

The University of British Columbia









The President's Report 1980-81

The report of President Douglas T. Kenny to the Senate and Board of Governors of the University of British Columbia for the academic year September 1, 1980, to August 31, 1981.

The University of British Columbia

Foreword

To the Board of Governors and Senate, The University of British Columbia.

Ladies and Gentlemen:

I take pleasure in placing before you this annual record of activities at The University of British Columbia in the 1980-81 academic year. The deans of the faculties and others who have compiled the material on which this report is based have once again provided ample evidence that UBC is a major Canadian intellectual and cultural centre.

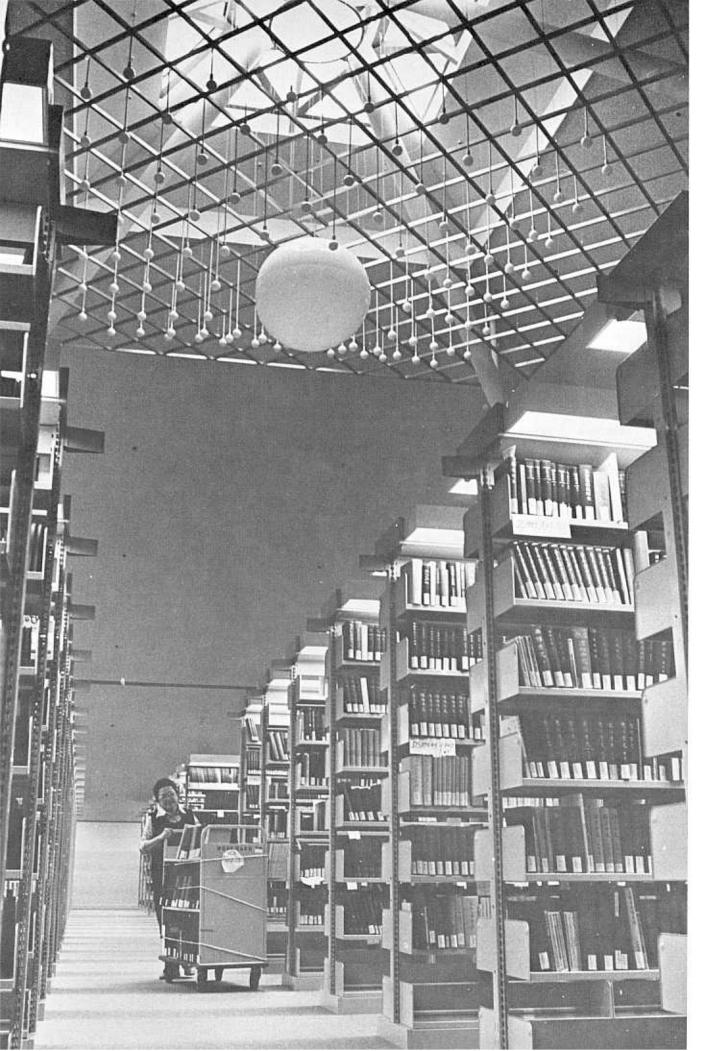
UBC can take pride in the fact that its enrolment continues to increase, that it is second only to the University of Toronto in terms of research funding and that it has one of the most productive and conscientious teaching and research staffs of any university on this continent.

Despite the many problems we face — inflation, under-funding and the threat of a withdrawal of federal financial support — the University continues to adhere to one of the principles on which it was founded, that of providing education of the highest quality for all the citizens of this province who can profit from it. The support we continue to enjoy in the community at large is, I believe, the result of our conscious effort to upgrade educational quality by imposing higher entrance requirements and insisting on high standards of achievement by our students and faculty.

Once again I acknowledge my indebtedness to those on whom I have called for advice in the past year, particularly members of the Board of Governors and Senate, who never fail to respond to requests for assistance despite heavy business and academic schedules. I know, too, that I speak on behalf of the University's governing bodies when I express gratitude to the faculty, the professional and support staff and to our students for their continuing support of the University's goals and aspirations.

Sincerely,

Douglas T. Kenny, President.



The President's Report 1980-81

Canadian universities and colleges may be grouped into three classes: a very small number of private colleges, provincial universities and The University of British Columbia. In the brief period of a little more than 65 years, the University has become one of Canada's most distinguished and cosmopolitan institutions of higher education. The University also has developed strengths of international standing.

I make this claim on the basis of my own experience of the University over the past 35 years as a student, teacher, researcher and administrator, as well as on the basis of the annual reports of the deans of UBC's 12 faculties.

The University offers a remarkable diversity and variety of programs and courses by eminent professors, acknowledged for their scholarship and dedication to students and service to the wider community. With the stress on past high academic achievement for entrance, our students have the potential to flourish and be successful if they are motivated to do so. The rich opportunities for interaction among eminent scholars and gifted students is what makes the crucial difference between other universities and The University of British Columbia.

Many other features of the vitality of the University contribute to the honest pride I believe we can have in the University as it is now and the optimism we have for the future.

For example, the total number of registrations for on- and off-campus credit and noncredit programs sponsored by the University during the 1980-81 academic year was nearly 116,000. This figure includes 53,029 enrolments for programs sponsored by the Centre for Continuing Education and 33,963 students - an increase of 4.1 per cent over the previous academic year — who enrolled for credit courses in our three major academic sessions. Measured in terms of student enrolments, the University is the second largest educational enterprise in the nation.

UBC's presence in other parts of the province continued to expand in 1980-81 through the activities of the Centre for Continuing Education and through off-campus credit courses offered by the Faculties of Forestry, Agricultural Sciences and Education and the School of Social Work. A wide range of professional groups, particularly those in the health sciences, are kept abreast of the latest developments in their fields through continuing education programs. Add to this the University's on- and off-campus activities in the performing arts and athletic and recreational programs and it is evident that UBC is an institution operating day and night, seven days a week, to meet the educational and cultural needs of the people of British Colum-

The union of research at the forefront of knowledge and the supervision of graduate students is essential for quality faculty. Once again, the faculty of the University demonstrated the unique value of their scholarship activities.

Thus, we can take pride in the fact that UBC now receives more money for research than any other university in Canada, with the exception of the University of Toronto. Grants for research in the 1980-81 fiscal year increased by 25.5 per cent to just over \$39.3 million. I regard this increase as a very positive vote of confidence in the quality of the scholarship of our faculty and graduate students.

Another yardstick for measuring the academic health of the University is its ability to attract support from governments and foundations for the expansion of its academic programs. In 1980-81 the Faculty of Applied Science was given the green light to plan expansion of its engineering programs with the aim of increasing our present enrolment of 1,700 students to 2,500. This faculty also received a provincial grant of \$620,000 to establish a laboratory for alternative fuels for motor vehicles and the federal government announced that it would provide up to \$1 million over the next five years to create a Centre of Excellence at UBC for research in microelectronics. Funding was also received through the Universities Council for a number of new degree programs in the Faculty of Arts, including a Master's degree in Archival Studies and new Bachelor of Fine Arts programs in acting and in design/ technical theatre. All of these developments create new opportunities for young people to realize career opportunities in areas of vital importance to the province and the nation.

I believe, too, that we have one of the bestprepared groups of students in Canada entering the University to begin their higher education. This is the result of new entrance requirements, which will be fully in place in the next academic year, calling for a more structured program for high school students intending to enter the University. And I reiterate here what I have said in the past - far from reducing our enrolment, the new requirements will have the long-range effect of attracting increasing numbers of students to UBC because of the quality of its

academic programs.

