of \$330,460 between 1973 and 1977 to cover the salaries of new faculty members and clerical staff, travel and consultation expenses, supplies and audio-visual teaching equipment. The foundation's decision to appropriate this significant grant was the result of the school's work in developing a new body of nursing knowledge, by its new approach to nursing education, and especially by its integration of the two-year nursing program offered by regional colleges and a new four-year bachelor's degree program offered at UBC.

The foundation, on its part, has expressed its satisfaction with the developments that have taken place in the School of Nursing as a result of the grant to UBC. The University has expressed its gratitude to the foundation for its generosity in supporting an expanded nursing program that prepares students for work in community and preventive health care and hospital care for acute and long-term illness. This is one of two grants from the Kellogg Foundation that terminated this year, and for which replacement funds will have to be found if the programs they supported are to continue. Details on the second Kellogg grant are noted under the section of this report dealing with continuing education.

ARTS. The Faculty of Arts was the hardest hit of UBC's 12 faculties by the need to eliminate \$3.1 million from our operating budget over the past two years. Despite cutbacks of \$557,988, the faculty has maintained and improved its academic standards and achievements. Standards for promotion and tenured appointments are higher than in the past and are continuing to rise. This improvement has taken place in spite of the need to cope with shifting student populations and the development of new programs, and in the face of budget cuts and the resulting strain on morale.

The arts faculty, and the Department of English in particular, has made an effort in recent years to impress on educators and



the public the need to improve the quality of English-language teaching in B.C. Two developments of the past year give cause for satisfaction; there are signs of a shift in emphasis in the school curriculum to place greater importance on grammar and composition, and the introduction of an English placement test by the provincial Department of Education will mean that our Department of English will no longer have to administer a similar test to students entering UBC for the first time in order to place those who need remedial work in special sections. The English department has also received Senate approval to terminate its remedial-English program in 1979. In that year the Centre for Continuing Education will be responsible for this program. It should be kept in mind, too, that there are many students taking English courses who show above-average abilities in language use. To enable these students to concentrate on literature, 13 special sections of English 100 were in operation in 1976-77.

The financial cutback in arts is reflected

in the fact that three departments and two schools were unable to offer approved programs in 1976-77. Lack of funding prevented new courses in children's literature being offered in creative writing; a concentration in law librarianship is in abeyance; and the faculty was unable to offer programs leading to the degrees of Master of Fine Arts and Doctor of Philosophy in Theatre History and a diploma program in community nutrition in the School of Home Economics.

The faculty has been active in revising and reviewing existing programs. These have taken place in geography at both the undergraduate and graduate levels; in Germanic studies, which completed a revision of the first-year German program in 1976-77; and in the School of Home Economics, where a thorough review of the undergraduate curriculum in human development and family science was completed, and a new majors program in family science, involving the introduction of six new courses, was established. The introduction of two new correspondence

More than 127,000 persons visited UBC's new Museum of Anthropology in 1976-77 to view its permanent collections as well as a number of special displays and events.

courses at the third-year level by the Department of Psychology has made it possible for students to complete all but one of the course requirements for a psychology major by this method.

A successful review of the art history program in the Department of Fine Arts was carried out with the aid of outside consultants. The report of the review committee indicated that the quality of the program is satisfactory at both the undergraduate and graduate levels.

A number of academic units in arts with applied and clinical teaching programs have expressed their concern that criticism of outside professional activities by faculty members will lead to restrictions that will diminish contact with community agencies, which are valuable as sites for teaching and research. Unwarranted restrictions by the University, they say, could be a "serious deterrent" to efforts to develop first-class professional programs in the community.

It is my hope that such fears will not be realized. We are aiming to develop some broad and flexible policies that will guard against abuses while at the same time permitting our experts to make their knowledge and abilities available in the community.

Finally, in this section of the Faculty of Arts, I take the opportunity to report on the first full year of operation of the new Museum of Anthropology. The faculty is administratively responsible for museum operations because, in addition to being a valuable public facility, the museum is a major centre for teaching and research. In other words, the concept embodied in the plans of the museum was that it should be a place of learning and discovery for the general public, students and scholars. I am pleased to report that in its first year, the museum attracted more than 127,000 persons to see its permanent collections, special displays by contemporary Indian craftsmen and a host of other events. The staff of the museum, ably led by its director, Dr. Michael Ames, overcame many obstacles in the first year of operation and have made it a lively and attractive addition to the cultural resources of Canada.

COMMERCE AND BUSINESS ADMINISTRATION. The faculty introduced no new programs in 1976-77, but undertook a major review of the curriculum leading to the Bachelor of Commerce degree. Higher entrance and

advancement standards were developed for Senate approval and additional proposals for curriculum changes will be brought forward in the 1977-78 academic year.

Funds were provided to enable the faculty to expand its evening program leading to the degree of Master of Business Administration. One section of all first-year M.B.A. courses is available to evening students, and the heartening response to this expansion has led the faculty to investigate the possibility of offering a complete evening degree program. I am hopeful that funds will be available to enable the continued expansion of this evening program.

The faculty, which has experienced very significant enrolment increases in recent years, signified its intention of placing greater stress on its Ph.D. program by appointing Prof. Kenneth MacCrimmon as program director. He has already given a new sense of direction to research in the early stages of the Ph.D. program and has undertaken a more thorough screening process to identify the best possible candidates for admission to the program.

The faculty introduced six new courses in 1976-77 that strengthen existing programs in urban land economics and in labor and manpower.

DENTISTRY. The faculty made progress in the 1976-77 academic year in the generation of new programs. A program leading to the degree of Master of Science in Dental Science and a postgraduate certification course in periodontics await approval by the Universities Council before being implemented. A bachelor's degree program in dental hygiene has received faculty approval and will be forwarded to Senate for discussion.

The faculty's undergraduate dental program continues to improve through course adjustments, better timetabling, and an ongoing program to measure teaching effectiveness. Support from the provincial government has enabled the faculty to operate a summer dental clinic where Lower Mainland school children receive free dental treatment and students benefit through practical training.

Recent changes in the provincial Dentistry Act have specified additional duties for dental hygienists. The faculty has responded by adjusting its teaching program to include instruction and clinical practice in these new areas of responsibility. Concrete evidence of the excellence of



More than 900 elementary and secondary school children received free dental treatment in the summer of 1977 from students in UBC's Faculty of Dentistry, who worked under faculty supervision.

the existing diploma program in dental hygiene has been furnished by the performance of the members of the 1977 graduating class, all of whom wrote the U.S. National Board exams. The class average was over 91 per cent and UBC was ranked 8 out of 174 programs in North America.

The Department of Oral Medicine has begun a new service and teaching clinic called the Mouth and Mucosa Referral Clinic, which is located at the Vancouver General Hospital in association with the Department of Dermatology of the Faculty of Medicine.

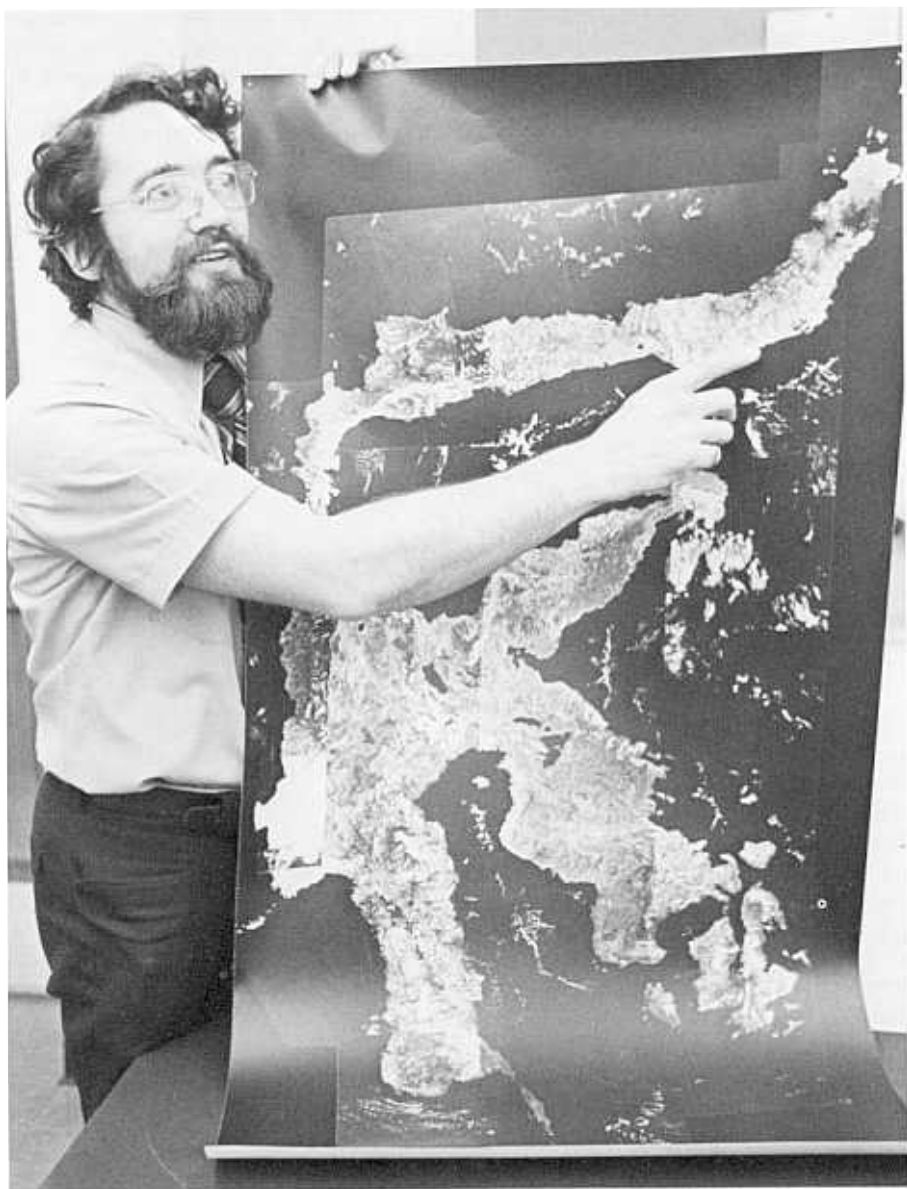
The demand for continuing education programs in dentistry continues to increase, partly as a result of new regulations that make it mandatory for practising dentists to update their skills. There has been a significant rise in registration for continuing dental education programs since January 1, 1977, when the new regulations were introduced.

Finally, I would like to pay tribute here to Dean S. Wah Leung, who resigned as head of the faculty on June 30, 1977, but who will remain at UBC as a professor. Dr. Leung was the founding dean of the faculty which was established in 1962. As the first dean of dentistry he faced the special problems of recruiting the research and teaching staff, overseeing the planning and construction of facilities to house the facul-

ty, initiating the training program in dental hygiene, and fostering continuing education and public service programs. He has carried out these duties with energy and devotion over a period of 15 years and developed a faculty with a balanced program of teaching, research and public service. The faculty has graduated more than 200 dentists since 1968, and all but a handful of these graduates are practising in communities throughout B.C., which indicates that the faculty is serving the province well. The quality of the faculty's graduates is, ultimately, the best tribute that can be paid to Wah Leung.

EDUCATION. This faculty was hit hard over the past two years by financial cutbacks. A total of \$338,548 in salaried positions was removed from the faculty's budget. Despite this, the education faculty managed to respond well to new initiatives and proposals that provide a variety of opportunities for teacher training.

Approval was given for a new five-year program leading to the degree of Bachelor of Education in special education. Students trained under this program will be able to recognize and deal with the estimated 5 to 7 per cent of B.C.'s school population who are mildly handicapped. The new program will accept its first students in September, 1977, and will fill a real need in the school system for a group of specialized teachers who are skilled in



Dr. Peter Murtha is co-ordinating a new program in remote sensing — the interpretation of information about the earth recorded by satellites and high-flying aircraft.

meeting the needs of this group of children.

A new program called LISTEN, an acronym for Low-Income Student Teacher Education, designed to prepare teachers to work in schools in low-income areas, completed its first year of operation in the 1976-77 academic year.

The faculty also completed negotiations in 1976-77 with the government of the Yukon Territory to provide teacher-training courses in Whitehorse. The Yukon government is bearing the entire cost of the program, estimated at \$275,000 in the first year. Two programs will be offered in 1977-78: a single year of professional training for would-be teachers who already hold university degrees; and a second pro-

gram for high school graduates and mature students who will enrol in the program leading to the Bachelor of Education (Elementary) degree. The first and third years of the degree program will be conducted in Whitehorse, while the second and fourth years will be held on the UBC campus. Each program will admit 20 students in the first year. I am pleased that the Faculty of Education was able to respond positively to the initiative of the Yukon, which has experienced a high turnover in elementary school teachers in recent years.

Other developments within education in the academic year include creation of a Standing Committee on Teaching (SCOT), which is charged with improving the teaching abilities of faculty members, and the strengthening of the Centre for the Study of Curriculum and Instruction, which is reviving and extending the work of the former Department of Curricular Theory.

Budget constraint had its effect on the faculty, however. Two programs — Open-area Teacher Preparation and the Diploma in the Education of Young Children — were suspended, and four Senate-approved courses will not be offered in 1977-78 because of the reduction of resources allocated to the Faculty of Education.

FORESTRY. Enrolment in this faculty, which trains students for careers in B.C.'s most important industry, has more than doubled in the last decade. Expansion of its offerings during this period has enabled it to provide teaching and research experience for students and faculty members in a very broad range of subjects in the management of forest resources. The significant enrolment increase of recent years has resulted in very heavy teaching commitments at the senior level. This has led the faculty to give serious consideration to a major administrative reorganization that may result in the creation of departments or divisions within the faculty. As a first step, the growing need to cope with administration resulted in the appointment of Prof. Antal Kozak as associate dean and Prof. B. J. van der Kamp as assistant to the dean. Dean J. F. Gardner reports that in spite of a generally poor employment situation, virtually all graduates of the faculty have obtained employment in forestry-related work. The demand for students with post-graduate degrees remained high and exceeded the supply.

The faculty introduced no significant changes in curriculum in 1976-77, but received special funding to develop an interdisciplinary program at the graduate level in the field of remote sensing — the interpretation of information about the earth recorded by satellites and high-flying aircraft. The interpretation of remote-sensing data is valuable in many areas, including natural-resource management, pollution control and wildlife conservation. The UBC program in remote sensing is being co-ordinated by Dr. Peter Murtha, who holds appointments in the Faculty of Forestry and in the soil science department of the Faculty of Agricultural Sciences. Other UBC departments and units that will be involved in the program include geography, civil engineering and the computing centre.