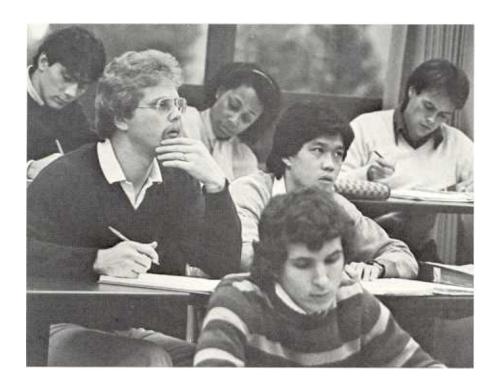
I invite you to read with special interest the section of this report entitled "Public Service," in order to learn something of the extent and variety of activities by our teaching and research staff outside the University. It is ample testimony to the confidence which industry, governments and private and community organizations have in the abilities of our faculty members.

Nowhere in the University is the concept of service to the wider public better exemplified than in the Library, now the second largest in Canada. In addition to supporting the basic teaching and research functions of the University, the UBC Library is truly a provincial resource, serving other B.C. educational institutions, the business and professional communities and the public generally.

All British Columbians can take pride in these accomplishments. I remain confident that our citizens and the governments they elect in-

OPPOSITE

UBC's outstanding Asian book collection, much of it in storage until this year, is now fully available to scholars and students in the new campus Asian Centre. Above the library is an interesting pattern of lights and latticework beneath the centre's skylight.



UBC students are better prepared for university-level work as the result of new entrance requirements phased in over the past five years.

tend to provide the financial resources that will enable us to maintain and enhance the quality of the education we can offer to an expanding student body. Let me list briefly a few of the areas of concern in the University community that could threaten the quality of higher education.

First, the University had a difficult year financially. Substantial financial resources are required to meet our teaching obligations and to provide a level of excellence demanded of a university of world stature. It continues to be a disappointment that my Annual Report has to give conspicuous attention to our deteriorating financial situation.

The University is heavily dependent on the level of funding received from the provincial government. Regrettably, the value of this funding has continued to decline in real terms. This decline stems from unavoidable incremental increases in salaries and the necessity to absorb inflationary price increases in non-salary items.

As a consequence of this underfunding, the University has grave cause for concern about its ability to maintain academic standards. It has been my consistent view that UBC has not yet had the chance to flesh out as a mature primary university for the province.

For the past five years our financial picture has not been very rosy. During these years the University has never come close to receiving its requested grant from government. Our massive shortfalls cannot continue indefinitely without serious damage.

As the academic year draws to a close in August, 1981, the University is faced with the prospect of an annualized shortfall of over \$7 million in its operating grant. The academic implications of this shortfall are far-reaching

unless there are corresponding increases in our revenues from the provincial government. The University awaits with some anxiety the government's response to the reasonable request of the University for supplemental funding to offset the shortfall of over \$7 million.

There is no more important function for government than education. Over the past few years, policy makers appear to have lost sight of this fact. British Columbians must be made aware of the necessity for action. In spite of a sluggish economy, I believe that British Columbians have a strong commitment to higher education and that they are prepared to have their public universities funded adequately.

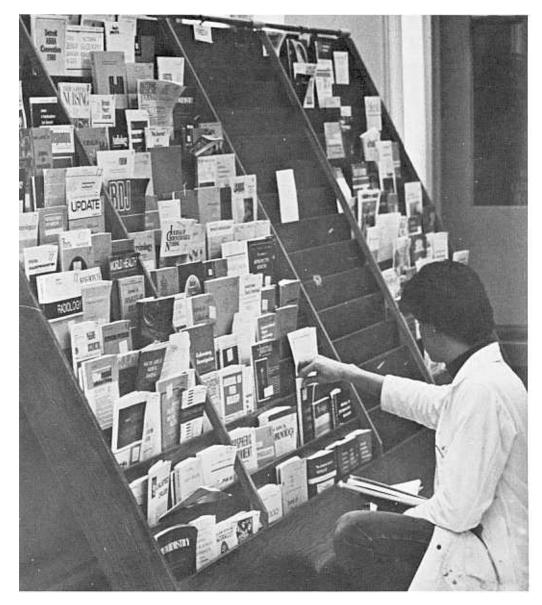
Another problem which has had serious results for the University is the escalating cost of housing in the Vancouver area. We have had numerous opportunities in recent years to attract some outstanding professors and researchers to the University to strengthen our academic programs. Some of these individuals were eager to join the faculty, but decided against coming because they were reluctant to commit themselves to long-term mortgages at current high rates of interest. The other side of this coin is that the University is vulnerable to raiding by other universities who are able to make attractive offers to some of our faculty members in areas of the country where the housing problem is not nearly so acute. Reluctantly, the University has had to accept the resignations of a number of young faculty members with real potential because of this state of affairs.

Yet another problem encountered in recent years is the shortage of qualified faculty members in certain areas of study where enrolments are growing rapidly and where there is also a high demand for their services in business, governments and other universities. One UBC faculty which has experienced this problem acutely in recent years is Commerce and Business Administration. There are currently over 300 vacancies in Canadian universities for commerce and business administration specialists, a situation which has led to intense competition for a limited number of experts. Dean Peter Lusztig cited these facts when he recommended to Senate in March, 1981, that enrolment in the Faculty of Commerce and Business Administration be limited in 1981-82 to a total of 850 students in the first two years of the four-year degree program. Both the Senate and the Board of Governors passed the proposal with the greatest of reluctance.

In my last report on the 1979-80 academic year I drew attention to the announced intention of the federal government to reduce its payments to the provinces for the support of higher education through the Established Programs Financing scheme in force since 1977. This scheme will be renegotiated by the provinces and the federal government in 1981-82.

Nothing that has happened in the interim has caused me to alter my view that withdrawal of the federal government from indirect funding of universities would be gravely damaging to the interests of Canada, which is now served by a network of many excellent universities.

Early in June, 1981, I presented a brief to a



UBC's library system provides significant public services to professionals and the general public. Left, a rack of medical journals in the Woodward Biomedical Library.

task force made up of representatives of all parties sitting in the House of Commons in Ottawa. The task force was established by the federal government to prepare a report on EPF based on hearings throughout Canada. I emphasized to the task force the need for the federal government to continue its funding of universities in the light of its responsibility for ensuring a nationwide balance of higher educational opportunities and scholarly capacity, the interprovincial mobility of university students, the support and fostering of excellence in scholarship, research and the advancement of knowledge, the maintenance of a highly qualified labor force and the international exchange of Canadian scholars with those of other countries. I also suggested as a personal proposal that the federal government make direct tuition grants to university students as a way of gaining recognition for its role in the financing of higher education.

When the academic year ended, the task force had not yet released its findings and the universities of Canada were still faced with the prospect of substantially reduced federal support.

Many of the matters outlined in this introductory section of my report are dealt with in greater detail in the sections which follow on Teaching and the Curriculum, Research and Public Service. I record here my debt to the deans of the faculties and the directors and heads of other academic and administrative units of the University for the thoroughness of their reviews of activities during the 1980-81 academic year.

I am sure you will agree with me that despite the many fiscal problems faced by the University, this campus continues to be one of the major intellectual and cultural centres in all of Canada.

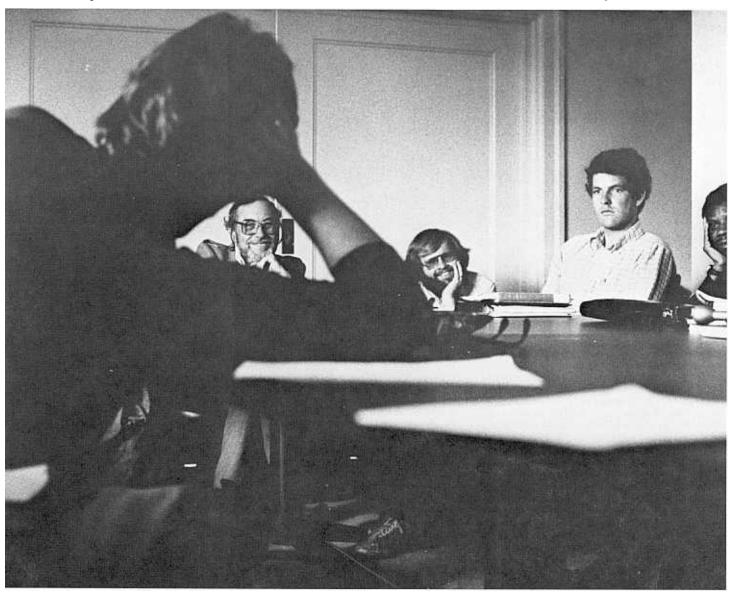
Teaching and the Curriculum

Distinguished visiting lecturer to the UBC campus during the academic year was American playwright Tennessee Williams, left, clearly amused during a seminar presentation by a creative writing student.

There is one aspect of University activity which is in a constant state of flux. I refer to the curriculum, the whole range of programs and courses that makes up the academic offerings of a comprehensive institution of higher learning such as UBC. There is nothing unusual about this constant and continuing change; indeed, it is the norm and that is as it should be. As new knowledge, some of it contributed by our own faculty through research, accumulates and is published, as society and our students make their needs known, so the academic offerings of the University must be altered so that the classroom becomes the place where ideas are aired and examined. No other institution in our society performs this function; it is one of the central ideas on which universities as we know them were founded.

The process of curriculum change continued unabated in the 1980-81 academic year. This process is most evident at meetings of Senate, which considers a report from its curriculum committee at almost every one of its 10 annual meetings. Less obvious is the annual revision of existing courses undertaken by hundreds of faculty members on the basis of their own research and reading. What follows are significant curriculum changes taken from the annual reports of the deans of UBC's faculties.

AGRICULTURAL SCIENCES. The faculty's Landscape Architecture program continued to expand with the addition of two new courses and an increase in the unit value of second, third- and fourth-year studio courses. Consultations with the botany department in the Faculty of Science led to changes in courses related to



weed biology and ecology and in Bio-Resource Engineering a reordering of the curriculum is designed to provide additional engineering strength related to plant and animal physiology and a greater understanding of soil physics.

APPLIED SCIENCE. In May, 1981, the Universities Council of B.C. released the report of a committee on engineering education, which recommended that UBC engineering programs should be expanded from the present enrolment of 1,650 students to 2,500 by the middle or latter half of the 1980s. The UCBC committee also said there was an urgent need to replace some of the obsolete laboratory equipment now in use in various engineering departments.

The University welcomes the challenge to expand its teaching and research capacities in an area that will be of paramount importance to the provincial and national economies in the decades to come. Dean Martin Wedepohl, the head of the Faculty of Applied Science, has undertaken to develop immediately a program of planning for the expansion, with advice from engineering alumni and the Association of Professional Engineers of B.C., for presentation to the Council.

The same report identifies the University of Victoria as the location for a second school of engineering, to be developed when there is a clear indication of demand, and also recommends that Simon Fraser University continue to offer the first two years of an engineering program that enables students to transfer into accredited engineering schools elsewhere.

In anticipation of the expansion of engineering education in the province, the provincial government has made available through the UCBC a grant of \$1.5 million. It is anticipated that about \$1 million of this will find its way to the UBC faculty in the 1981-82 fiscal year to alleviate some of the more serious concerns with respect to teaching assistants, capital equipment and sessional lecturers.

In terms of curriculum development, the Faculty of Applied Science continued planning for the possible introduction of a four-year degree program to replace the present five-year program. This will require a substantial realignment of faculty resources, including increased numbers of faculty members as well as improved laboratory and research space.

The undergraduate curriculum in the Department of Mining and Mineral Process Engineering has undergone considerable revision to strengthen the areas of mining methods and mine design, coal mining and preparation and process control. The Clinical Engineering Program involving co-operation between engineering and medicine formally started operations in 1980-81. Four courses have been approved, several projects initiated, laboratory space has been obtained and equipped and experiments have commenced. The program has developed an excellent working relationship with teaching and community hospitals and with the biomedical instrumentation industry.

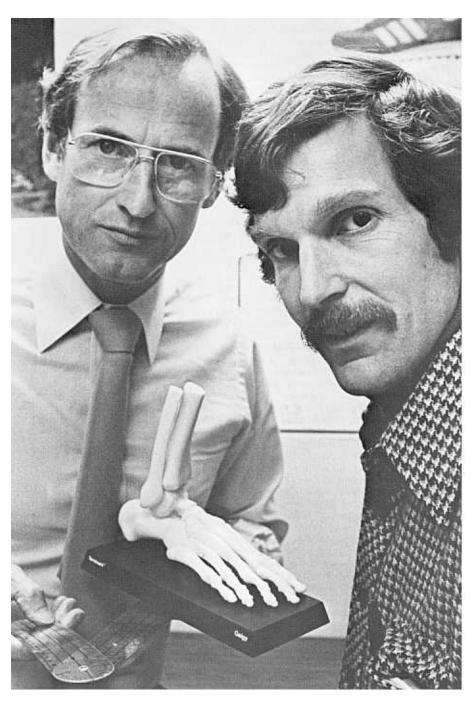
In the 1980-81 academic year, the faculty's School of Architecture submitted and received approval from Senate for a major revision of its program, including a change in the credential for the three-year Bachelor of Architecture

degree to a Master of Architecture degree, and replacement of the current M.Arch. program with a new and more comprehensive post-professional master's degree program with several specialization options. The plan, proposed for implementation in 1982-83, also involves an increase in the number of full-time faculty members and enrolment increases from 180 to 200 plus for the new M.Arch. degree and to 40 graduate students in the post-professional degree program.

During the academic year, the School of Nursing in Applied Science continued to implement long-range curriculum plans in line with the needs of the community and the nursing profession in Canada. The second year of the revised undergraduate program was implemented and planning for changes in the third and fourth years continued. Work continued in 1980-81 on graduate program revisions, which will be considered by Senate in the coming academic year for implementation in 1982-83.

ARTS. Among the numerous changes and innovations in the Arts curriculum in the last academic year were the following. For the first time in a Canadian university, a concentration of tutorials and courses in the writing of children's literature became available in the Department of Creative Writing. The geography department completed a thorough revision of the Bachelor of Arts curriculum for introduction in the 1982-83 academic year; an honors program in Romance languages was approved for implementation in 1981-82 in Hispanic and Italian Studies; and the Department of Religious Studies continued an extensive review of its undergraduate curriculum. In the Department of Music, all graduate degree programs have been revised to meet current needs and circumstances, and major changes in the undergraduate program in piano performance and opera were completed. Totally new undergraduate programs have been implemented in the areas of general music studies, music theory and secondary music education. The latter program is a major development representing a collaboration between the Faculties of Arts and Education resulting from several years of study and consultation. In the Department of Theatre, a Ph.D. program in dramatic literature, theatrical history and criticism was inaugurated in 1980-81, and the Universities Council approved a master's program in film and television studies and a Bachelor of Fine Arts program in acting and technical/design for inauguration in 1981-82. A significant change within the School of Social Work was a decision to admit students on a part-time basis for the concentrated program leading to the Bachelor of Social Work degree. This decision was made for reasons consistent with other important structural changes dating from the mid-1970s the desirability of remaining responsive to the professional manpower needs in the social welfare field. The school has also worked out with two Lower Mainland regions of the provincial Ministry of Human Resources arrangements for closer and more permanent relationships combining field work, research and demonstration projects.

COMMERCE AND BUSINESS ADMINISTRATION. The faculty has redesigned grad-



Sports medicine specialists Dr. Douglas Clement, left, and Dr. Jack Taunton joined the UBC faculty in the academic year to develop a multidisciplinary program of teaching and research on the prevention and treatment of sports injuries.