GRADUATE STUDIES. Graduate work at UBC has sustained a high level of activity in recent years despite the decline in real dollar terms of support for research. Within the faculty there have been notable shifts in the pattern of student enrolment; interest in the pure or basic disciplines has declined in favor of increases in enrolment for professional programs that appear to offer better employment opportunities. Enrolment has also increased in graduate social sciences programs and there is an increasing demand for interdisciplinary programs, which require more intensive counselling and organization.

An important decision made during the academic year was to allocate an increase in graduate student fees for graduate scholarships in 1977-78. The object of the decision is to maintain UBC strength in graduate studies.

The faculty's Institute of Animal Resource Ecology received \$16,000 for the support of graduate courses in ecology policy analysis and the School of Community and Regional Planning started a guided independent study course on site planning for surveyors, funded by a \$20,000 grant from the Corporation of B.C. Land Surveyors.

UBC's new Centre for Human Settlements, created in 1976 during Habitat, the United Nations Conference on Human Settlements, began to emerge as an active institution during the academic year. The centre will make use of the more than 10,600 audio-visual items that made up the 240 presentations by the 140 countries that

took part in Habitat for continuing education programs and teaching and research studies at UBC and elsewhere.

The task of distributing the collection of materials acquired by the University will be undertaken by the United Nations Audio-Visual Information Centre (UNAVIC), which is housed in the Woodward Instructional Resources Centre. UNAVIC will serve as the distributor and duplicator of the videotapes and films of the collection as the holder of the international copyright on the material. Associated with UNAVIC in the Woodward IRC is a facility for viewing the collection. It consists of a 50-seat theatre and cubicles equipped with TV monitors and headphones. Distribution policies and guidelines for the use of the collections are being developed by an international panel of advisors.

The collection offers a unique opportunity for development of research, teaching and public education programs in a wide range of problems associated with human settlements, including housing, energy and pollution.

In 1976-77, the activities of the Centre for Human Settlements were concentrated in three areas — a scholar-in-residence program, invitational seminars and community programs. Dr. Leon Gertler, of the University of Waterloo, was the centre's first scholar-in-residence and has prepared a manuscript entitled "Habitat and Land." An example of the invitational seminar program was "Arable Land: The Appropriate Use of a Scarce Resource," which brought together a cross-section of academic and professional experts for a two-day discussion. Faculty and students are continuing to use the audio-visual library for course and research assignments. The centre's first publication, a collection of papers on the Habitat theme, was published in January, 1977, by the UBC Press. Prof. Peter Oberlander has been named the permanent director of the centre and Dr. Knute Buttedahl joined the staff as administrator on July 1, 1977.

A decline in financial support forced the University to discontinue funding for the Institute of Industrial Relations in 1976-77. A review committee suggested that the institute should not be disbanded, and when funds are available it may be given a new start. Meanwhile, research on industrial relations will continue in various departments and faculties of the University. Shortage of funds has slowed the de-

velopment of the Institute of Applied Mathematics and Statistics and the Institute of Asian Research.

Other institutes, centres and schools that are part of the graduate studies faculty maintained a high level of research activity in 1976-77, which will be described in more detail in the research section of this report.

LAW. The Faculty of Law, perhaps more than any other at the University, has been subject to continuing difficulties in the recruitment and retention of first-rate legal talent in the face of strong competitive pressures from government, the practising profession and from other law schools. In 1975-76 three of the six resignations from the faculty's teaching staff were by persons who took positions at other law schools, and of the six persons recruited to replace those who resigned, none were recruited from other law schools and only one had previous teaching experience.

In 1976-77, this situation was somewhat improved. While there were three resignations, none represented losses to other law schools. All four of the new appointees were experienced law teachers with demonstrated abilities in both academic and non-academic legal work.

The faculty-student ratio in the UBC law school remains a matter of concern. Student enrolment has reached and slightly exceeded the limit of 720, while the complement of full-time faculty stands at 39 against a hoped-for faculty strength of 50 persons. The consequences of this situation are a reduced number of course sections at the first-year level, large classes in the upper years and an excessive reliance on honorary lecturers. In fact, 31 per cent of the total course units in the faculty are handled by teachers who are in the honorary, visiting, and part-time categories. Dean Kenneth Lysyk says that unless this imbalance can be corrected, the faculty will have to give serious consideration to reducing enrolment in first-year law.

The faculty also faces a problem in obtaining funds for the continuation of its legal clinic program, which provides an opportunity for students to gain practical experience in advising the general public on legal problems under the watchful eye of members of the B.C. bar, including some faculty members. The program has received substantial support since its inception in 1975 from the Law Foundation of

B.C., which has served notice that its support will terminate at the end of the 1977-78 academic year. The faculty has submitted a funding proposal to the Universities Council and a decision is awaited.

Three new courses on land use planning, the law of valuation and consumer protection received faculty and Senate approval in 1976-77.

MEDICINE. I cannot think of another UBC faculty that has faced more uncertainty about its future in recent years than medicine. In 1973 it became apparent that the teaching, research and service hospital planned for the Health Sciences Centre on the UBC campus would not be built. This was the result of a decision by the government of that day to create the B.C. Medical Centre on the site of the former Shaughnessy Hospital on Oak Street. Although this decision was a disappointment to the University, we undertook to cooperate with the proposed BCMC development. Innumerable members of the various faculties, schools and departments that make up the health sciences area at UBC were involved in task committees charged with bringing forward plans for the new centre because it was inevitable that students and faculty would be involved in its operations.

In December, 1975, the New Democratic Party government was defeated in a provincial election and the Social Credit party was returned to power. The new government decided not to continue with development of the B.C. Medical Centre. On March 9, 1976, the provincial ministers of health and education proposed a \$50 million building program, using matched provincial and federal funds, to construct a 240-bed acute-care hospital on campus, provide additions to basic medical science buildings in the Health Sciences Centre, and upgrade clinical teaching facilities at Vancouver hospitals associated with the UBC medical school. The government also proposed that UBC double the size of its first-year medical class from the present 80 to 160 students. The University was given 60 days to respond to the government proposal.

After a wide range of consultations it was decided to respond positively to the government's proposals and expansion plans were submitted to the government within the 60-day limit. In October, 1976, the provincial government announced its intention to implement its commitment to

improving health education facilities and expand the size of the medical class. Throughout our negotiations with the government we have insisted that the increased operating funds required to expand the medical class would have to be provided in a way that would not adversely affect the funding of other academic programs at the University.

The government proposals were approved in principle by the Board of Governors in January, 1977, subject to the following conditions:

- Specific approval by the Board of the necessary funding and other resources being made available for each phase of expansion of the medical class at least one year in advance of that phase;
- Availability of the necessary physical resources and additional operating funds recommended by the president after consultation with the appropriate persons and bodies and approved by the Board;
- Provision of the necessary additional operating funds in a manner which in the judgment of the president and the Board will not adversely affect the funding and resources available to other University programs; and
- Bearing in mind that the funding of programs and activities of the Faculty of Medicine may be subject to similar constraints as other programs and activities at the University.

Approval in principle for construction of the hospital and basic science facilities on campus and expansion of clinical facilities at associated downtown hospitals was given by the Board subject to the following conditions:

- Subsequent approval by the Board of the necessary financing and related arrangements for these facilities; and
- Assurance being given to the Board by the president at the appropriate time that the appropriate University authorities have approved the academic suitability of the facilities.

The approvals given during this period set off an incredibly concentrated round of planning and consultation with Vancouver hospitals. On April 18, Dr. Patrick McGeer, the provincial minister of education, and Hon. Ron Basford, the federal minister of justice, jointly turned the first sod to mark the start of construction of the acute-care hospital in the Health Sciences Centre on campus. Planning and consultation for expansion of the campus basic medical



Hon. Ron Basford, left, federal minister of justice, and Hon. Patrick McGeer, B.C.'s minister of education, turned the first sod for a new acute-care hospital in the campus Health Sciences Centre in April, 1977.

sciences buildings and the upgrading of clinical facilities at downtown hospitals are well underway. I am particularly heartened by the very positive response that has been forthcoming from the various Vancouver hospitals where we have clinical teaching facilities. Officials from those hospitals are being most co-operative in developing plans for these upgraded facilities.

Another important development for the Faculty of Medicine in the 1976-77 academic year was the completion and opening of the Harry Purdy Extended Care Unit in the Health Sciences Centre. I will have more to say about this development and our hopes for expansion of the field of gerontology in a later section of this report on capital financing and new buildings.

Throughout this most difficult period, the affairs of the Faculty of Medicine were overseen by Dean David Bates, who resigned as dean on June 30, 1977, but who will remain at UBC as a member of the

medical school's medicine and physiology departments. While dean, Dr. Bates oversaw a major revision of the medical school's curriculum and was responsible for attracting to the school a number of outstanding teachers and researchers. New provisions for the training of residents in Vancouver hospitals were introduced and a Department of Family Practice was added to the faculty during his deanship. He has insisted on high standards of faculty and student performance and was ever an effective spokesman on behalf of the medical school's interests in the community. I am pleased that he will continue as a member of the faculty, where his talents as a chest physician and his expertise in environmental medicine will be available to students and colleagues.

PHARMACEUTICAL SCIENCES.

There were few significant curriculum changes in this faculty in 1976-77. The development of two fourth-year courses is notable: Pharmacy 455 is expanding this year to ensure that students are informed on all areas of health care legislation, as well as health care services offered through government and voluntary agencies; Pharmacy 488 now includes studies on the toxicity of chemicals in the environment, air and water pollution, disposal of toxic materials and studies of chemically induced carcinoma. Two new courses have been introduced at the graduate level as requirements for graduate degrees. One of these requires students to prepare and present lectures for critical evaluation by fellow students. The second course offers students an opportunity to improve their teaching abilities.

There have been some notable developments within the faculty in the areas of research and public service, which will be dealt with in other sections of this report.

SCIENCE. The Faculty of Science was another of UBC's 12 faculties hard hit by the cutbacks that have had a widespread effect on UBC's academic operations. A total of \$331,312 was removed from the science budget over the past two years, with the result that new programs and major curriculum changes are virtually at a standstill.

Changes implemented in 1976-77 include the introduction of courses in computer science at the first-year level, three new courses in statistics in the Department of Mathematics, and a revised second-year program leading to the bachelor's degree

in honors physics. Revised third- and fourth-year programs for the degree will be introduced in 1977-78 and 1978-79 respectively.

Budgetary constraints prevented introduction of special five-hour-per-week sections of Mathematics 100 for students whose numerical skills are deficient. The faculty will probably have to delay implementation of this program indefinitely, despite evidence of inadequate preparation of entering students.

There was some improvement in physical facilities for certain science departments as the result of completion of the new north wing of the Biological Sciences Building. This will be described in the section dealing with capital financing and new buildings.

Research

In my report to you last year I said the University faces something very close to a crisis in research funding. Nothing that has happened in the interim has caused me to change that view; indeed, inflation has continued to weaken our research capacity even though the total number of dollars received by the University has increased.

In the fiscal year that ended March 31, 1977, UBC received \$17,074,743 from all sources for research. This was a record total and a 6.4 per cent increase over the previous year.

Inflation, however, has continued to take a serious toll on the available funds. Dr. Richard Spratley, our research administrator, reports that merely to bring UBC's 1976-77 research funds up to the level of grants made in 1970-71 would have required an additional \$3,022,966.

Changes in policy at the federal level have resulted in the emergence of a new pattern of support for research. Allocations from granting councils are up slightly, while those from federal departments are down, apparently reflecting a conviction that university research support should be centralized in the councils. There also appears to be an overall trend toward applied research at the expense of basic research. In his report to the Board of Governors, Dr. Spratley comments that this trend will be "accelerated by a recent National Research Council decision to reserve a significant part of its budget in-

crease for the support of projects in areas of defined national priority."

Few will quarrel with a decision to invest more in research on projects of national importance, but to do this at the expense of basic research, which is absolutely essential as the underpinning for applied research, is a little like purchasing a car and neglecting to set aside adequate funds to pay for the gasoline to run it.

The federal government continues to be the largest contributor to the research pool. Funds from this source totalled \$11,637,589 in 1976-77, making up 68.1 per cent of total research funds. Support of research by the provincial government continues at very low levels and a discouraging development was the dissolution of the B.C. Health Sciences Research Fund, which supported health research in the province. However, the announcement by the provincial government of the creation of a research secretariat opens the way for a more rational approach to research support from this source.

Support from Canadian foundations has increased and has alleviated at least part of the serious problem of funding medical research. Increased grants from Canadian and United States companies is encouraging and it is hoped that this trend will continue as our researchers increase their interaction with industry.

The group perhaps most affected by the research funding crisis are new faculty members who have been attracted to University life partly by the prospect of being able to carry out research. The policies of the major granting agencies seem to be to increase average grants to established researchers and to provide virtually no funds for new projects by younger faculty members.

Despite these problems, UBC continues to be a major centre of Canadian research; indeed, it is one of the three top universities in Canada in terms of grants made by federal agencies. Some faculties showed very significant increases in the monetary values of grants in 1976-77 over 1975-76. Grants in the Faculty of Commerce and Business Administration were up by 148.6 per cent from \$117,647 to \$292,418; in education by 49.1 per cent from \$195,856 to \$292,089; in pharmaceutical sciences by 29.3 per cent; in arts by 22.4 per cent; and in agricultural sciences by 16 per cent.

Despite a slight drop in allocations to the Faculty of Science, two of that faculty's



departments — chemistry and physics — each received more than \$1 million for research. This faculty remains the largest spender of research funds at \$5,208,523, followed by medicine at \$4,785,932; applied science at \$2,064,919; arts at \$1,214,674; and graduate studies at \$1,204,253.

In the remainder of this section on research, let me briefly describe some of the new projects undertaken in the various faculties of the University, particularly those that have potential for benefit to the public.

In agricultural sciences, work is being carried out on methods for the control of salmonella, the commonest type of food poisoning; on methods for detecting the microbial decay of meat; on control of insect pests; and the treatment of sewage sludge. One of our poultry scientists is

UBC's Department of Chemistry was one of two University departments that received more than \$1 million for research in 1976-77.

studying methods to decrease the cholesterol content in eggs.

In applied science, a program in biomedical engineering, involving co-operation between applied science and medicine, is developing as funds are available. Work continues on development of an artificial kidney machine, on heart valves and the production of artificial limbs. Three members of the mechanical engineering department have received a major grant to work on problems associated with the safety of operation of nuclear reactors. There has been a significant increase in research funds for work associated with coal utilization.

In the Faculty of Arts, a 10-member group of natural-resource economists began work in earnest on a five-year project funded by the Canada Council. The aim of the project is to throw new light on one of the least-understood areas of modern economics — the management of the world's natural resources. One of our geographers is in the final stages of completing a new atlas of British Columbia to be published by the University of B.C. Press; other geographers are working on problems associated with industrial development in the Mackenzie Valley and the impact of pipeline construction in the Northwest Territories. In the School of Home Economics new emphasis is being placed on human nutrition, including studies of vitamin E, mineral metabolism and folic acid. One of our leading music scholars is continuing work on a cataloguing of all the works of the composer Johannes Brahms with the support of the Canada Council; in psychology, grants have been approved for the evaluation of treatment programs in relation to drug and alcohol abuse, for a physiological study of criminals, and for the effects of chemicals on the human brain.

In dentistry, a team of three researchers has received \$164,264 to carry out studies of tongue movements and jaw positions which have direct clinical significance in the understanding and treatment of malocclusions, and Dr. Virginia Diewert has aroused considerable interest for her research in palatal formation, which is supported by grants totalling \$50,560.

In education, eight faculty members and six graduate students have received grants to work on theoretical and applied studies in values education, which includes the production and validation of curricular

materials for schools. Other projects of widespread public interest include a survey of the incidence and needs of children with hearing difficulties; assessments of achievement levels by elementary and high school children in the fields of mathematics and social studies; methods for the early detection of learning difficulties; and studies of physical education for mentally retarded children.

Research in forestry is of particular interest because of the economic value of that resource to our province. Our researchers are developing new methods of forest regeneration by mechanical and other means; forest scientists are studying the recycling of nutrients in both high and low-level forest ecosystems, and there is continued emphasis on the whole field of forest management for industrial and recreational purposes.

The theme of research in the Faculty of Graduate Studies has this year been its relevance to contemporary Canadian problems. In animal resource ecology, scientists are studying various insect pests, including the spruce budworm, which is threatening to destroy vast areas of Canadian forests, and several institute members are involved in research associated with the federal government's \$300 million salmon enhancement program. Our Institute of Oceanography attracted more than \$800,000 during the academic year for a wide variety of studies, including marine pollution, and was given more than \$400,000 in ship time on west coast research vessels. The Institute of International Relations continued its research program related to Canada's new 200-mile fishing zone, and Dr. Mark Zacher, the institute's director, was awarded a \$17,000 grant for research on international whaling. The production of a book entitled *Canadian Foreign Policy and the Law of the Sea* was particularly noteworthy. The Centre for Transportation Studies had an active year. It received nearly a quarter of a million dollars from the provincial government for three major research projects for the B.C. ferry system, transportation needs of northern coastal communities, and economic and managerial problems of the B.C. Railway.

The Westwater Research Centre published books on international rivers and pollution control in B.C., continued work on a coastal resource management project, and received \$40,000 from the Rockefeller

Foundation for a study of Canada-U.S. water-management problems.

Some faculties receive very little money for research, but this does not indicate a low level of research activity. The Faculty of Law, for instance, received only \$12,884 in grants for research in 1976-77, and of that sum more than \$5,300 was a single grant from the federal government for research on the topic of the non-medical use of drugs. The research level within the faculty is indicated by its list of publications by 15 members of the teaching staff. These cover such subjects as maritime, criminal, family, labor, environmental and civil law as well as the following topics: the law of expropriation, the legal control of hazardous products in Canada, the calculation of damage for fatal injuries, class actions, Indian rights, income tax planning, debtors' rights and the instruction of juries. In addition, seven faculty members and six graduate students took part in seminars on such widely varied topics as law reform, labor relations and the problems of water law and river boundaries.

Perhaps the most significant research advance in the Faculty of Medicine in 1976-77 is the arrival at UBC of Dr. John Dirks, the new head of the Department of Medicine in the faculty, and his colleagues from McGill University. His research team and the funds they bring with them has made UBC a leading centre in North America for work on kidney function with grants of just over \$300,000. Dr. Michael Smith and Dr. Gordon Tener, both members of the Department of Biochemistry, each received more than \$71,000 for their important work on the structure and function of nucleic acids. The largest single grant for research in medicine was made to Dr. Henry Dunn, of the Department of Paediatrics, who received \$95,780 for a continuation of his 15-year study of children of low birth weight, which promises to produce some very significant information about the development of premature babies.

Research grants to the Faculty of Pharmaceutical Sciences increased by nearly 30 per cent in 1976-77, and included an award totalling \$151,877 to enable a team of specialists in the field of nuclear medicine to undertake a pilot project for the production of a special isotope of iodine, used in the diagnosis of disease. The project will be carried out in associa-



tion with TRIUMF, the new cyclotron located at UBC. The team, headed by Dr. Don Lyster, of pharmaceutical sciences, will produce the isotope at TRIUMF and airlift it to hospitals in four Canadian cities. The object of the project is to determine whether a system for the production and distribution of radioactive iodine is feasible. If it is found feasible, it is expected that one of the major pharmaceutical firms will undertake production on a larger scale. The Medical Research Council of Canada and the B.C. Heart Foundation are the chief granting agencies for research funds in this faculty, supporting a variety of work in pharmacokinetics, the mechanism of drug action, drug transportation in the body and alcohol tolerance. Research carried out over a period of many years has resulted in establishment of a Drug and Poison Information Centre operated by the Faculty of Pharmaceutical Sciences at St. Paul's Hospital. This operation enables physicians anywhere in the province to obtain the most recent information available for the treatment of people who have been poisoned. Funds are forthcoming to permit an expansion of this program in an area that will be of significance in the therapeutic treatment of disease.

The Faculty of Science reports serious problems in research as a result of the matters referred to earlier in this report — lack of funds to enable younger faculty members to undertake productive work, and a shortage of adequate facilities for existing projects. This should not obscure, how-

Team of UBC scientists, left to right, John Vincent, Dr. Robert Morrison and Dr. Don Lyster, will use facilities at TRIUMF, the cyclotron located on the UBC campus, to produce a radioactive isotope of iodine that will be airlifted to Canadian hospitals for diagnostic purposes.

ever, the fact that our Faculty of Science is widely regarded as one of the best in North America, particularly in such basic areas as chemistry, physics and the life and geological sciences. The basic work that is done in these areas provides the underpinning for further developments in the applied sciences. One measure of the science faculty's excellence is its ability to attract significant grants for research and the support of graduate students. Major grants from the National Research Council to UBC researchers for 1977-78 included: \$170,000 to a group of five plasma physicists; \$62,872 to Prof. Charles McDowell, head of the Department of Chemistry; \$60,000 to Prof. Neil Towers, of the Department of Botany; \$57,994 to Prof. Myer Bloom, of the Department of Physics; and \$46,612 to Dr. Peter Hochachka, of the Department of Zoology.

The TRIUMF cyclotron located on the UBC campus completed its first full year of operation as a research facility in 1976-77. The facility, operated by UBC, Simon Fraser University and the Universities of Victoria and Alberta, is a cyclotron capable of accelerating two simultaneous beams of protons for research in basic science, including medium-energy nuclear physics and chemistry, and applied research in such areas as nuclear fuel and isotope production. In 1976-77, emphasis shifted from development to the start of important research making use of TRIUMF's many unique capabilities. The reliability of the operating components continued to improve, with facility availability approaching 80 per cent.

In addition to important experiments in the field of basic science, development continued at TRIUMF in the field of applied research. Preliminary biomedical experiments were begun that will lead eventually to the use of the facility as a cancer treatment centre. I have already mentioned the work of an interdisciplinary group which is planning to begin production of isotopes for use in medical diagnosis.

A major change occurred in the source of funding for TRIUMF in 1976-77. The Atomic Energy Control Board, which provided funds for the construction and operation of the facility since the initiation of design studies in 1965, decided to discontinue its research-grants program to concentrate on its regulatory function. Financial support for TRIUMF now comes from the National Research Council.

Grants for operating, capital and experimental purposes totalled \$7,763,800 in the 1976-77 fiscal year. The facility employs about 165 staff at its main site on UBC's south campus, and approximately 120 university scientists, some of them from outside Canada, were associated with the 1976-77 scientific program.

During the academic year the UBC Botanical Garden reached the halfway mark in the 10-year development program initiated in 1971 following approval of a comprehensive plan by the Board of Governors. The 1976-77 program saw completion of five components of the main garden development adjacent to Thunderbird Stadium, continued development of the Marine Drive Garden on the southwest edge of the campus, installation of many new plantings in the northern sector of the campus, and completion of a horticultural teaching classroom in the garden's administrative centre, formerly the president's house, on Marine Drive. Many of these projects were supported by government grants.

A major contribution to botanical research was the publication early in 1977 of *Vascular Plants of British Columbia* by Dr. Roy Taylor, the director of the garden, and Bruce MacBryde. This volume represents the first comprehensive survey of the more than 2,400 vascular plants of B.C. and is designed to serve the needs of research botanists and resource managers and planners. The inventory has been adopted by both provincial and federal government agencies as a standard floristic reference work for research and technical information publications. A second major research program is designed to provide information and techniques that directly relate to erosion control of the Point Grey cliffs below the UBC campus. The program, funded by the University and the provincial government, is experimental and takes into account the difficult physical factors of the site and the selection of plants that have soil-binding properties. The results of this program so far have been more successful than originally expected with 160,000 square feet of cliff face covered and 20,000 plants incorporated. The University is grateful to the B.C. Forest Service for 15,000 trees, provided in the spring of 1976, for the planting-trial program. These and other research programs fostered by the garden make it an important centre for botanical research in

western Canada. The garden is also an important community resource and I will describe this function more fully in the following section on University activity in the area of continuing education.

Continuing education

UBC was founded on the premise that it was a university created to serve the needs of the entire province. Over the years, our hopes and expectations in providing educational services in all parts of the province have not been fully realized. This has not been the result of unwillingness on the part of UBC; indeed, I would be hard put to cite a single case where UBC has not responded in some way to an expressed need from a region outside the Vancouver area. However, we have been faced, over the years, with a shortage of funds that has prevented us from doing everything that we felt was necessary to provide educational opportunities to our citizens. Let me assure readers of this report that we are acutely conscious of our responsibilities in this area and are doing everything possible to correct the shortcomings of the past.

Perhaps the most significant development in continuing education in the 1976-77 academic year was the release of the report of the Commission on University Programs in Non-Metropolitan Areas by the provincial government. The sole commissioner was Dr. William Winegard, a former president of the University of Guelph in Ontario, who was asked by Education Minister Patrick McGeer to advise "on all matters related to the delivery of academic and professional programs outside the Vancouver and Victoria metropolitan areas, and academic programs and their articulation."

In UBC's brief to the commission, we suggested that any proposal to remedy the demand for degree proposals outside the Vancouver and Victoria areas must satisfy three basic tests: it must substantially increase the opportunities for people resident in the Interior to complete a degree program; it must be consistent with the maintenance of traditional University standards of academic excellence; and it must achieve the first two goals with reasonable economic efficiency. UBC proposed the es-

tablishment of University Centres at each of the interior regional colleges as the best means of making degree-level education available to more people. We proposed that the centres be operated by one of the three existing public universities, preferably in co-operation with the regional colleges. The first priority of each University Centre would be to meet the needs of the area it served, with emphasis on core or basic courses that would provide opportunity to acquire the usual, generally accepted academic qualifications.

I would be less than honest if I did not report to you that there was widespread disappointment at UBC about the recommendations made by Dr. Winegard in his report, which was released in September, 1976, the first month of the academic year. Essentially, he proposed that four University Centres should be established, each offering a restricted number of degree-completion programs in arts, science and education. These centres would be located in Prince George, Kamloops, Nelson and Kelowna. At each centre there would be 10 full-time-equivalent faculty, plus various outreach programs emanating from a headquarters site in Vernon. Dr. Winegard also recommended that these centres be set up under the control of Simon Fraser University and that the programs be offered largely by faculty attached to that university. The costs of this solution were estimated at about \$8.5 million over five years for capital purposes and \$7.1 million a year for operating costs.

The question of whether the report's recommendations would meet the needs of the citizens of the Interior was the subject of a report to Senate early in the academic year. The chairman of the Senate standing committee on continuing education expressed the opinion that the report seriously underestimates the estimated capital and operating costs, which are based on a plan that would not provide the breadth and quality of program Interior residents need and want. To offer minimal and superficial degree programs would be a disservice to Interior students.

In April, 1977, Dr. McGeer announced the formation of an Interior Universities Co-ordinating Council to oversee the development and delivery of degree programs to the Interior. The council will report to the Universities Council of B.C., which will in turn make recommendations to the provincial government. In the

Summary of Revenue and Expenditure

(Excluding Capital Additions to Endowment, Student Loan and Capital Development Funds)
April 1, 1976 to March 31, 1977

	<u>GENERAL FUNDS</u>		<u>TRUST FUNDS</u>		<u>TOTAL</u>		<u>1975-76</u>	
		Per Cent	For Specific Purposes	Per Cent		Per Cent		Per Cent
REVENUE								
Province of British Columbia								
Operating Grant	\$103,920,766	83.6	—	—	\$103,920,766	68.6	\$ 91,988,957	67.8
Canada — Museum of Anthropology Grant	250,000	0.2	—	—	250,000	0.1	—	—
Student Fees	12,886,024	10.4	—	—	12,886,024	8.5	12,402,530	9.1
Services	5,254,705	4.2	\$ 4,352,610	16.0	9,607,315	6.3	8,030,402	5.9
Investment Income	1,869,193	1.5	2,318,996	8.6	4,188,189	2.8	3,436,453	2.5
Sponsored or Assisted Research	—	—	16,889,988	62.2	16,889,988	11.2	16,538,114	12.2
Gifts, Grants and Bequests	—	—	3,578,060	13.2	3,578,060	2.4	3,079,873	2.3
Miscellaneous	123,344	0.1	—	—	123,344	0.1	173,764	0.2
	<u>\$124,304,032</u>	<u>100.0</u>	<u>\$27,139,654</u>	<u>100.0</u>	<u>\$151,443,686</u>	<u>100.0</u>	<u>\$135,650,093</u>	<u>100.0</u>
EXPENDITURE								
Academic	\$ 90,626,005	72.9	\$ 5,643,895	20.8	\$ 96,269,900	63.6	\$ 87,016,780	64.1
Libraries	9,219,385	7.4	117,100	0.4	9,336,485	6.2	8,329,646	6.1
Sponsored or Assisted Research	(310,086)	(0.2)	17,259,515	63.6	16,949,429	11.2	16,596,065	12.2
Student Services	2,192,696	1.8	406,667	1.5	2,599,363	1.7	2,061,495	1.5
Scholarships and Bursaries	820,251	0.7	1,978,039	7.3	2,798,290	1.8	2,512,439	1.9
Administration	5,540,964	4.4	201,995	0.7	5,742,959	3.8	5,161,199	3.8
Plant Maintenance	13,969,663	11.2	—	—	13,969,663	9.2	12,138,221	8.9
Renovations and Alterations	1,185,863	1.0	—	—	1,185,863	0.8	756,390	0.6
Ancillary Enterprises	69,250	—	—	—	69,250	—	346,552	0.3
	<u>\$123,313,991</u>	<u>99.2</u>	<u>\$25,607,211</u>	<u>94.3</u>	<u>\$148,921,202</u>	<u>98.3</u>	<u>\$134,918,787</u>	<u>99.4</u>
EXCESS OF REVENUE OVER EXPENDITURE								
— General Purposes	990,041	0.8	—	—	990,041	0.7	(284,617)	0.2
— Specific Purposes	—	—	1,532,443	5.7	1,532,443	1.0	1,015,923	0.8
	<u>\$124,304,032</u>	<u>100.0</u>	<u>\$27,139,654</u>	<u>100.0</u>	<u>\$151,443,686</u>	<u>100.0</u>	<u>\$135,650,093</u>	<u>100.0</u>



Marc Pessin, standing, of UBC's fine arts department, was the instructor for UBC's first credit television course broadcast in 1976-77 over cablevision stations in three B.C. centres.

months following release of the Wineyard report, UBC submitted to the co-ordinating council a proposal in which we signified our readiness to offer degree programs in arts, education and social work at the third- and fourth-year levels so that students who complete two years of work at a community college would be able to continue their education in the same community. In the summer of 1977, Prof. J. Lewis Robinson, of our geography department, undertook at my request a series of meetings with community college councils in Kelowna, Vernon, Castlegar, Kamloops and Prince George, where our proposals were very well received. The task of chairing a committee I have established on Interior programs has now been taken over by Prof. Ronald Shearer, of the Department of Economics, who is developing UBC's ideas for Interior programs in consultation with appropriate University authorities and presenting them to the co-ordinating council. As the 1976-77 academic year drew to a close, the co-ordinating council was still engaged in discussions with representatives of the three public universities and had not made any recommendations to the Universities Council.