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uate courses in the field of management and information systems following approval of a new introductory course in this discipline. One of the other new courses introduced in the last academic year involves interaction by students with some 120 senior business executives from the downtown business community.

the downtown business community.

DENTISTRY. Discussions on major curriculum changes in the faculty were sparked by the concerns of faculty members, a consultant's review of curriculum and a recent accreditation report by the Canadian Dental Association. The internal committees which reviewed proposed changes did so with the aim of achieving overall program excellence through the balanced

strengthening of both the biomedical foundations and clinical sciences. The proposed changes, which affect first- and second-year students, involve the addition of hours of study to certain courses as well as a restructuring of the curriculum and introduction of a new interdepartmental course on preventive dentistry. A new course in hospital dentistry is being developed for fourth-year students and attention is being given to strengthening and formalizing the list of electives that fourth-year students may take. A proposal for a bachelor's degree in dental hygiene is currently before Senate.

EDUCATION. The undergraduate curriculum committee of the faculty has undertaken a review of the academic programs leading to the Bachelor of Education degree for elementary and secondary students. In addition, it has reviewed the two one-year programs for graduates of other faculties. Concrete proposals will be presented to the faculty as a whole in the fall of 1981. Significant curriculum changes approved by Senate in the academic year include: approval of the University's English composition examination as a requirement for all students in degree and teacher certification programs; implementation of stiffer promotional regulations for identification of extremely marginal students, who will be required to improve their academic standing; a major revision of the concentration and major in home economics; and approval of courses in microcomputer applications in education and instructional uses of microcomputers, courses which enable the faculty to respond to a demand for leadership in the use of microcomputers in schools. The faculty's graduate curriculum committee has drafted for discussion a report on graduate programs and specialization in graduate programs. Senate approved proposals to offer a Ph.D. in human learning, development and instruction and the D.Ed. degree in the field of curricular studies. Both have been approved by the Universities Council.

In the education faculty's School of Physical Education and Recreation a proposal for a sports science specialization is under consideration. This specialization will involve studies of the biodynamics of physical activity, the psychodynamics of motor skill acquisition and sport in society. A series of courses has been approved which forms the basis for professional preparation in the school's Department of Professional Studies and paves the way for a variety of career outlets in sport and physical activity settings. The series includes courses in professional studies in physical education, motor skill learning and performance, instructional analysis and design in sport and physical activity programs, planning sport and activity programs and directed field studies. The school's graduate program continues to attract students and a three-year plan of course offerings has been developed which allows students who are presently employed to begin work on a graduate degree. At its January meeting UBC's Senate approved a completely revised four-year program in recreation and leisure studies.

FORESTRY. It seems appropriate here to summarize the report of a six-member committee which I established under the chairmanship of Dean Peter Larkin, head of the Faculty of Graduate Studies, to review the state of the forestry faculty. The committee found that the faculty had grown in size and diversity to a point where a more efficient organization and stronger administration was needed. It was suggested that this could be accomplished by adding administrators and by departmentalizing the faculty. A departmental structure proposed by the faculty is held up by budget difficulties.

Another important recommendation asked the faculty to consider developing a four-year program instead of the current five-year degree program, which involves one year of study in the Faculty of Science, followed by four years in Forestry. This recommendation supported a study that was already in progress, so that by the end of the 1980-81 academic year a detailed proposal was ready for consideration by the faculty as a whole. It is anticipated that the proposal will reach Senate in the 1981-82 academic year. As in the case of the four-year program being studied for the engineering program in Applied Science, the new forestry curriculum will require more advanced preparation in science at the high school level.

The committee also recommended that the forestry faculty's already active program of graduate studies and research should be expanded. This resulted in the appointment in the summer of 1981 of Dr. J.W. Wilson as director of Forestry graduate studies. However, little expansion of the graduate program will be possible until more physical space can be provided. (The University's request for additional space for Forestry and Agricultural Sciences, which occupy the H.R. MacMillan Building, is described in detail in the section of this report dealing with Capital Financing and New Construction.)

The review committee also drew attention to the fact that UBC's forestry faculty is not large enough to meet the provincial demand for graduate foresters and specialists at the master's and doctoral degree levels and requires additional staff in key areas, including silviculture and tree harvesting. I will report next year on a number of other useful suggestions made by the committee which will be implemented in the 1981-82 academic year.

LAW. A general review of the curriculum of the Faculty of Law, which proceeded in two stages, was completed in the 1980-81 academic year. The first stage, which was implemented in the current academic year, concentrated on the first year of the law degree program. The clear concensus of both students and faculty is that a major qualitative improvement in the first-year program has been achieved.

Changes related to the second and third years of the Law degree program were approved by the Senate and Board of Governors in the winter of 1981 for listing in the Calendar for the coming academic year. The changes involved deleting 20 courses and seminars, approval of 10 new courses as well as courses designated as "topics" in specialized areas. The underlying rationale in each instance is to permit advanced work in topics of contemporary interest and to allow for experimentation in presentation of a subject. Adoption of the recommendations relating to the higher years brought to a conclusion a pro-

cess that has engaged the attention of the faculty over the last two academic years.

MEDICINE. The only significant change of curriculum in the Faculty of Medicine occurred in its School of Rehabilitation Medicine, which received approval from Senate to split its existing degree program into separate streams to educate specialists in either occupational or physical therapy. At present, the school's curriculum provides for a preliminary qualifying year of study followed by three years of specialized studies leading to dual qualification in both occupational and physical therapy. Under the new curriculum, students who graduate with a degree in one speciality would be eligible to continue or return to their studies for an 18-month period to qualify in the second area of specialization offered by the school. The question of the degree credential to be offered by the school is still under consideration.

The medical faculty added another arrow to its quiver of health sciences specialties in 1980-81 with the establishment of a Division of Sports Medicine within the Department of Family Practice. The division has three fulltime members - Dr. Douglas Clement, Dr. Jack Taunton and Dr. Donald McKenzie who also hold appointments in the School of Physical Education and Recreation. In conjunction with the faculty of the school and with other health sciences professional faculties and departments, the new appointees will aid the development of an interdisciplinary, preventive medicine program. The sports medicine group fits into the basic concept of the Health Sciences Centre through their involvement in teaching, research and public service. One of the team's primary functions will be the development of a course on the prevention and treatment of athletic injuries.

SCIENCE. The Faculty of Science has had to respond to proposed changes in the curriculum of the Faculty of Applied Science. Thus, the Departments of Chemistry, Mathematics and Physics have had to accommodate students enrolled for engineering programs, particularly for first- and second-year courses. Mathematics has also developed an undergraduate degree program with the Department of Electrical Engineering and has initiated new honors courses in first and second year for more mathematically talented students. The Department of Physics has made provision in the second-year program to permit the transfer of students to and from the engineering program. The new Department of Oceanography, formerly the Institute of Oceanography in the Faculty of Graduate Studies, has developed a new combined honors program of courses to be offered in the 1982-83 academic year.

The material selected for inclusion in this section of my report deals only with teaching and the curriculum as it applies to the UBC campus proper. The University's efforts in the field of continuing education are outlined in a later section of this report.

Research

One significant measure of the academic quality of a university is its ability to attract funds for research. Faculty members apply for grants as individuals and proposals are carefully screened by peer groups who decide which deserve support. It gives me much pleasure to report that research grants to UBC in the fiscal year 1980-81 totalled \$39,325,600, an increase of about 25.5 per cent over the previous year's total. I regard this as a very positive vote of confidence in the quality of scholarship at UBC.