Our on-going program of continuing education has many facets and there are few areas of the province that did not feel its influence in 1976-77.

Overall participation in credit and non-credit programs sponsored by the Centre for Continuing Education declined slightly in the academic year after peaking at over 40,000 persons the previous year. The peak was largely due to UBC participation in various activities associated with Habitat, the U.N. Conference on Human Settlements, which drew more than 3,600 persons to campus events. Centre registrations in the 1976-77 academic year totalled 33,377 persons and there were some notable increases in participation rates in such areas as guided independent study — up 17.35 per cent — the Interior Program based in Vernon, where registrations increased 30 per cent, and the Educational Travel program, which experienced an increase of 24 per cent. Participation in the centre's annual Language Institute doubled.

UBC's first credit television course, *From the Pyramids to Picasso*, given by Marc Pessin, of the Department of Fine Arts, was broadcast during the fall and winter over cablevision stations in Vancouver, Vernon and Campbell River. The co-operation of community cable stations and of Okanagan College and North Island College made it possible to offer the course on a broad geographic basis. The course was followed by 79 persons who registered for credit and 200 who took it on a non-credit basis. We know that a substantial number of persons also watched on a casual basis. The videotapes of the course are now available to educational institutions in B.C. and elsewhere. I have received many letters from citizens who saw the course urging the University to expand its offerings by television.

Non-credit programs in professional continuing education offered by the centre in locations throughout the province grew by 35 per cent and the Interior program based in the Okanagan attracted 1,300 participants. Interior program director John Edwards, who has his headquarters on the Vernon campus of Okanagan College, arranged for 42 UBC faculty members to visit the area during the program's first 16 months of operation and has inaugurated a lecture series called the Vernon Institute, which is modelled on the Vancouver Institute that

meets weekly at UBC during the winter session. The centre hopes to extend general programming of this nature to other Interior areas as soon as funds become available.

The centre's Language Institute received a substantial two-year grant from the Secretary of State through the provincial Ministry of Education for French courses for adults. The provincial ministry also provided funds for a pilot television project to teach English to immigrants.

The centre this year took over the organization and administration of the 4th summer program for retired people. The 31 courses offered attracted 550 participants, including 117 from outside the metropolitan Vancouver area. An additional 672 senior citizens took advantage of free general education programs organized by the centre, an increase of nearly 50 per cent over last year. A 1,000-square-foot, energy-efficient house is currently under construction in Acadia Camp as part of a course in self-help housing offered through the centre. The project was made possible by the co-operation of the Canadian Self-Help Housing Association, the UBC Housing Department and the Acadia Tenants Association. The model house will be occupied by a student family in the fall of 1977.

Programs of continuing education for practising engineers experimented very successfully with videotape instruction, and the centre this year instituted co-operative programs in engineering education with the Universities of Alberta, Calgary and Regina, sharing expert resource people and reducing the cost to participants.

The professional staff of the centre was augmented by the appointment of Gail Riddell as director of programs for retired people. William Oaksford joined the staff, first as co-ordinator and later as assistant director of the Reading and Study Skills Centre, and Ted Rashleigh served as a consultant on public affairs for a major part of the year. Eileen Hendry was appointed director of Women in Management Programs, and Ruth Sigal is the new co-ordinator of volunteers.

Earlier in this report I mentioned the research activities of the UBC Botanical Garden, which also performs a significant public-education function. The garden held a total of 89 classes for nearly

2,000 students representing amateur and professional groups. Courses included credit programs for teachers and professional florists and a special program was initiated in the use of plants in the rehabilitation of the handicapped. Some 65,000 persons came to the campus to visit the Nitobe Garden and other areas administered by the Botanical Garden. The staff of the Botanical Garden participated actively in the Vancouver Home Show and the Pacific National Exhibition. Each year, garden staff answer thousands of inquiries from citizens on the subject of plant growth and care. Development of the Marine Drive component of the Botanical Garden continued with grants from the Canada Works program, which permitted the hiring of five full-time people. This garden will eventually display one of the finest collections of rhododendrons, accumulated over the past 15 to 20 years, in North America.

The garden also initiated a 12-week apprenticeship-training program in aspects of basic botany. This program will continue in the fall of 1977 with a practical program of plant documentation and the care and culture of woody plant materials. The staff of the Botanical Garden, headed by Dr. Roy Taylor, continue to develop new relationships with the business and professional communities and are to be congratulated on their efforts.

The Faculty of Education continues to offer a wide variety of credit and non-credit programs at UBC and in centres throughout the province in keeping with its responsibility to upgrade the quality of teaching in elementary and secondary schools. During the academic year, education offered 133 graduate and undergraduate credit courses on campus and 35 undergraduate courses off campus in the late afternoon and evening. This represents approximately half of the total University offerings of this type. The faculty also sponsored a number of general conferences attended by approximately 3,700 general and specialized teachers in such areas as the education of young children, science education and mathematics education. Activities for administrators included a short course on policy-making in education organized by the faculty's Department of Educational Administration, and an international study-travel course that took 20 senior administrators from school systems

and ministries of education in five provinces to England and Wales for an intensive look at administrative activities in those areas.

The Faculty of Commerce and Business Administration attracted more than 7,000 persons to continuing education programs in such areas as real estate, and diploma and executive programs on special topics. Many of the executive program seminars were held in centres outside Vancouver, including Victoria, Kamloops, Kelowna and Castlegar. The real estate and diploma courses offered by the faculty are not short courses that offer superficial treatment of various topics. The shortest of these programs is a 14-week pre-licensing course for real estate salesmen and the longest is a diploma program for certified general accountants that can last up to five years. Enrolments in most of these programs are in excess of 250 students.

Another active program area is the Division of Continuing Education in the Health Sciences, which is part of the Office of the Co-ordinator of Health Sciences. In 1976-77, the division offered 154 courses and lectures which were attended by 8,515 health professionals, an increase of more than 2,000 over last year. In addition to providing courses on specialized topics for doctors, dentists, nutritionists, nurses, pharmacists and rehabilitation specialists, the division fosters interprofessional learning among two or more health professions. Five such courses were held in 1976-77 with a total registration of 819. In this same area, more emphasis has been placed on the development of slide-tape teaching packages for use in smaller communities in B.C. One of these programs developed at UBC on diabetes has been sold to more than 100 North American centres.

The 1976-77 academic year marked the conclusion of a six-year project co-ordinated by the Division of Continuing Education in the Health Sciences with funds provided by the W. K. Kellogg Foundation. The foundation provided \$335,000 to aid in the training of specialists in continuing education in the health sciences. The goal of the project was to improve the quality of health care by training experts to direct and staff continuing education programs within institutions and organizations in the community and to encourage interprofessional and interdisciplinary efforts in the health sciences. During the term of the

project, 58 health professionals representing 13 professions enrolled for graduate study programs in adult education in the Faculty of Education. The students also took courses in other UBC departments, enrolled for directed study courses that allowed them to explore areas of particular interest to them, and were involved in field experiences in one of three major areas — program design and management, administration, and applied research. During the life of the project, the 58 health professionals enrolled in various programs — 32 as full-time students and 26 on a part-time basis. A total of 21 W. K. Kellogg Foundation fellowships valued at more than \$109,000 were provided for full-time students.

The effects of the program have been widespread. A World Health Organization report on continuing education makes specific reference to the Kellogg project and cites several of the reports produced during the life of the project, many of which are in continuing demand. Most important of all, perhaps, is the fact that many students and graduates of the program hold responsible and influential positions in the field of health care education in community organizations and hospitals, and an innovative project for training interprofessional teams to work with health-care trustees is being introduced in another Canadian province. It is my hope that funds will be available to continue some aspects of the program developed during the term of the Kellogg grant.

An aspect of the University's continuing education function that is often ignored is the incredible range and variety of cultural activities and lectures and other events that are available to the public, most of them free of charge. It is extremely difficult to obtain accurate figures on the number of people that attend these events, but we estimate that in the past year some 26,000 people attended 11 plays staged on the campus, that 9,000 persons came to the campus for seven art exhibits, that 22,500 visitors attended 150 musical recitals, and that more than 20,000 people listened to 1,000 public lectures given by our own faculty and distinguished visitors. In addition, the general public has continuing use of campus athletic facilities for team sports and other forms of recreation. Many of the activities mentioned above are arranged and administered through the voluntary and unpaid assistance of students, faculty

members and employed staff. The University and the public owe them a debt of gratitude for their efforts in making the resources of UBC available to the public.

It should be obvious from what I have written in this section of my report that UBC is making every effort within its power to fulfill the mandate that was given to it when it was founded, namely, to make its presence felt throughout the province. I can accept the criticism that our efforts in continuing education are thin in some areas of the province. If we are given the resources, those deficiencies will be corrected. What I cannot accept is the charge that we are not conscious of our deficiencies and are unwilling to meet our obligations. On the contrary, I believe that we have accomplished a great deal with very limited resources.

Capital financing and new buildings

In my report to you last year, I described the changes that had taken place in the method of financing capital projects at universities. The new B.C. Educational Institutions Financing Authority Act, passed at the spring, 1976, session of the provincial legislature, provides for the funding of projects through a new government borrowing authority, with the government guaranteeing the repayment and amortization costs. The government advises the universities annually of the amount of money to be requested in their operating budgets to retire the borrowed funds.

So far, UBC has received authority to borrow a total of \$3,680,500 for two campus buildings — a new processing centre for the library to be built at a cost of \$2,680,500, and \$1,000,000 to enable construction to continue on the new Aquatic Centre. In February, 1977, the University submitted to the Universities Council a five-year building program totalling approximately \$145 million. So far, we have received no word about the fate of these proposals.

The lack of funds for capital development and planning has a serious effect on the University's academic program. It is



impossible to proceed with the expansion of existing programs or to initiate new ones if the necessary physical facilities are lacking. I fully concede that the request for \$145 million represents a very substantial sum. However, I can only reiterate a theme that has appeared in innumerable president's reports; we have a large backlog of unmet building needs, so great, in fact, that many important aspects of UBC's academic endeavors are still housed in about 100 old army huts that were brought to the campus after the Second World War. I am hopeful that we will receive permission to borrow the funds required to proceed with our capital proposals.

During the academic year four major buildings were completed and opened: The George F. Curtis Building for the Faculty of Law; the new north wing to the Biological Sciences Building; the new Civil and Mechanical Engineering Building; and the Dr. Harry Purdy Extended Care Unit in the campus Health Sciences Centre.

THE GEORGE F. CURTIS BUILDING. The new building for the Faculty of Law was officially opened on September 17, 1976, by Right Hon. Bora Laskin, P.C., chief justice of the Supreme Court of Canada. Appropriately, the building is named for the founding dean of the faculty, which enrolled its first students in 1945, who oversaw its development and growth until his retirement in 1971.

Each year, UBC facilities are used for a wide range of cultural activities and lectures, including the Saturday-night series sponsored by the Vancouver Institute, above, which has met on the campus for more than 60 years.

George Curtis began his deanship even before the first building to house his students and faculty arrived on campus. Initially, the faculty was housed in old army huts, as were other new academic units in those days, and it was not until 1951 that a building was finished to house the rapidly growing faculty. By the mid-1960s the need for additional space had become almost desperate. The new building is basically an extension of the existing Faculty of Law Building and is designed to accommodate a 160,000-volume library, 700 students and 50 faculty members. The existing building was converted to house a moot courtroom and seminar rooms and classrooms. The addition includes a self-contained three-storey library, a combination classroom-administration area, and additional classrooms. The existing building and its addition are linked by a lounge area designed to promote interaction between students and faculty members.

The new law building cost \$3.8 million, \$500,000 of which was raised by a committee chaired by two of the faculty's most distinguished graduates, Mr. Robert W. Bonner, Q.C., and Mr. Justice A. B. B. Carrothers. The success of the fund drive was as much a tribute to George Curtis as it was symbolic of the close ties that exist between the University and the profession.

BIOLOGICAL SCIENCES BUILDING. The new north wing to the Biological Sciences Building was completed and occupied in the latter months of the 1976-77 academic year. The new wing provides the Departments of Botany and Zoology with a vastly improved setting in which to offer laboratory instruction in popular first-year courses. The Department of Botany has been able to consolidate several of its research activities in the new wing and better-equipped and more efficient space is now available to house electron microscope facilities which are intensively used by botanists and zoologists. The new wing also houses the office of the faculty's dean, Dr. George Volkoff, and his associates. Formerly, the office of the science dean was located in a somewhat inaccessible converted army hut located some distance from the basic sciences buildings.

CIVIL AND MECHANICAL ENGINEERING BUILDING. The completion of a new building to house the Departments of Civil and Mechanical Engineering was a significant event in a process that began 15 years earlier when the University

announced that it would construct a complex for the various departments of the Faculty of Applied Science on a site centred on the intersection of the Main Mall and Stores Road. Since 1960, buildings to house the Departments of Chemical Engineering, Electrical Engineering, and Metallurgy, and laboratories for the civil and mechanical engineering departments have been built on this site. The new \$6.7 million building to house the two departments is linked to the laboratory facilities, built in 1972, by a skywalk.

Hon. Patrick McGeer, the provincial minister of education, officially opened the new building on May 12, 1977. It contains seven classrooms of varying size, 26 laboratories for the two departments, and offices for 45 faculty members. The departments share common library-reading room and computer facilities.