1980-81 marks the fourth year in a row where the rate of increase in grants for research has exceeded 20 per cent. We now receive more money for research than any other university in Canada, with the exception of Toronto. The research-funding trends of the last five years, noted in previous reports, continued in the last fiscal year. Support from federal granting agencies, while still providing the largest share of research funding, continued to decline as a proportion of total grants — 45.5 per cent in 1980-81, down from 46.5 per cent in 1979-80. However, grants from provincial agencies and government departments continued to increase and made up 22.2 per cent of the total in 1980-81 compared to 17.4 per cent of the total in the previous fiscal year.

Eight UBC departments received more than \$1 million each for research in the last fiscal year and three in this category exceeded the \$2 million mark. The Department of Medicine in the medical faculty topped the grant list with a

total of \$2,938,111, followed by the Departments of Physics and Chemistry in the Faculty of Science, which received \$2,819,996 and \$2,265,632, respectively. Other departments receiving more than \$1 million were Biochemistry, Botany, Zoology, Pathology and Mechanical Engineering.

At its October, 1980, meeting, the Board of Governors approved the appointment of Dean Peter Larkin as associate vice-president, research. Dean Larkin, who will continue as head of the Faculty of Graduate Studies, will report to Prof. Michael Shaw, vice-president, academic.

Later in the academic year, the Board of Governors approved a new patent policy developed by the executive committee on research after an extensive study of patent policies of leading North American universities. The essential purpose of the University Patenting and Licensing Plan is to encourage the public use and commercial application of inventions, and in so doing to protect the rights of the inventor and the University.

It seems appropriate here to draw special attention to the research and other activities of the Department of Asian Studies and the Institute of Asian Research in the light of the opening during the academic year of the new Asian Centre. I fully expect that the new centre will act as a catalyst for the further expansion of many activities, including the performing arts,

Grants for research in 1980-81 increased by about 25 per cent over the previous fiscal year. Except for the University of Toronto, UBC now receives more money for research than any university in Canada.



which have been developing steadily in recent years.

Members of the Department of Asian Studies were active in various fields of scholarship in addition to teaching duties which encompass courses in Asian and Indian languages and culture. Research projects under way involve the use of the computer for textual criticism and printing, the relationship between socioeconomic factors, public health programs and infant mortality in Sri Lanka, and several studies on the linguistics and grammar of Asian languages. During the academic year seven books by faculty members in Asian studies were published or accepted for publication.

The Institute of Asian Research in the Faculty of Graduate Studies has been actively involved in a variety of research projects. A study of B.C.'s trade prospects with Asia, financed by the B.C. Ministry of Industry and Small Business, was completed with the publishing of reports by Profs. Frank Langdon and Samuel Ho. A project on rural development and regional autonomy in China was concluded with the presentation of the final report to the United Nations Centre for Regional Development in Japan, and research continued on the history of the Institute of Pacific Relations. Other studies involve ethnic relations in a whitecollar setting by Prof. Brenda Beck of Anthropology and Sociology, and urbanization in Asia by Prof. Terry McGee, who is the institute's director. The institute has also continued to be responsible for the publication of the quarterly Pacific Affairs, regarded as one of the leading journals dealing with the countries of the Pacific Rim. During the academic year, the institute prepared major submissions to a foundation and to the B.C. government requesting funds for major research undertakings.

The Asian studies department and the institute are aided in their research and extension programs by the President's Committee on Japanese Studies, which made use of funds from a number of outside sources, including the Japan Foundation, to provide scholarships and support for graduate students, the purchase of library materials, for travel expenses and honoraria for five visiting lecturers and to support research and teaching activities by faculty members in the Departments of Religious Studies, Anthropology and Sociology and Asian Studies.

It should be emphasized that the Asian studies department and the institute, while fostering the core program in this area of study at UBC, are not the only academic units which have an interest in Asian matters. Our Faculty of Law is rapidly developing a program in Japanese law in the light of our growing commercial relations with Japan. Several members of the Faculty of Commerce and Business Administration are interested in aspects of Asian trade and there are a number of faculty members in the Departments of Music, Theatre and Fine Arts who will make use of facilities in the Asian Centre for concerts, plays and exhibitions.

The deans of UBC's 12 faculties have once again provided me with a considerable list of research projects under way. In the listings

which follow I have attempted to select those which indicate the scope and variety of activity in the research endeavor at UBC.

AGRICULTURAL SCIENCES. Researchers in this faculty were awarded nearly \$3.6 million in 1980-81, an increase of 23 per cent over the previous academic year. The funds supported more than 235 diverse projects and studies, many of them of an applied nature carried out in areas outside the Lower Mainland. These scholarly efforts resulted in seven chapters in books, 87 papers published in refereed journals, 64 reports, mongraphs, bulletins and articles, 92 conference papers and abstracts and one patent.

The range and variety of research in the faculty is indicated by the following projects: the effectiveness of government regulation of the dairy industry by Dr. R.R. Barichello; studies of nutritional quality and productivity of forage-finished and range-fed beef by Drs. J. Vanderstoep and R.D.H. Cohen; the development of techniques for assessing land quality by Dr. H.E. Schrieier; study of the fatty tissues of broilers which has implications in human obesity by Prof. Beryl March; a range of animal studies on the Vancouver Island wolf, the Grizzly bear and coyote predation on domestic sheep by Dr. David Shackleton; the development of prescriptions for the construction of playing fields that are useable during rain or shortly after rainfalls by Dr. Jan de Vries; landscape design to increase the potential of passive solar use for residential communities in the Greater Vancouver area by Prof. L. Diamond; oil recovery from biological materials by Dr. N.R. Bulley; and assessment of reindeer rangeland conditions in the Mackenzie River delta in Canada's far north through a multi-stage remote sensing survey by Dr. Peter Murtha.

APPLIED SCIENCE. This faculty was the recipient in 1980-81 of two major research grants. UBC was designated a "Centre of Excellence" by the federal government for research into microelectronics and will receive up to \$1 million over the next five years from the ministry of trade and commerce. The microelectronics laboratory based in the Department of Electrical Engineering will perform a number of functions, including education of graduate and undergraduate students, advanced training for personnel from local industry and, through co-operation with local industry, will develop new types of devices for direct sale or licensing and undertake research contracts in the main line of current research. The Department of Mechanical Engineering received a grant of \$620,000 to establish a laboratory for alternative fuels for motor vehicles. More recently, the federal government has taken an interest in this area and may allocate more than \$5 million for research through B.C. Research. It is expected that UBC would be a major partner in the venture, which would permit further development of the heat engines laboratory.

In the electrical engineering department, Prof. Michael Beddoes continued his research on the development of mechanical aids for the blind with grants of more than \$90,000 from the Mr. and Mrs. P.A. Woodward's Foundation and the B.C. Health Care Research Foundation. In the same department a grant of \$25,000



Electrical Engineering professor Larry Young, left, prepared a proposal that resulted in UBC being declared a "Centre of Excellence" by the federal government for research into microelectronics. Prof. Martin Wedepohl, right, dean of the Faculty of Applied Science, played a key role in gathering support from other B.C. educational institutions for the UBC proposal.

from B.C. Hydro supports power system research by Prof. H.W. Dommel. Dr. David Pulfrey successfully completed a research contract with an eastern firm by supplying it with novel solar cells made at UBC for the world's first solar panel utilizing surface junction solar cells.

The Department of Civil Engineering lists nine major projects involving studies of pollution, strength of materials, earthquake and petroleum engineering, as well as a three-year contract to manage an investigation unit studying vehicle defects and human response to accidents. Grants to faculty members in Mechanical Engineering totalled \$1,265,810 for projects in the fields of aerodynamics, friction, insect traps, solar energy systems, nuclear energy and naval architecture.