In the Department of Civil Engineering, new and well-equipped laboratories will enable researchers to carry out earthquake investigations not previously possible, activities in the field of ocean engineering will expand, and excellent facilities are provided for the program in timber engineering. This department has also greatly expanded its work in environmental engineering in recent years and the new laboratories will permit it to explore new approaches to problems in this area. The Mechanical Engineering section of the building has a well-equipped undergraduate laboratory for instruction in the basic principles of energy and power, a machine shop acquaints students with the physical processes of manufacture and permits construction of research apparatus, and new laboratories are provided for teaching machine design, mechanics of materials and mechanical vibration analysis. Faculty members in this department are now better equipped to continue research in such areas as solar and wind energy, aerodynamics, biomedical engineering, and studies on friction and wear.

The University paid tribute at the opening ceremony to Mr. E. C. Hurd, chairman of Transmountain Pipeline Co., and Mr. Trevor Pilley, president of the Bank of B.C., who served as co-chairmen of a fund-raising committee that raised \$700,000 to aid construction of the Civil and Mechanical Engineering Building and additions to the Henry Angus Building for the Faculty of Commerce and Business Administration, which were opened last year. The



response to the University's appeal again indicates the close ties that exist between the University and the business and professional engineering community.

HARRY PURDY EXTENDED CARE UNIT. On July 12, 1977, Hon. Robert McClelland, B.C.'s minister of health, officially opened the new Dr. Harry Purdy Extended Care Unit in the campus Health Sciences Centre. The following day the first patients were admitted to the 300-bed unit, which differs from other community-care hospitals of this type in that it includes facilities for teaching and research. The unit cost just over \$11.1 million and was built by the Greater Vancouver Regional Hospital District with funds provided by the provincial government.

The new unit is a part of our developing Health Sciences Centre, which is made up of the faculties and schools that prepare health science professionals for careers in the health field. The centre also includes the campus hospital units and health centres that serve as teaching laboratories and provide health services to the public. The Faculties of Medicine, Dentistry and Pharmaceutical Sciences and the Schools of Nursing and Rehabilitation Medicine make up the core of the Health Sciences Centre and are concentrated on the north-eastern edge of the campus surrounding the health sciences administration building, the P.A. Woodward Instructional Resources Centre. This building serves the core faculties and schools as an administrative base and also provides lecture and seminar rooms for most of the teaching in the health science disciplines. Increasingly,

students from other UBC schools and departments — home economics, social work and psychology are examples — are being drawn into the centre's educational program.

The campus hospital facilities are made up of the 60-bed Psychiatric Unit, which has been in operation for a number of years, and the extended care unit. When the acute care unit now under construction is completed, all the major buildings envisaged in the original plan for the Health Sciences Centre will be in place. We anticipate that funds will also be provided to construct teaching facilities for the Schools of Nursing and Rehabilitation Medicine.

The co-ordinator, Health Sciences, serves as a mechanism to bring these various separate academic units and service-hospital units together to co-ordinate activities as they relate to each other and as their common interests in the education of health professionals require. The Health Sciences Co-ordinating Committee chaired by the co-ordinating Committee deans and directors of all the health sciences schools, the hospital administrator and the executive directors of five Vancouver hospitals affiliated with the UBC medical school. This arrangement ensures a forum for discussion of the teaching responsibilities expected of these hospitals for the students of the health sciences faculties and schools. I mention these arrangements because they serve to indicate the complexities faced by the University in ensuring that the best possible educational opportunities are available to students in the health sciences.

The Dr. Harry Purdy Extended Care

The new 300-bed Dr. Harry Purdy Extended Care Unit in the campus Health Sciences Centre admitted its first patients in July, 1977. The building also includes extensive teaching and research facilities.

Unit is unique because it is the only hospital in Canada in a medical teaching complex that combines care, teaching, and research for the long-term treatment of disease, which is emerging as one of the major problems in health care. The University was able to reduce substantially the costs of constructing the unit by utilizing the same basic plans for the Banfield extended care unit opened in the early 1970s at the Vancouver General Hospital. The only significant revision was the addition of a teaching and research wing on the north side of the UBC hospital.

The patients we admit to the hospital will have long-term problems involving chronic conditions and diseases. The majority, but by no means all, will be elderly. Some beds will also be available for middle-aged and young people suffering from chronic diseases such as multiple sclerosis, Parkinson's disease and cerebral palsy. Patient care in the new unit will be provided by a team of medical experts in keeping with the interdisciplinary approach to health care that is being fostered in the health sciences centre. The treatment team will include physicians, nurses, rehabilitation specialists, pharmacists, dieticians and social workers, each of whom will take part in the development of a treatment program for each of the patients. Initially, the University agreed to open the hospital as a service unit, but it was assumed from the beginning that we would receive funds to develop a research and teaching program as well. These latter aspects of the hospital's function is what makes it unique. It promises to become a major training facility for health professionals in all the disciplines encompassed in the Health Sciences Centre and a centre for research and the dissemination of knowledge in the care and management of chronic disease conditions.

The discipline of gerontology, which deals with the phenomenon and the problems of aging, promises to become one of the most rapidly growing areas of study in Canada. This reflects the fact that in the next 50 years there will be a dramatic increase in the absolute and proportionate number of elderly people in the Canadian population. This is the result of a number of factors, the two chief ones being that people are living longer as the result of advances in medical care, and the fact that the so-called "baby-boom" in the 20 years after the Second World War was followed

by a dramatic decline in birth rates. As one federal government study puts it: "As surely as the rivers flow to the sea, the population in Canada aged 65 and over will grow from 1.7 million in 1971 to 3.3 million in 2001." And it is estimated that by the year 2031, 20 per cent of Canada's population will be aged 65 or over.

The opening of the Dr. Harry Purdy Extended Care Unit at UBC is only one response by UBC to the anticipated problems of an aging population. Scattered throughout the University are a substantial number of teachers and researchers who have made a start on programs in the field of gerontology. UBC staged its first conference on the needs and problems of the aging in 1957 as a joint effort of our then Extension Department (now the Centre for Continuing Education) and the United Appeal. Marjorie Smith, a long-time member of the centre's staff, has fostered professional educational programs for professionals and others who work with the elderly. Over a period of years, faculty members in social work, psychology, home economics, commerce and business administration, and in various health sciences departments have engendered interest in gerontological studies among their colleagues and in the student body.

In this academic year, I asked Prof. Roy Rogers, head of the School of Home Economics, to chair a reconstituted committee made up of people who have an interest in gerontology with a view to advising me on avenues that the University might take to participate in teaching and research in this rapidly growing discipline. The Mr. and Mrs. P. A. Woodward's Foundation has provided a grant of \$12,000 to enable the committee to appoint Dr. Gloria Gutman, of the psychology department, as a part-time research associate. She will undertake a survey of gerontological studies going on at UBC and in other B.C. educational institutions and investigate models followed at other universities that might be used here for furthering such studies. I am hopeful that we will be able to provide strong leadership in developing a teaching and research capability in this field.

The move by the Departments of Civil and Mechanical Engineering to new quarters meant that space became available in the Civil Engineering Building on the north campus to permit expansion and upgrading of facilities for the Computing Centre, which houses one of the most ad-

vanced computers in Canada. The Board of Governors also approved a change of name for the building to the Computer Sciences Building. Renovations were completed during the academic year to provide improved facilities for the Computing Centre, which has centralized its staff on the fourth floor of the building. The Department of Computer Science in the Faculty of Science occupies the second and third floors, while the basement floor has been improved to provide more space for users of the computer.

Early in December, 1976, the minister of state for fitness and amateur sport in the federal government, Hon. Iona Campagnola, announced a gift of \$435,000 to the University to aid construction of the new Aquatic Centre. The money came from a fund to enable universities to bring athletic facilities up to international standards of competition. The gift will be applied to Stage 2 of the project, which is expected to be complete in 1978. Stage 1 of the centre was accepted by the Board as being substantially complete in July, 1977.

Two other notable gifts to the University in the academic year came from the Devonian Foundation of Calgary, which provided \$115,000 for completion of the theatre gallery in the Museum of Anthropology, and \$1,500 to finance a feasibility study for the relocation of buildings and totem poles in Totem Park to a new site adjacent to the museum.

It seems appropriate here to describe the steps taken by the University to prepare and submit a position paper on the University Endowment Lands to the task force appointed by the provincial government to make recommendations on the future of this area, which lies between the campus proper and the City of Vancouver. The position paper prepared by the University and submitted to the task force early in December, 1976, was based on a report prepared by a committee chaired by Prof. Peter Larkin, dean of the Faculty of Graduate Studies. The committee represented all segments of the University community, including faculty, students, staff and alumni.

The University recommended that most of the undeveloped portion of the lands be preserved as a natural park area, a suggestion that was in harmony with the views expressed by the public at a series of forums sponsored by the task force during the academic year. We also asked the provin-

cial government to make a clear declaration that the lands are not to be developed as an endowment for the University, but rather are to be managed for the benefit of the citizens of B.C.

A number of studies carried out previously by faculty members and graduate students at UBC clearly indicated that the Endowment Lands were a valuable teaching and research resource for various University departments and faculties. Accordingly, we recommended to the task force that a significant portion of the lands be retained as a teaching and research facility with provision for agricultural, forestry and ecological demonstration areas.

We also recommended that University land-holdings be increased by 300 acres at an appropriate future date in a manner that would not injure the concept of a natural park, and that the University be strongly represented on a future board of management for the lands.

The report of the task force was not completed during the 1976-77 academic year and its recommendations therefore fall outside the time frame of this report.

The University library

Inflation and the sudden decline in value of the Canadian dollar on the international money market combined to worsen an already difficult situation faced by the University Library in the task of maintaining and enhancing book and journal collections for the use of students, faculty, and the general public. And this despite the fact that the Library has received substantial increases in recent years for its acquisitions program.

The Library spent \$1,954,121 on collections development and \$154,043 on binding, for a total of \$2,108,164 in the 1976-77 fiscal year. Comparable totals for the two previous fiscal years were \$1,629,797 in 1974-75 and \$1,885,287 in 1975-76. Yet the number of volumes added to the collection dropped from 96,258 in 1974-75 to 92,843 in 1976-77, despite the substantial increase in spending. Journals continued to demand a large share of the collections budget, although more than 1,000 subscriptions were cancelled in 1976. The price of these essential publications increased by 9 per cent in 1976-77. The cost

Space problems, inflation and the decline in value of the Canadian dollar have combined to create problems for the University Library in maintaining and enhancing its collection of books and journals.



of books purchased for the Library system in 1976-77 increased by more than 21 per cent over the previous year.

It seems unlikely that these trends will be reversed or even moderated. It seems likely that by the end of the 1977-78 fiscal year the combined effect of inflation and an adverse exchange rate will have reduced the purchasing power of the Library's collections budget by 25 per cent in a single year. The University Librarian, Mr. Basil Stuart-Stubbs, and a number of deans, in their reports to me on the 1976-77 academic year, have pointed out that this decline in purchasing power can only have serious long-term effects on the University's academic program and the Library's ability to meet the needs of all its users.

Another major concern is that some Library facilities are running out of space. Indicative of the problem in the Main Library is the fact that the number of books that had to be placed in storage, and are therefore not immediately available to users, doubled from 75,000 to 150,000 in 1976-77. It appears inevitable that even greater numbers of books will have to be removed from open shelves and placed in storage in the future. Projects that would help to relieve overcrowding in the Main

Library did not advance during the academic year because of a capital-fund shortage. The Asian Centre, designed to house our Asian Studies collection, one of the finest in the world, remains incomplete, and expansion of the Neville Scarfe Building for the Faculty of Education, intended to include the Curriculum Library and 30,000 volumes from the Main Library, has not proceeded beyond the preliminary planning stage.

No substantial library space projects are in view with the exception of the new Library Processing Centre, which will house the division that orders, receives, catalogues and shelves everything that is available for use in the Library system. This will provide some additional space in the Main Library, but not all of it will be available for book shelving, since other Library divisions, currently housed in sub-standard accommodation, will take over some of the area vacated by the processing division.

Other notable developments in the Library system during the academic year included: the start of a major project to place on microfiche the book and journal location file to control the growth and cost of maintaining card catalogues; changes in loan regulations designed to maintain services to UBC Library users both on and off the campus; extension of book security services; and participation in several projects funded by the provincial Ministry of Education intended to extend the book collections of the three public universities to the colleges of the province.

I cannot emphasize too strongly in this section of my report dealing with the UBC Library system that it is a provincial and national resource that is called on daily to meet the needs of our students and faculty as well as specialized groups and the general public in all parts of Canada. If our increasingly difficult financial situation continues, this national resource will be further eroded and its value to users will inevitably decline further. As I remarked last year in my annual report, the Library represents in microcosm most of the dilemmas faced by the University as a whole in coping with inflation and shortfalls in operating funds. Despite these problems, Mr. Stuart-Stubbs and his staff of professional librarians and the employed staff of the Library are to be congratulated on the quality of service they are able to maintain in the face of grave difficulties.

The student body

A total of 31,364 enrolled for credit programs offered by the University during the 1976-77 academic year — the 12-month period from September 1, 1976, to August 31, 1977. This total was made up of 23,120 students registered for the regular daytime winter session; 1,215 in extra-session courses offered during the winter session; 2,110 registered in the spring session which runs from May to July; 3,987 registered in the 1977 summer session; and 932 who were registered for correspondence courses administered by the Centre for Continuing Education.

I should add here that for some reporting purposes — to the Universities Council, for example — the University's official enrolment figures are based on the fiscal year, the 12-month period from April 1, 1976, to March 31, 1977. Looked at on this basis, the University's 1976-77 enrolment was 31,557 students, made up of 23,120 enrolled in the regular daytime winter session; 1,215 extra-session winter session students; 2,145 spring session students; 4,145 registered for the 1976 summer session; and 932 who studied by correspondence. The total represents a 2.6 per cent increase in student registration over the 1975-76 fiscal year.

One of the highlights of the University's daytime winter session enrolment is the percentage of women in the first-year class. For the first time in UBC's history, women outnumbered men 51.8 per cent to 48.2 per cent in a total first-year class of 3,560 students who entered the Faculties of Agricultural Sciences, Arts, Education and Science. Men are still in a majority in terms of our overall enrolment, 56.4 per cent to 43.6 per cent.

Looked at over the past five years, enrolment totals by sex show a steady increase in the number of women students. In 1971-72, women made up 46.3 per cent of the entering class and 38.2 per cent of the total enrolment. Over the same five-year period, the number of undergraduate women rose by 5 per cent from 40.5 to 44.5 and the number of women in graduate studies increased by nearly 10 percentage points from 24.3 to 33.1. Women are much more evident today in our professional schools.

In 1971-72, women represented 7.6 per cent of the enrolment in the Faculty of Commerce and Business Administration; today they are 18.2 per cent of the total. Over five years, female enrolment in Law has more than tripled from 8.4 to 25.9 per cent of the total. In Forestry, the comparable percentages are 1.4 and 13.2, and in Science 19.6 and 27.8. In the Faculty of Arts — historically the largest of UBC's 12 faculties — the percentage of women has increased from 49.7 to 57.8 in the same five-year period.

Our undergraduate enrolment was down very slightly in 1976-77 from 19,933 to 19,879. This was more than offset by an increase at the graduate level, where enrolments were up from 2,759 in 1975-76 to 2,918 this year. In general, undergraduate enrolments held their own. The only faculties that showed significant increases were Commerce and Business Administration, which was up 9 per cent, and Applied Science, where engineering programs recorded a 7 per cent increase as the result of an expanding first-year class.

It should be emphasized here that over the past five years, while there have been significant shifts in the internal enrolment pattern of the University to career or job-oriented degree programs, these shifts have not been at the expense of the basic arts and science programs, which have generally held their own in this same period in terms of enrolment.

UBC has entered a period of virtually stable enrolment, a situation that raises some very special problems for the University.

The period of rapid growth experienced by the University in the 1950s and the 1960s inevitably resulted in wide variations in quality and stages of development in our many academic programs. Some departments have achieved a worldwide reputation for excellence, some are in the early stages of development, a few are barely adequate. Our goal must be to strengthen those departments and other academic units that require it, but not at the expense of the excellent ones.

I mentioned earlier that one of our major problems lay in the fact that some 85 per cent of our available operating grants are tied up in salaries for our faculty and staff. The inevitable result of this situation is that we lack flexibility in reallocating our resources to meet the conditions imposed by a situation where our enrolment is vir-

tually stable. Without this flexibility, it becomes increasingly difficult to strengthen and increase the breadth of the University's academic offerings and to respond to changing conditions in society or in the world of learning.

A related problem is the one referred to as the "aging professoriate." The problem has been well documented; in brief, of the approximately 30,500 full-time professors employed in Canadian universities in 1975-76, 81 per cent were between 30 and 54 years of age and 90 per cent were younger than 55. At UBC, as of March, 1977, about 80 per cent of the faculty were between 30 and 54 years of age and 85 per cent were younger than 55.

There are two important results to this situation: salary costs per faculty member increase as a higher proportion of the teaching staff moves into higher ranks; and few new teaching positions are open to able young teachers and researchers, the very people who will be needed in senior positions 20 to 30 years from now. In the long run, the phenomenon of an aging professoriate could have a detrimental effect on creativity and productivity within the University. Ultimately, the losers will be our students, who have a right to expect the best education that can be provided by the best minds available.

Solutions to the problems stated above will not be easy to find or to implement. We are examining policies that hold out at least partial solutions to these dilemmas, including assessment of the most effective use of funds released by retirement, resignation or death of senior teaching and research staff; examination of schemes for early voluntary retirement or moving faculty into part-time positions; and the possibility of maintaining a proportion of departmental and faculty salary budgets for short-term, untenured appointments. There are possible penalties for such policies, the chief one being that the best products of graduate schools are not likely to be attracted to teaching and research positions that do not hold out the prospect of permanent, tenured employment.

Our goal must be to ensure that our students are part of a community of scholars concerned with the acquisition, creation, dissemination and application of knowledge for its own sake, to stimulate the intellectual development of society and to contribute to the solution of the problems that confront mankind. Much of the Uni-

versity's reputation rests on the quality of its graduates, which is a function of its teaching quality and the imposition of rigorous standards of certification for the awarding of degrees. I am not being alarmist when I say that the threat of frozen operating grants resulting from inflation and a false sense of economy on the part of governments can have only one long-range effect — a decline in the quality of the education we provide for the young people of the province and the nation.

The monitoring of academic standards, which the University has carried out from its earliest beginnings, continued in the academic year under the watchful eye of the Senate committee on admissions. As a result of a more rigorous scrutiny of the standings of grade 12 applicants seeking admission to UBC in the summer of 1976, our 1976-77 class of first-year students performed better academically than the previous year's class. The failure and withdrawal rate of the entering class dropped and the percentage obtaining full credit in their academic work increased.

The percentage of first-year students failing or withdrawing dropped to 13.5 per cent from 17.7 per cent in 1975-76, and the percentage obtaining full credit rose to 56.7 per cent from 53.2 per cent. This scrutiny continued in the summer of 1977 for grade 12 students seeking admission for the 1977-78 winter session.

During the academic year the University continued its attempts to make campus life easier for handicapped students. A permanent committee on the concerns of handicapped students was established and held a number of public meetings during the year. An inventory of campus buildings was conducted with a view to listing the advantages and shortcomings of each for handicapped students. Our Office of Student Services has appointed one of its counsellors as an advisor to the handicapped and a special day of orientation was held for this group of students prior to the opening of the 1977-78 winter session. Funds were earmarked in the academic year to create ramps at curbs throughout the University to make it easier for students in wheelchairs or those who are blind and partially sighted to move between buildings. Every effort is being made to remove barriers to higher education for these students.

Dean Margaret Fulton, who heads the

Office of the Dean of Women, continued her efforts to encourage and assist women students to achieve their full potential at the University through counselling services of a personal, academic, financial, social or career nature. Dean Fulton and her colleagues encourage women students to take an active part in campus life in co-operation with other appropriate University bodies and groups. In the academic year, the Dean of Women's Office planned a series of career workshops for the 1977-78 winter session for women interested in entering professional schools such as engineering and forestry. In addition, the office has been active in arranging a series of cultural events and special lectures that have enriched campus life for all students.

UBC students continued to win their share of awards for achievements in various fields in 1976-77, and I take this opportunity to record those that were publicly announced or reported to me by the deans of various University faculties.

Two engineering students, Peter van der Gracht and Konrad Mauch, were awarded second prize in an international contest sponsored by an American magazine and a microcomputer manufacturer. The students, who are members of a team of applied science students who are constructing an electric car, submitted a proposal for the application of a microcomputer to monitor and control the functioning of the engine in the vehicle. The contest attracted entries from all over the world from students, professors, consultants and practising engineers. The students' prize was a microcomputer development system valued at \$4,000.

Students in UBC's Department of Classics won all the prizes in Latin and Greek sight-reading contests sponsored by the Classical Association of Canada. Some 50 top students in a dozen Canadian universities participated in the annual competitions. The following fourth-year students were the chief prizewinners: Eric Csapo, Nigel Kennell, Meg Miller and Lindsay Martin.

Gail McBride, a graduating student in the Faculty of Agricultural Sciences, won the Undergraduate Research Award of the Canadian Institute of Food Science and Technology and the U.S. Institute of Food Technologists.

In the Faculty of Applied Science, the student chapter of the Society of Automotive Engineers received the society's student



Engineering students Konrad Mauch, left, and Peter van der Gracht won a \$4,000 microcomputer development system in an international contest sponsored by an American magazine and a microcomputer manufacturer.

chapter award for their activities in 1976-77.

Four students in the Department of Creative Writing in the Faculty of Arts received awards in various competitions. David Jones, an undergraduate, was an award winner in the National College Writing Competition sponsored by the Canadian Broadcasting Corporation; Anneliese Schultz, a graduate student in the program leading to the Master of Fine Arts degree was the first-prize winner in the 1976 *Chatterley* magazine fiction contest; Joseph Fuller, another M.F.A. student, received the Fletcher Cross Memorial Award from the Pacific Northwest Writers' Conference; and yet another M.F.A. student, David Evanier, received the *Paris Review* award for the best short story of the year.

Peter D. Fairey, a graduating student in the Faculty of Commerce and Business Administration, was the winner of the 1977 Rhodes Scholarship to Oxford University.

Four Arts students who are studying filmmaking in the UBC theatre department were honored in 1976-77. Sturla Gunnarson received the Norman McLaren Grand Prize in the Canadian Student Film Festival; other winners in the same film festival were Michael McGee for the best experimental film, and Anthony Southgate, for the best screenplay; Rob Gibbs

was the winner of the overall prize and University prize in the B.C. Student Film Festival.

A graduate student working on his doctorate in the Centre for Transportation Studies, Tae Oum, was awarded first prize by the Transportation Research Forum in a contest open to all students in North American universities.

Linda Brown, a 1977 graduate of the Faculty of Pharmaceutical Sciences, received the E. L. Woods Memorial Award in a national competition based on an undergraduate research project carried out under the direction of a member of the faculty.

Too numerous to mention are the students who received awards in the form of scholarships and fellowships from national and local organizations in recognition of high standards of academic achievement. UBC students have always done extremely well in these national and provincial competitions and I know that our faculty and students join me in congratulating them.

In a later section of this report dealing with our annual Congregation for the awarding of academic and honorary degrees, I have listed the heads of the 1977 graduating classes, who are also to be congratulated on their achievements. The Governor-General's Gold Medal was awarded to Ivor Ladd, an honors student in computer science, who led the graduating classes for the Bachelor of Arts and Bachelor of Science degrees. For the first time at UBC, a woman led the graduating class in the Faculty of Forestry. Mary Suttie was awarded the Canadian Institute of Forestry Medal for the graduating student with the best all-around record in all years of the program leading to the degree of Bachelor of Science in Forestry.

Public service

In terms of public service provided by the University and its faculty and students in the academic year, I am faced with an embarrassment of riches. The deans of the faculties, in their reports to me, listed innumerable projects and other forms of involvement by faculty members and students in the activities of local, provincial, national and international organizations. And I wish to emphasize here that much of this activity on the part of faculty members is entirely voluntary and involves no

remuneration of any kind. Our faculty undertake assignments with professional and community organizations because of their accumulated expertise and their sense of duty to their profession and the community at large. Space does not permit me to list all the services provided in the 1976-77 academic year. The following selection of activities by faculty and students will serve to indicate the breadth and scope of involvement.

AGRICULTURAL SCIENCES. Four members of the faculty were involved in international projects, including service in Cuba, Barbados and Tanzania. Prof. Beryl March, of the division of poultry science, serves on the governing body of the National Research Council. Prof. W. D. Powrie, head of the division of food science, was a member of a provincial advisory committee for the control of milfoil in the Okanagan Lake system and was a member of the provincial royal commission of inquiry into the use of pesticides and herbicides. Contact with the general public is encouraged through such avenues as exhibits at agricultural fairs; students and faculty members provided free advice and assistance to the public on the subjects of plants and food on a year-round basis; and faculty members took part in 13 off-campus continuing education courses and delivered 15 lectures to non-academic, professional groups.

ARTS. I have already mentioned the substantial public service rendered through the Museum of Anthropology, the Fine Arts Gallery and the Frederic Wood Theatre. Other notable examples of professional public service include: the report of the Royal Commission on Forest Resources in B.C. prepared by Prof. Peter Pearse, of the Department of Economics; the recording of works in French and English for UBC's Crane Library for the blind by students in the French department; service on the B.C. Marine Training Council by Prof. John Chapman, of the Department of Geography; research projects for the B.C. Civil Liberties Association by students in the philosophy department; and the appointment of Dr. Christiane McNiven, of the School of Social Work, to head a task force on the status of women in social work education.

APPLIED SCIENCE. Members of the Department of Mineral Engineering continued their role as the prime contributors to an interdisciplinary team of UBC and

University of Victoria experts assembled to oversee the monitoring of the discharge of mine wastes into the sea at the north end of Vancouver Island. The faculty also received significant grants under the summer employment program sponsored by the provincial government to provide support to students who work in association with faculty members on a variety of problems, including pollution. Faculty members and graduate students continued to co-operate with experts in the Faculty of Medicine in the development of an artificial kidney machine and artificial limbs. In the School of Nursing, Miss Sue Rothwell took office as president of the Registered Nurses Association of B.C.

COMMERCE AND BUSINESS ADMINISTRATION. Public service included: the appointment of Profs. M. A. Goldberg and S. W. Hamilton as advisors to the federal-provincial task force on the supply and price of serviced residential land; the appointment of Prof. R. C. Goldstein as a member of the special committee on the right of privacy of the American Federation of Information Processing Societies; a series of public seminars on the Labor Code of B.C. conducted by Prof. Ralph Loffmark for 600 attendees; and the involvement of seven faculty members and 15 students in the Small Business Advisory Program for the fourth consecutive year. In addition, five members of the faculty were responsible for the organization of major conferences held at UBC on discrete optimization, dynamic programming, and applied operations research.

DENTISTRY. Faculty members and students make a major contribution to dental care and health education for citizens and school children in the Lower Mainland through the summer dental clinic and in off-campus centres. The services provided on and off the campus are free. A number of faculty members sit on committees at the national level of the Canadian Dental Association. Mrs. Joan Voris, of the Department of Public and Community Dental Health, was elected president of the B.C. Dental Hygienists' Association and, with Ms. Wendy Halowski, was seconded to the provincial Department of Education in the summer of 1977 to draw up instructional packages for the training of dental auxiliaries. Mrs. Marjorie Dimitri, of the dental hygiene program, serves as editor of the journal of the



Canadian Hygienists' Association and received honorable mention in the Golden Pen Award for excellence in dental literature.

EDUCATION. In addition to participating in workshops for practising teachers, members of the Faculty of Education were major contributors to or the organizers of a number of important conferences on the social responsibility of the professional educator, the education of children, and science and mathematics education. Student projects included production of a variety of visual aids on native Indian culture, a project that was participated in by 15 native Indians; and an event entitled "Physics Olympics," entered by 200 students from 21 secondary schools, in which a series of competitive activities are based on an understanding of the concepts of physics.

Public service activities in the School of Physical Education and Recreation included leave of absence for Dr. Eric Broom to serve as associate deputy minister of the leisure services branch of the provincial government; election of Prof. Robert Osborne as vice-president of the Canadian Olympic Association and his appointment as chairman of the Canadian Committee on the International Olympic Academy; the selection of Mr. Donn Spence as coach of Canada's national rugby team; the appointment of Dr. Lionel Pugh to three major posts in the track and field world,

Grants from the federal and provincial governments enabled UBC students to carry out a wide range of projects related to their work in the summer of 1977, including this archaeological excavation at Crescent Beach south of Vancouver.

including one as head coach of the Canadian universities team to the World Student Games; and the activities of Dr. E. C. Rhodes as B.C. project director for administration of a standardized test of fitness in occupational health, which tested 2,000 employees in B.C. business and industry and disseminated fitness information.

FORESTRY. The faculty's involvement in national and international activities is indicated by the following: Prof. J. H. G. Smith, who was elected vice-president of the Canadian Institute of Forestry, assisted in a study for the federal government of the impact that intensive forest management would have on the Canadian economy; Prof. Leslie Adamovich was on leave of absence in Malaysia to develop and teach a forest engineering curriculum at the University of Pertanian under a contract with the Canadian International Development Agency; and Dean J. A. F. Gardner was appointed chairman of the newly formed National Research Council associate committee on university forestry research, the purpose of which is to determine requirements and priorities for establishing high-quality forest research at Canadian universities. The faculty's 12,000-acre research forest in the Fraser Valley provided major public service through an outdoor education program. Some 3,200 school children lived at the Loon Lake camp in the forest for five-day periods, and another 2,800 made day visits to the forest.