In the Department of Metallurgical Engineering, a project on electroslag casting unique in North America continued to advance. The federal government is building a pilot plant to

develop the process further prior to industrial applications. The pilot plant will be based on work done at UBC. Other research in this department includes the new area of coal liquefaction, the hydrometallurgic refining of copper, fibre composite materials, radioactive waste disposal, corrosion and the mathematical modelling of industrial processes, which are being accompanied by trials run in industry.

The Department of Mining and Mineral Process Engineering, which moved to new quarters in the Frank A. Forward Building, is looking forward eagerly to completion of the new Coal and Mineral Processing Laboratory, which will provide facilities for teaching and research in fields of importance to Canada. The main objective of the laboratory is to enable the education of engineers and scientists necessary for the development of Western Canadian coal as a fuel and energy resource.

Projects in the applied science faculty's School of Nursing apply to an age continuum from infancy to old age, to patients in institutions and in their homes, to a range of clinical problems (diabetes, cancer, conditions requiring surgery) and to pregnancy and infant feeding.

ARTS. No other faculty in the University offers as wide a range or a greater variety of research than does the Faculty of Arts. Our anthropologists and sociologists are involved with everything from digging up the past in B.C. and abroad to major studies of the resource in-dustries of this province; our economists are studying the Canadian fishing industry, our natural resources and energy problems; our English scholars published books and articles in 1980-81 on such widely divergent topics as Canadian author Margaret Atwood, playwright Henrick Ibsen, early English drama and Jewish writers in North America; geographers were active in the fields of physical, urban and regional geography, including studies of river behavior, climatology, resource and urban development in China, ancient agriculture in Central America and transportation, housing and neighborhood development in Vancouver, work which attracts attention from planning agencies as well as the general public; and a team of political scientists has used grants totalling more than \$200,000 for a project on politics, voting and public opinion in B.C. that will not only enhance our knowledge of B.C. politics but also provide comparative data for analysis of broader theoretical questions about provincial politics in Canada and about the role of policies and issues in electoral contests.

Even within a single department of the faculty, the range and variety of research can be extraordinary. In the Department of Psychology, for example, Dr. Susan Butt is studying several topics related to the psychology of sport; Dr. D. Dutton is concerned with the causes and treatment of domestic violence; Dr. J. Pinel is studying aspects of alcohol abuse; Dr. A.G. Phillips continues his basic work on brain stimulation with implications for the treatment of Parkinson's disease and other motor disorders; Dr. Richard Tees is investigating the development of infant language ability; Dr. Tannis Williams continues her work on the effects of television on

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family life; and Dr. Peter Suedfeld is examining the effects of energy saving via reduced illumination and the clinical uses of reduced stimulation.

The schools associated with the faculty Home Economics, Librarianship and Social Work - exhibit a similar diversity of research endeavors. Home economist Dr. Phyllis Johnson, in collaboration with colleagues in Psychiatry and Social Work, is using a substantial grant for a three-year study on Indonesian refugees in Vancouver; Dr. Harriet Kuhnlein is intensively studying the nutrient composition of foods used by the native people of Canada; and several members of the home economics school have basic research projects directed at the problem of fetal alcohol syndrome. In Librarianship, studies include development of a model for assessing the effectiveness and adequacy of provincial public library legislation, the effectiveness of union catalogues, ethical questions arising out of library reference services, and an investigation of user reactions to microcatalogues. In Social Work, Prof. William Nicholls is engaged, in association with the Vanier Institute of the Family, in a major nationwide study on varying patterns of family life and the social significance of forms of economic support other than salaries and wages; Dr. Dennis Guest was the author of a book, published by the University of B.C. Press in 1980, entitled The Emergence of Social Security in Canada; Dr. Richard Splane continued studies on Canadian and comparative social policy, international social welfare and constitutional issues; the research of Dr. Lawrence Shulman on the communication and relationship skills of family practitioners and how these affect patient compliance continues into its second year in cooperation with the Department of Family Practice in the Faculty of Medicine; Dr. Henry Maas continues his work on life cycles from infancy to old age; and Dr. Anne Furness and Prof. Ben Chud continued work on a major multi-cultural project funded by Health and Welfare Canada which involves social agencies in two Canadian provinces.

COMMERCE AND BUSINESS ADMINI-STRATION. Again, variety and diversity characterize the research activities of faculty members in Commerce and Business Administration.

Researchers in the accounting and management information systems division are engaged in projects relevant to local governments, the oil and gas industry, financial accounting standard bodies, computerized accounting and auditing specialists, lawmakers and systems theorists. In particular, Prof. Richard Mattesich wrote eight papers on inflation accounting in an attempt to prevent the introduction of faulty legislation on accounting for inflation in Canada.

In the finance division, Prof. Phelim Boyle is doing work on optimal risk sharing of value to insurance companies and corporations; Prof. Maurice Levi is working on a comparison of social mobility in Canada and the U.S.; and Prof. Michael Brennan and Dr. E. Schwartz are doing research in the area of regulation. Research in international business includes a study of the regulation of toxic chemicals in the environment; Prof. John Claxton continues his

work on consumer energy research; Prof. Gerald Gorn's research concerns the effect of television advertising and programming on children; and Prof. James Forbes's work has focussed on societal control of marketing boards, which has resulted in the publication of a book entitled Regulation and Intervention in Canadian Agriculture.

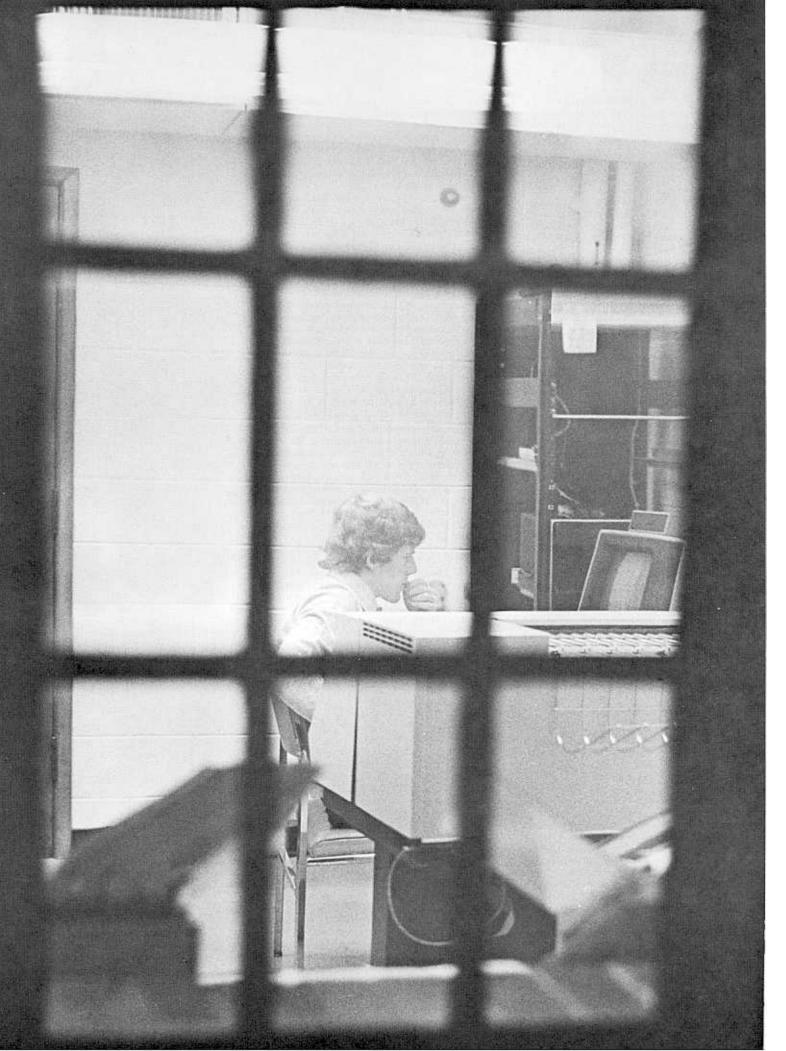
The faculty's policy division has had a very productive research year, including a report on the regulation of toxic chemicals in Canada for the Economic Council of Canada. Other important contributions are reports on the use of economic incentives for energy conservation for Consumer and Corporate Affairs and communication of risk information for Health and Welfare Canada. Studies are also being carried out in the area of international transfer and diffusion of Canadian technology, which should assist Canadian firms in transferring technology in international markets as well as guiding the federal government in developing appropriate policies, incentives and support for such activities. Prof. W.T. Stanbury is studying the legislative development of Canadian competition policy, as well as the issues of price fixing, market sharing and the public interest.

In the transportation division, Dr. Garland Chow is at work on a study assessing the importance of economic regulation on transportation options for freight service to small rural communities. Prof. Trevor Heaver has been studying Canadian shipping policy and potential constraints on rail capacity in western Canada. Work is also being done on logistics management and coal exports, clearly an important issue for B.C. in coming years.

Research in Urban Land Economics includes studies of the effects of rapid transit systems on land values and land use. Other areas of inquiry include neighborhood change and investment behavior, and school tax, property tax and the financing of public schools in B.C.

DENTISTRY. Dean George Beagrie reports that the Faculty of Dentistry now enjoys the highest per capita research support of any dental faculty in Canada. While this is an encouraging development, he adds, it has demonstrated a considerable lack of space for continued expansion of research. The major contributions are in the basic and clinical sciences associated with: 1. Control and measurement of periodontal diseases; 2. Investigations into the etiology of craniofacial anomalies, particularly cleft palate; 3. Investigations of tongue and jaw movement, muscle activity and temporomandibular joint function; and 4. Microbiological and clinical investigations of disease-causing organisms of dental caries and periodontal disease. The present philosophy of the faculty is, wherever possible, to involve multi-disciplinary groups in all research studies.

International reputation has been built up in several of the above areas, Dean Beagrie reports, notably in the neurophysiology group headed by Dr. A.G. Hannam. As a result, the faculty had visiting researchers from Switzerland and Japan in 1980-81 and the prospect of a Swedish investigator in 1982-83 to work with Drs. Barry McBride and Joseph Tonzetich.



In the oral biology department, Dr. Tonzetich is investigating the role of bacterially produced compounds in the etiology of periodontal diesease, work which may lead to an explanation of how such disease is caused and to appropriate treatment procedures; Dr. R. Shah is investigating the effect of various compounds on the development of cleft palate; Dr. Donald Brunette continues his award-winning work on the growth of cells in the periodontum; Dr. McBride is seeking new procedures aimed at blocking the binding of bacteria to body surfaces.

In Oral Medicine, Dr. B. Blasberg is part of an interdisciplinary research group investigating treatment efficacy and outcomes related to pain dysfunction of the masticatory system in association with investigators from clinical psychology and rehabilitation services in the new Acute Care Unit; Dr. C. Price is studying factors influencing the response of dental x-ray films; Dr. T. Gould has found that a substance specially prepared from extracted teeth is a potent inducer of bone growth, which raises the possibility that in future patients may be able to use their own extracted teeth to treat those remaining teeth less seriously affected; and Drs. McBride and J. Silver are assessing the efficacy of various antibiotics for treating potentially life-threatening infections of heart valves.

Other noteworthy research in Orthodontics and Restorative Dentistry includes work on malocclusions by Dr. A. Lowe; the development and prevention of cleft palate by Dr. V. Diewert; and the clinical evaluation of fluoridecontaining restorations by Dr. A. Richardson.

EDUCATION. Research and development activities in the Faculty of Education received external support totalling more than \$2 million in the last fiscal year. Dr. John Andrews, the former dean of the faculty, was named coordinator of a national study of the "state of the art" in research on education, the first comprehensive assessment of the knowledge base of education ever undertaken and an assessment which it is hoped foreshadows increased funding by the Social Sciences and Humanities Research Council in the future.

Some important research contributions made in the past year include the following: Development of proposals for funding research in gerontology; preparation of a program of studies for training in correctional education; counselling studies related to career choices, the easing of racial prejudice in elementary schools and family courts; construction of a solar collector intended for experimental use in secondary schools; a preliminary study of continuing education needs of B.C. home economics teachers; projects related to moral education, gifted children, and hearing-impaired pupils; numerous studies on language education, including evaluations of French programs funded by several school districts; a final report for the governments of Indonesia and Canada on education for the Sulawesi Regional Development Study; computer assisted instruction; and a mathematics assessment for grades 4, 8, 10 and 12 on a grant from the B.C. ministry of education.

Individual scholars in education are making

important contributions to research. Dr. Marvin Lazerson is on a team of internationally known social scientists selected to contribute to Harvard University's definitive Encylopedia of Ethnic Groups in American Life and Dr. J. Donald Wilson's Schooling and Society in 20th-Century British Columbia received the Canadian Historical Association's Certificate of Merit for exceptional contributions to regional history.

Sport scientists in the School of Physical Education and Recreation were awarded 16 grants totalling \$94,600 to undertake work which resulted in eight articles in scholarly edited journals, 11 published abstracts, six articles in technical journals, four provincial and federal reports and 29 other publications. Other research by members of the school's faculty includes the integration of mildly retarded adults into community leisure activities, leisure and popular culture in 19th-century Vancouver and a study of the characteristics of professional municipal park and recreational employees in B.C.

FORESTRY. In spite of severe space shortages (described in greater detail in the section of this report on Capital Financing and New Construction) research continues on a wide variety of important forestry problems.

A grant for a program of distinction from the Universities Council provided a new faculty member, Dr. John Bassman, with support for a study of the physiological basis for growth stagnation in lodgepole pine stands. The extensive stands of this type of tree constitute a very large wood resource in B.C. but a major limitation to management has been the propensity of lodgepole pine to stagnate in growth at high densities following a fire. Determination of the physiological basis of the growth repression is aimed at implementing corrective management technology. Dr. Bassman and post-doctoral fellow Dr. John Crane are supported in this work by grants from the provincial ministry of forests and the B.C. Science Council.

Dr. Hamish Kimmins and University research fellow Dr. Michael Feller continued development work on FORCYTE, a computer simulation model capable of predicting forest productivity given different levels of management. There is rapidly growing demand for demonstrations of the model by government agencies, educational institutions and the forest industry.

Dr. Fred Bunnell, research associate Dr. Chris Shank and graduate students continued research on the influence of forest management operations on wildlife habitat and a foraging theory for forest ruminants. Dr. Robert Woodham, who holds a joint appointment in the Department of Computer Science, together with Dr. Alan Mackworth of that department, is developing a computer system for processing satellite information into imagery useful in forest management decision making.

GRADUATE STUDIES. The Faculty of Graduate Studies performs a University-wide administrative role concerned with all graduate programs as well as a number of institutes, schools and centres. Enrolment in the faculty totalled 3,700 in the 1980-81 winter session.

OPPOSITE

Pondering a problem on a computer display screen is this lone, nighttime inhabitant of a chemistry department research laboratory.

A research highlight of the year was completion by the Westwater Research Centre of a major study for the Economic Council of Canada on Environmental Regulation in Canada. The centre is also engaged in a series of studies on water management in the Yukon, energy approvals in B.C., and a major training project in management of water quality and aquatic resources on Lake Titicaca in Peru.

Major studies in the Institute of Animal Resource Ecology include a continuing project — the most prolonged and intensive experiment ever launched on a phenomenon of worldwide interest — on the intriguing question of why some northern animals such as lemmings or snowshoe hares have spectacular cycles of abundance. The study is being carried out in the Yukon.