GRADUATE STUDIES. Faculty members from the various institutes and centres that make up the graduate studies faculty were involved in a wide range of activities as members of regional, national and international committees and regulatory organizations, as the organizers of conferences, and as participants in programs that will have widespread impact in Canada. Some examples: Prof. Peter Oberlander, director of the Centre for Human Settlements, was Canada's delegate to the Commonwealth Human Ecology Council Conference in London, England; Dr. Andrew Thompson, director of the Westwater Research Centre, was on leave to serve as commissioner for the federal government in the West Coast Oil Port Inquiry; symposia on "Transportation and the Western Economy" and "Canada and the International Management of the Oceans" were organized by the Centre for Transportation Studies and the Institute of Interna-

tional Relations, respectively; Dr. Carl Walters, of the Institute of Animal Resource Ecology, worked with provincial and federal scientists on strategies for the \$300 million salmon enhancement program that aims at doubling fish populations on the west coast; Prof. Brahm Wiesman, of the School of Community and Regional Planning, prepared a report for the provincial government on facilities and programs for Lower Mainland regional colleges and provincial technical and vocational institutes; Prof. Setty Pendakur, of the same school, served as a United Nations expert on transportation planning in Libya; and Dean Peter Larkin continued his association with the Science Council of Canada and the Fisheries Research Board and became a member of the International Commission for Living Aquatic Resource Management, which held its first meeting in Manila in the Philippines.

LAW. Students in the Faculty of Law provide perhaps the most visible public service of any at the University by manning a group of legal aid clinics in the Lower Mainland, where free legal services are offered to citizens. In addition, they participate in legal education programs conducted by the Vancouver People's Law School.

Faculty members are active in a wide variety of regional and national endeavors: Prof. W. W. Black was a member of the B.C. Human Rights Commission; Prof. Charles Bourne served as chairman of the sub-committee on pollution of the International Law Association Committee on International Water Resources; Prof. P. T. Burns was chairman of the advisory board of the B.C. Police College; Prof. K. B. Farquhar was a consultant to the Uniform Law Conference of Canada and drafted the Uniform Act for Canadian Provinces on Children Born Outside of Marriages; Prof. R. T. Franson was on leave as consultant to the Law Reform Commission of Canada; Dean Kenneth Lysyk was on leave for part of the academic year to serve as chairman of the federal Alaska Highway Pipeline Commission, and Prof. M. A. Jackson was special counsel to Mr. Justice Thomas Berger during his Mackenzie Valley Pipeline Inquiry; Prof. Frank Maczko served as chairman of the Family Law Foundation; Prof. Donald MacDougall served as vice-president and was elected president of the United Way of Greater Vancouver; Prof. James MacIntyre is

director of the Social Service Research Council; Prof. Barry Slutsky served as project officer for the federal Department of Justice Survey of Public Legal Education Activities in Canada; Prof. James Taylor chaired the legal education and training sub-section of the B.C. branch of the Canadian Bar Association; Prof. J. M. P. Weiler was consultant to the B.C. Department of Labor on collective bargaining in higher education; and Prof. R. F. Gosse was granted leave of absence from July 1, 1977, to serve as deputy attorney-general of the Province of Saskatchewan.

MEDICINE. Students in the Faculty of Medicine provide thousands of hours of medical care annually in hospitals and in the community as part of their medical training. One of the most imaginative schemes for students involves being assigned to general practitioners throughout the province during the summer months to obtain supervised experience in family medicine.

Activities by faculty members included the following: provision of eye services to native Indians and Eskimos in the Keewatin district of Canada's north by specialists in the Department of Ophthalmology; Dr. C. J. G. Mackenzie, of the Department of Health Care and Epidemiology, was appointed chairman of the Pollution Control Board of B.C. and served in a similar capacity on the Canadian Public Health Association's Task Force on Arsenic in Yellowknife in the Northwest Territories; Dr. H. W. McIntosh, of the Department of Medicine, was chairman of the Committee on Credentials of the Royal College of Physicians and Surgeons; Dr. John Dirks, the new head of the Department of Medicine, is a member of the Medical Research Council; and Dr. Moira Yeung, of the same department, is on the task force of the Canadian Thoracic Society on the health of grain workers.

PHARMACEUTICAL SCIENCES. The Drug and Poison Information Centre of the faculty, mentioned earlier in this report, is located at St. Paul's Hospital and provides a resource for all health professionals in B.C. Other faculty activities include the following: Dr. John Sinclair and Mr. Norman Zacharias are on the Board of Examiners of the College of Pharmacists of B.C.; Dr. Sydney Katz is one of the organizers of the newly formed B.C. chapter of Canadians for Health Research and also works closely with the

B.C. Heart Foundation; Dr. Gail Bellward is on the Pharmacy Examining Board of Canada; and Mrs. Beverley Dinning is a member of a committee of the College of Pharmacists of B.C. which is developing patient drug-profile records to enable the pharmacist to detect and prevent potentially dangerous interactions that result when drugs are taken with food and other drugs.

SCIENCE. Professional activities of members of the science faculty included the following: Prof. R. D. Russell, the head of the Department of Geophysics and Astronomy, is serving as secretary-general of the Inter-union Commission on Geodynamics until December, 1979; Dr. Gordon Walker of the same department is on the scientific advisory council of the Canada-Hawaii-France telescope and is chairman of the working group on data acquisition and instrument control; Dr. R. A. Freeze, of the Department of Geological Sciences, was appointed editor of the journal *Water Resources Research*, and Prof. Hugh Greenwood of the same department is associate editor of the *Canadian Journal of Earth Sciences*; Dr. R. L. Armstrong, also of geological sciences, reviewed the operation of the geochronometry section of the Geoscience Council of Canada; Prof. H. V. Warren, a long-time member of the geological sciences department, continues to be active in the community as an executive member of the Vancouver branch of the United Nations Association and a director of the B.C. division of the Multiple Sclerosis Society of Canada; Dr. Colin Clark, of the mathematics department, was a project consultant for the Fisheries and Marine Service of Environment Canada; and in microbiology Dr. B. C. McBride served on both the executive and council of the Medical Research Council of Canada and on several bodies associated with Canadian dental research, while Dr. Julia Levy chaired the Medical Research Council's scholarship committee and served on the board of directors of the B.C. Cancer Foundation.

Winners of the Master Teacher Awards for 1977 were Prof. J. Lewis Robinson, left, of the Department of Geography, and Prof. Donald Stephens, a Canadian literature expert in the English department.



Faculty honors and awards

Each year, numerous members of the faculty receive awards and honors in recognition of their contributions to teaching and research. The 1976-77 academic year was no exception. What follows is a listing of some of the outstanding awards and honors.

The 1976-77 Master Teacher Awards went to two experts in the field of Canadian studies — Prof. J. Lewis Robinson, of the Department of Geography, and Prof. Donald Stephens, of the Department of English. Prof. Robinson, who has been a member of the UBC faculty for 30 years and was head of geography for 22 years, was one of the first professional geographers in Canada. He has been honored on numerous occasions by professional bodies, including the Canadian Association of Geographers, which cited him in 1976 for “exceptional service to the profession of geography.” Prof. Stephens has taught Canadian poetry and literature at UBC since joining the faculty in 1958 and has

served for a number of years as associate editor of the UBC journal *Canadian Literature*. The winners of the awards share a cash prize of \$5,000 donated by Dr. Walter Koerner, who established the awards in honor of his brother, the late Dr. Leon Koerner, and to provide recognition to outstanding teachers of undergraduate students.

Certificate of merit winners in the 1976-77 Master Teacher competition were Prof. R. R. Haering, physics; Prof. John Helliwell, economics; Dr. John S. Murray, education; and Mr. French Tickner, music.

Several other faculties of the University recognize outstanding teachers. In the Faculty of Applied Science, Dr. P. G. Hill, of the Department of Mechanical Engineering, was the recipient of the Walter Gage Teaching Award. In the Faculty of Commerce, the winner of the Teacher Excellence Award of the Commerce Undergraduate Society was Dr. S. C. Gilmour. Honorable mention in the competition was awarded to Prof. J. C. T. Mao, David Baxter, David Lam and Ronald Fraser. Dr. Frank Abbott was the first recipient of the “Good Teacher Award” of the Faculty of Pharmacy Undergraduate Society.

The University's major award for research — the Prof. Jacob Biely Faculty Research Prize — was awarded to Prof. Michael Smith of the Department of Biochemistry for his outstanding work on DNA, the fundamental genetic building block of life. Prof. Smith has discovered a simple method of building short chains of DNA for a specific gene. His technique simplifies previous methods of building DNA chains and greatly enhances the work of other biochemists carrying out fundamental work in this important area of scientific research. The prize carries with it a cash award of \$1,000 and is named for Prof. Biely, former head of the UBC poultry science department.

Two members of the Department of Chemistry were honored for their research during the academic year. Prof. Laurance D. Hall received the Corday-Morgan Medal and Prize from the Chemical Society of London, England, for his contribution to the development of nuclear magnetic resonance techniques related to the understanding of molecular structure and conformation. Prof. Christopher Brion, of the same department, was the recipient of the Noranda Award of the Chemical Institute of Canada for his original contributions in electron microscopy in chemistry.

Dr. Norman Watt, director of Extra-Sessional Studies, was honored a second time by the Western Association of Summer Session Administrators. He received the association's Creative Programming Award for the Olympic Field Study Program offered during the 1976 Summer Session. The program attracted 72 Canadian and American students who undertook a comparative study of physical education, recreation and athletic programs and facilities in the public schools and universities of four Canadian provinces. In 1974, Prof. Watt received the same award for his initiative in developing a program of free summer courses for senior citizens, which remains a feature of our annual Summer Session.

UBC faculty members who were inducted into the Order of Canada in the academic year were: Prof. Erich Vogt, vice-president of faculty and student affairs, a member of the physics department, and a key figure in the development of the TRIUMF Project at UBC; Prof. David T. Suzuki, of the Department of Zoology and a noted geneticist who is widely known for his television and radio broadcasting ac-



tivities in the field of science generally; and Prof. R. R. Haering, head of the Department of Physics.

A significant number of faculty members had the honor of serving or being elected to serve as the presidents of their respective professional organizations in the 1976-77 academic year. This group included: Dr. John Hay, geography, who served as president of the Canadian Meteorological Society; Prof. Alan Cairns, political science, as president of the Canadian Political Science Association; Dr. William G. Wellington, head of the Institute of Animal Resource Ecology, as president-elect of the Entomological Society of Canada; Prof. Gideon Rosenbluth, economics, as president of the Canadian Economics Association; Prof. J. K. Stager, geography, as president of the newly formed Association of Canadian Universities for Northern Studies; Mrs. Anne Piternick, librarianship, as president of the Canadian Library Association; Prof. Roy Stokes, head of the School of Librarianship, as president of the Canadian Council of Library Schools; Dr. Gloria Gutman, psychology, as president of the Gerontological Association of B.C.; Dr. T. R. Parsons, oceanography, as president of the International Association of Biological Oceanography; Prof. Hugh Greenwood, geological sciences, as president of the Geochemical Society; Prof. V. F. Mitchell, commerce, as president of the western division of the Academy of Management; Dr. L. F. Moore, commerce, as president of the Canadian Association of Administra-

Prof. Michael Smith, left, shown in his biochemistry department laboratory, won the Prof. Jacob Biely Research Prize for his outstanding work on DNA, the fundamental genetic building block of life.

tive Sciences; and Prof. Charles McDowell as president-elect of the Chemical Institute of Canada.

Five members of the UBC faculty were elected members of the Royal Society of Canada, this country's most prestigious academic organization. The new fellows are: Prof. K. O. Burridge, head of the Department of Anthropology and Sociology; Prof. Geoffrey Durrant, of the Department of English; Prof. John E. Phillips, of the zoology department; Prof. Robert E. Snider, chemistry; and Prof. Lawrence Young, electrical engineering.

Other faculty members who were elected fellows of prestigious academic organizations were: Prof. Geoffrey Scudder, zoology, named a fellow of the Entomological Society of Canada; Prof. G. C. Archibald, economics, fellow of the Econometric Society; Prof. W. E. Fredeman, English, fellow of Great Britain's Royal Society of Literature; Prof. John Mercer, geography, fellow of the Royal Scottish Geographical Society; and Prof. Beryl March, poultry science, fellow of the Poultry Science Association.

Two UBC psychologists won international awards from professional organizations for their research. Dr. Ralph Hakstian, of the Department of Psychology, won the Raymond B. Cattell Award of the Society of Multivariate Experimental Psychology, which limits its membership to 60 persons. Dr. Hakstian specializes in the analysis of research data that involves many variables. He has developed mathematical techniques which allow researchers to look at a number of traits simultaneously. Dr. Roger Boshier, a social psychologist and adult education expert in the Faculty of Education, was given the first Imogene Oakes Award of the Adult Education Association of the United States "in recognition of high scholarship and total commitment to analysis, interpretation and growth of adult education and its future contributions to society and the individual."

Several members of the faculty were invited to give papers or lectures to professional organizations or received recognition for papers published during the academic year. This group included: Dr. Stephen Drance, head of the Department of Ophthalmology in the Faculty of Medicine, who gave the second Spaeth Memorial Lecture in Philadelphia; Dr. Carl Walters and Dr. Ray Hilborn, of the Institute of Animal Resource Ecology, who received the 1977 Wildlife Society Award

for the outstanding fisheries paper published in North America in 1977; Prof. Phelim Boyle, of the commerce faculty, who received a prize for the best article published in the *Journal of Risk and Insurance* in 1976; and Prof. J. P. Duncan, head of the Department of Mechanical Engineering, who received an award for the best technical paper of 1977 from the Numerical Control Society in Pittsburgh, Penna., in May, 1977.

Two members of the Faculty of Law received the degree of Doctor of Laws (LL.D.) from British universities following an academic assessment of their original, published research. Prof. M. A. Hickling, an expert in the field of labor law, was honored by the University of London, and Prof. E. C. E. Todd, an expert in the fields of property and municipal law, was honored by the University of Manchester.

Three people with close connections with UBC's Institute of Oceanography were honored as pioneers in the field of physical oceanography in Canada during the academic year. Prof. George L. Pickard, the head of the UBC institute; Dr. J. P. Tully, a one-time lecturer at UBC; and Dr. W. M. Cameron, a founding member of the UBC institute, had a special issue of the journal of the Fisheries Research Board of Canada dedicated to them.

Two members of the Faculty of Medicine were inducted into The Most Venerable Order of the Hospital of St. John of Jerusalem at a ceremony at Government House in Victoria. Named Knights of Grace, the highest honor awarded by the order in Canada, were Dr. F. R. C. Johnstone, of the Department of Surgery, and Dr. John F. McCreary, professor emeritus of health sciences and former dean of medicine. Dr. McCreary was also honored by the Canadian Pediatric Society. He was named the recipient of the Ross Award for his outstanding contribution to child health care.

Charles J. Connaghan, UBC's vice-president for administrative services, was appointed to the federal government's 28-member Economic Council of Canada, which sponsors a research program for economic planning and a public-education program.

Dr. Peter Hochachka, of the Department of Zoology, was awarded a prestigious Guggenheim fellowship to enable

him to continue his highly regarded work on fish and mammals capable of surviving on little or no oxygen.

Prof. Harry V. Warren, of geological sciences, was honored in England in June, 1977, by the International Hockey Federation. He received the federation's Order of Merit for his many contributions to Canadian field hockey.

Two members of the Faculty of Agricultural Sciences honored during the academic year were Prof. L. M. Staley, who was the first winner of the Maple Leaf Award of the Canadian Society of Agricultural Engineers "in recognition of outstanding personal qualities, professional abilities and achievements in advancing the goals of the society and the profession of agricultural engineering"; and assistant dean Dr. J. F. Richards, winner of the Institute Award of the Canadian Institute of Food Science and Technology, for an outstanding contribution to that organization.

Prof. J. Lewis Robinson, of the geography department and one of UBC's master teachers, received the Award of Merit from the Western Institute for the Deaf for his contributions to that organization.

Dr. Robert Silverman, of the music department, won the 1977 Grand Prix du Disque from the Liszt Society of Budapest in the solo piano category for a recording of that composer's work. He has also been invited to give ten performances in the Soviet Union in January, 1978, where he will appear as a soloist and with various orchestras.

Prof. John B. Evans, head of the Department of Mineral Engineering, was named Distinguished Lecturer for 1977 by the Canadian Institute of Mining and Metallurgy, an appointment that will take him to 25 Canadian centres to speak in 1977 and 1978. Another member of the department, Prof. Jan Leja, received an honorary degree from the Marie Curie-Sklodowska University of Lublin, Poland, in recognition of his contributions to mineral processing.

Governing bodies

There are few changes to report in the makeup and composition of the two main governing bodies of the University, the Senate and the Board of Governors.

In February, 1977, the students elected Mr. Moe Sihota to a one-year term on the Board to replace Mr. Richard Murray, who graduated. Mr. Basil Peters was re-elected for a further one-year term. A total of 17 students were elected to membership on Senate, either in elections or by acclamation.

Hon. Thomas A. Dohm, QC, retired as chairman of the Board on August 31, 1977, after having served the maximum two years allowed under the Universities Act. He will remain a member of the Board and will be succeeded as chairman on September 1, 1977, by Mr. George Morfitt, who has been a Board member since 1975. Mr. Morfitt will also continue as chairman of the Board's finance committee. Changes in chair positions for other Board committees are as follows: Miss Sadie Boyles becomes chairman of the staff committee, succeeding Ms. Pat Chubb; Mr. P. R. Brissenden becomes honorary secretary, succeeding Miss Boyles; and Mr. Ian Greenwood becomes chairman of the property committee, succeeding Mr. Ken Andrews.

I am pleased to have this opportunity to record my gratitude to all members of the Board of Governors and Senate for their devotion to ensuring that the academic enterprise at UBC remains sound and that our students and faculty members have maximum opportunities for learning and discovery. The Board and Senate, like the University in general, function efficiently through a system of committees that hold many meetings in addition to the formal monthly gatherings where the decisions reached in committee are debated and, in most cases, accepted. A few committees, such as the Senate Budget Committee, established to advise the president on the preparation of the University's annual operating budget, meet very frequently in order to carry out their mandate, but report to their parent bodies on an annual basis.

The University has been hard-pressed financially in recent years and some difficult decisions have had to be confronted and resolved. It seems likely that even more difficult decisions will have to be made in the coming months. I know that members of both governing bodies will not hesitate to give the same amount of time and energy as in the past to the task of enhancing the University's teaching, research and public service functions.

Appointments, resignations and retirements

Prof. Warren Kitts, who has served as acting dean of the Faculty of Agricultural Sciences since the resignation of Prof. Michael Shaw to become UBC's vice-president for University development, was confirmed as dean of the faculty.

Dr. William Webber was appointed dean of the Faculty of Medicine, succeeding Dr. David Bates, who remains at UBC as a member of the Departments of Physiology and Medicine.

Prof. Peter Lusztig was appointed dean of the Faculty of Commerce and Business Administration.

Dean Bernard Riedel is the new co-ordinator, Health Sciences, succeeding Prof. Harold Copp, who remains at UBC as head of the Department of Physiology in the Faculty of Medicine. Dean Riedel will also continue to head the Faculty of Pharmaceutical Sciences.

Prof. Paul C. Gilmore was named head of the Department of Computer Science, succeeding Prof. J. E. A. Peck, who remains as a member of the UBC faculty.

Dr. Marilyn D. Willman is the new head of the School of Nursing, succeeding Dr. Muriel Uprichard, who has retired.

Prof. Wallace Berry was named head of the Department of Music, effective Jan. 1, 1978.

Dr. Vincent R. D'Oyley was named associate dean of the Faculty of Education, succeeding Dr. Roy Bentley, who returns to full-time teaching and research duties in the faculty.

Dr. Frank P. Patterson was appointed head of the Department of Surgery in the Faculty of Medicine.

New department heads in the Faculty of Agricultural Sciences are: Prof. James MacMillan, agricultural economics; Prof. D. B. Bragg, poultry science; and Prof. Bruce Owen, animal science.

Prof. Roy Nodwell became head of the Department of Physics, succeeding Prof. R. R. Haering, who will remain a member of the department.

Dr. Andrew Thompson was appointed head of the Westwater Research Centre, succeeding Prof. Irving Fox, who becomes a full-time member of the staff of the School of Community and Regional Planning. Dr. Thompson will also continue to hold his appointment as professor of law.

Dr. Peter Oberlander was confirmed as director of the Centre for Human Settlements.

Administrative appointments included Christine Samson as director of Food Services; Michael Davis as director of residences; and Prof. Ben Moyls as director of ceremonies.

Twelve senior members of UBC's teaching and research staff reached retirement age in the 1976-77 academic year, three of them after 31 or more years of service with the University.

Prof. David C. Murdoch, of the Department of Mathematics, joined the staff in 1944 and retires after 33 years on the faculty.

Prof. C. D. Samis was a member of the Department of Metallurgy for 32 years.

Prof. Robert Wellwood retired after 31 years as a member of the Faculty of Forestry. One of his retiring faculty colleagues, Prof. Kenneth Graham, was with UBC for 29 years.

Prof. Hans Ronimois retired from the Department of Slavonic Studies after 28 years; Prof. J. E. Bismanis, of microbiology, was a faculty member for 25 years; Prof. Katherine Beamish was a member of the Department of Botany for 21 years; and Dr. George Woodcock was a faculty member for 17 years as a teacher in the Department of English and as the founding editor of the UBC journal *Canadian Literature*.

Other retiring faculty members are: Robert W. Hamilton who retires after 16 years of service, first as a member of the teaching staff in the School of Librarianship and laterally as head of the acquisitions division of the University library; Prof. Helen Gemeroy, a member of the School of Nursing for nine years and assistant director of nursing in the University's Psychiatric Unit; Dr. F. D. Garrett, professor of anatomy in the medical school for nine years; and Prof. Muriel Uprichard who, as director of the School of Nursing since 1971, supervised a complete revision of the school's curriculum and training program.

The University and generations of students are indebted to each of those who retired for their service as teachers, researchers and administrators.

Congregation

The University's annual Congregation for the conferring of honorary and academic degrees was held in the War Memorial Gymnasium on June 1, 2 and 3, 1977. The University Senate awarded a grand total of 4,340 degrees and 73 diplomas to graduating students in the 1976-77 academic year.

On June 1, the University conferred honorary degrees on Gertrude Mary Laing, who chairs the Canada Council, and George Woodcock, one of Canada's best-known writers. Dr. Laing, who received the degree of Doctor of Laws (LL.D.), is a devoted public servant who is vice-president of Canada World Youth and who served on the Royal Commission on Bilingualism and Biculturalism. She was made an officer of the Order of Canada in 1972. Dr. George Woodcock retired from UBC this year after 21 years of service, which included teaching in the Department of English and 17 years as founding editor of *Canadian Literature*, one of a number of learned journals published at UBC. He made it, in the eyes of one Canadian observer, "by far the most important journal on the subject of Canadian writers and writing ever to have been produced in this country." He was awarded the degree of Doctor of Letters (D.Litt.)

On June 2, honorary Doctor of Laws degrees were conferred on Grace MacInnis, the first woman Member of Parliament from B.C., and Arthur Fouks, a former chairman of the UBC Board of Governors. Mrs. MacInnis, daughter of J. S. Woodsworth, founder of the Co-operative Commonwealth Federation, later the New Democratic Party, was elected to the B.C. Legislature in 1941 and to the federal House of Commons in 1965. She served with distinction in both assemblies. Mr. Fouks, who holds degrees in law and arts from UBC, has been active in a number of community health organizations, most notably the B.C. Heart Foundation. He served on the Board of Governors from 1963 to 1972 and was Board chairman in 1971-72.

On June 3, the University honored two

noted scientists — Prof. Ian McT. Cowan and Dr. Har Gobind Khorana. Prof. Cowan, who retired in 1975 as dean of the Faculty of Graduate Studies, is internationally known for his work in the field of zoology and conservation. Dr. Khorana, who is now at Massachusetts Institute of Technology, was a scientist with B.C. Research on the campus from 1952 to 1959, where he began his research on the biochemistry of genetic materials that led to a Nobel Prize. Both were awarded the honorary degree of Doctor of Science (D.Sc.)

A familiar campus figure, noted for his candor and his academic achievements, will be absent from future Congregations. The 1977 event was the last that will be arranged by Prof. Malcolm McGregor who, with the able assistance of his staff in the Ceremonies Office, Miss Peggy Sayle and Mrs. Joan King, has ensured that official University occasions happen with clockwork precision. Prof. McGregor retired as head of the Department of Classics two years ago, but has continued a distinguished career as a teacher and researcher while serving as director of ceremonies for the University. I know that his many friends in the community and at UBC join me in wishing him well in the future.

Each member of the graduating class pays a fee, part of which is designated as a gift to the University. This year more than \$10,000 was distributed to three campus organizations. The beneficiaries were the Crane Library for the blind, which provides braille and tape-recorded books and other services to blind and partially sighted students at UBC and other universities in Canada; the Law Students' Legal Advice Program, which provides free legal advice to citizens at 11 Lower Mainland clinics; and the UBC Day Care Centre, which provides services to the children of students, staff and faculty.

Each year, the student who heads each graduating class is recognized when he or she arrives at the platform to receive his or her academic degree. Here is the 1977 list of medal and prize winners.

The Governor-General's Gold Medal (Head of the Graduating Classes in the Faculties of Arts and Science, B.A. and B.Sc. degrees) : Ivor Ladd.

The Association of Professional Engineers Gold Medal (Head of the Graduating Class in Engineering, B.A.Sc. degree) : Chung M. V. Leung.

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

The Dr. Maxwell A. Cameron Memorial Medal and Prize (Head of the Graduating Class in Education, Secondary Teaching Field, B.Ed. degree) : Evelyn B. Stiller.

The Dr. Maxwell A. Cameron Memorial Medal and Prize (Head of the Graduating Class in Education, Elementary Teaching Field, B.Ed. degree) : Wendy J. Owen.

The Ruth Cameron Medal for Librarianship (Head of the Graduating Class in Librarianship, M.L.S. degree) : Jocelyn H. Foster.

The Canadian Institute of Forestry Medal (best overall record in Forestry in all years of course, and high quality of character, leadership, etc.) : Mary E. Suttie.

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

The College of Dental Surgeons of British Columbia Gold Medal in Dental Hygiene (leading student in the Dental Hygiene program) : Ellen Stradiotti.

The Dean of Medicine's Prize (Head of the Graduating Class in Rehabilitation Medicine, B.S.R. degree) : Lynn M. Petersen.

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

The Horner Prize and Medal for Pharmaceutical Sciences, \$100 (Head of the Graduating Class in Pharmaceutical Sciences, B.Sc. Pharm. degree) : Vincent C. Y. Ho.

The Kiwanis Club Gold Medal and Prize, \$300 (Head of the Graduating Class in Commerce and Business Administration, B.Com. degree) : J. W. Bryan McConnell.

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

The H. R. MacMillan Prize in Forestry, \$200 (Head of the Graduating Class in Forestry, B.S.F. degree) : Mary E. Suttie.

The Physical Education Faculty Award (Head of the Graduating Class in Physical Education, B.P.E. degree) : Louise A. Sourisseau.

The Recreation Society of British Co-

lumbia Prize (Head of the Graduating Class in Recreation, B.R.E. degree) : Catherine J. Ross.

The Royal Architectural Institute of Canada Medal (outstanding student in Architecture, B.Arch. degree) : Stephen C. Quigley.

The Wilfrid Sadler Memorial Gold Medal (Head of the Graduating Class in Agricultural Sciences, B.Sc. (Agr.) degree) : Nancy E. Small.

Special University Prize, \$200 (Head of the Graduating Class in Fine Arts, B.F.A. degree) : Timothy L. Runkle.

Special University Prize, \$200 (Head of the Graduating Class in Home Economics, B.H.E. degree) : Marilyn J. Moore.

Special University Prize, \$200 (Head of the Graduating Class in Licentiate in Accounting, Lic. Acct. degree) : Laurence W. Root.

Special University Prize, \$200 (Head of the Graduating Class in Music, B.Mus. degree) : Peter Bjerring.

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) : Robert C. Feenstra.

Deaths

With regret, I record the names of active and retired faculty members who died during the 1976-77 academic year.

Frank Gnuip, senior instructor in the School of Physical Education and Recreation and former coach of the UBC Thunderbird football team, died suddenly on September 27, 1976.

Miss Mollie Cottingham, professor emerita of Education, died in December, 1976.

Dr. Marvin Darrach, professor of biochemistry, died on January 2, 1977.

William Muckle, honorary visiting professor to UBC, died suddenly on January 8, 1977.

Dr. Philip Vassar, of the Department of Pathology, died suddenly on February 26, 1977.

Prof. R. E. Burgess, of the Department of Physics, died suddenly on March 24, 1977.

Jessie MacCarthy, of the Department of Health Care and Epidemiology, died on April 8, 1977.

Alex Harshenin, of the Department of Slavonic Studies, died suddenly on August 25, 1977.