Predator-prey relationships are the subject of study by a number of IARE researchers: the effects on salmon of human predators by R. Hilborn; general patterns of predator-prey relationships by C.S. Holling, who has a book on the topic in preparation; and a number of studies involving specific animals and insects.

Other studies in the institute relate to natural resource topics, including genetic diversity in different populations of coho salmon, the effects of log storage on juvenile salmon in the Fraser River estuary and a study of impediments to policy formation in the field of natural resources in Canada.

In the Institute of International Relations, 27 faculty members and research associates from six different disciplines are involved in research studies related to the project on Canada and international trade, which is funded by a \$275,000 grant from the Donner Canadian Foundation. In January, 1981, the institute received a five-year renewal of a grant to promote research and teaching in international strategic and defence studies from the Department of Northern Defence. The grant of \$300,000 over five years will support research on the international security ramifications of trade and strategic minerals.

The work of researchers in the School of Community and Regional Planning continued to attract wide interest. The work of Dr. William Rees on Beaufort Sea developments and regional planning for the Northwest Territories received national attention by being cited in academic literature and in debates in the House of Commons in Ottawa. Other interesting work, all of which has been published in one form or another, has been carried out by Clyde Weaver on regional development planning, Dr. Michael Seelig on urban design and heritage conservation in city planning, Dr. Michael Poulton on urban street systems, Dr. Craig Davis on planning for the service sector of the urban economy, and Prof. Henry Hightower, who prepared a major review of the state of the art in urban recreation planning.

The graduate studies faculty's soil dynamics group was set up in 1978 to facilitate the development of research in the geotechnical aspects of earthquake and ocean engineering. In 1979, the area of environmental fluid dynamics was added to study the dispersal of pollutants in air and water. The group undertakes research for industry and governments in

addition to a basic research program, which includes the prediction of ground motions during earthquakes and the seismic response of nuclear power plants in the field of earthquake engineering; work on the design and performance of off-shore platforms and pipelines and drilling and production islands in ocean engineering; and the development of techniques for analysis of the dispersion of pollutants as well as the prediction of the effects of waste heat discharges from power plants under the heading of environmental fluid dynamics. A number of computer programs have been developed by the group for predictive purposes, supported by grants from industry and government and are examples of co-operative research and development that places the University on the "cutting edge" of research and development and clearly demonstrates the worthwhile returns on investment in research.

The Institute of Applied Mathematics and Statistics continues to foster research on analytical, numerical and statistical methodology and their application to a variety of disciplines, including ecology, forestry, medicine, oceanography, engineering and the life, social and physical sciences. Early in the academic year, a dean's review committee reported favorably on the institute's activities over the previous decade and recommended that formal membership be conferred on active participants in the institute. As a result, a first group of 20 faculty members from Mathematics and Computer Science were named as institute members by the dean of Graduate Studies. This group includes two Guggenheim fellows, one Sloan fellow, six Killam research fellows and one Jacob Biely Faculty Research Prize winner.

LAW. The fruits of research in Law continue to be reflected in the large number of publications by faculty members, who were the authors of more than 70 papers, book chapters and journal articles in the academic year. These covered subjects as diverse as human rights legislation, criminal legal aid services, matrimonial property legislation, the individual and state security, the child as a participant in divorce proceedings, the law of the sea and aboriginal people and the Canadian Constitution. Faculty members make a special contribution to a number of fields of law, including constitutional law (Lysyk and Elliot), private rights (Burns and Vaver), property law (McClean and Todd), legal philosophy (Smith), labor law (Hickling) and B.C. practice (Taylor). Twelve members of the UBC faculty have contributed articles on Canadian law for publication in a Japanese legal periodical and a major research grant application has been prepared for a study of comparative aspects of Canadian and Japanese law.

MEDICINE. The research activities of the Faculty of Medicine are so diverse and varied that they could easily be the subject of a separate report. They cover the full range of basic studies on such things as nucleic acids by Dr. Michael Smith of Biochemistry, who received nearly \$150,000 for work in this area, to grants for facilities for research on multiple sclerosis and other neurological diseases. This latter project was supported with a \$225,000

grant from the Mr. and Mrs. P.A. Woodward's Foundation.

The opening of the new Walter Koerner Acute Care Unit, the final unit in the Health Sciences Centre Hospital, will further expand the research activities of the medical faculty and enable it to form closer links with the other health sciences disciplines in the area of research. For example, a number of health science departments and faculties are working closely in preparation for installation in the Acute Care Unit of a Positron Emission Tomograph (PET), a device which makes it possible to take a three-dimensional picture of the brain without causing the patient any discomfort. This research tool will be used for both diagnostic and treatment purposes as well as for research on such problems as stroke, epilepsy, Parkinson's disease, multiple sclerosis and a number of conditions characterized by emotional disorders. This project involves cooperation with TRIUMF, the meson facility operated by four western Canadian universities located on the UBC campus, which will produce the short-lived radioisotopes necessary for the PET project.

PHARMACEUTICAL SCIENCES. Research in this faculty continues to expand in terms of the number of students enrolled for the Master of Science and Doctor of Philosophy degree programs, its ability to attract post-doctoral fellows and the fostering of both research and service through such projects as the Clinical Pharmacy and Pharmacology Demonstration Unit, the Drug Utilization Review project and the Drug and Poison Information Centre. I was impressed, in the report submitted by Dean Bernard Riedel, by the number of projects in Pharmaceutical Sciences which involve co-operation with other health sciences departments and faculties. These include drugs used in the treatment of psoriasis, in association with medical microbiology and dermatology; the use of valproic acid in the treatment of epileptic children, with Medicine; and research in methyl mercury contamination and the formation of stones in the salivary glands, in association with Dentistry. I have already mentioned under Medicine the steps that are being taken to organize the PET project. Pharmaceutical Sciences is involved in this also. Dean Riedel also draws attention to the research of Prof. John McNeill, of his faculty, who is investigating the effects of drugs and hormones on the heart. Concurrently, he is studying the effect of the diabetic state on heart function.

Despite its rather small size, Pharmaceutical Sciences was the recipient of more than \$600,000 in the last fiscal year from granting agencies. Faculty members were the authors of 97 published papers.

In his capacity as Co-ordinator of Health Sciences, Dean Riedel reported on the research and development activities in the various areas of the Health Sciences Centre of the University. The Division of Health Services is sponsoring research related to paramedic ambulance service in dealing with cardiac emergencies, a model plan for provision of perinatal services and estimation of extended care bed needs in the Greater Vancouver Regional District. The

Health Manpower Research Unit has clearly been established as a resource to the ministry of health of the B.C. government and is called on increasingly to initiate projects or provide resource assistance to public committees within the ministry. The Division of Health Systems sponsors a variety of research related to fitness, health facilities and lifestyle education, which might just as easily be reported under the heading of public service by the University. Another major commitment of the unit headed by Dean Riedel centres on continuing education, which is reported on in another major section of this report.

SCIENCE. The Faculty of Science continues to be the centre of most of the basic or pure research activities of the University. I have no hesitation in saying that despite some very real shortcomings in space and facilities for research and teaching, most departments in the faculty are as good as any in North America and some have won international reputations, as is evidenced by their ability to attract research grants and graduate students.

In this connection, I was interested in a report prepared by the Canadian Geoscience Council, which investigated all aspects of teaching and research in 40 geology and geophysics departments in Canadian universities. The study shows that UBC has one of the largest geology and geophysics undergraduate enrolments in Canada, one of the larger graduate enrolments, and that in 1980-81 UBC ranked third behind Toronto and Alberta in the total amount of money granted for research in these two disciplines. The council's investigating group noted that of the 77 geophysicists in Canadian universities, 61 per cent received their doctorates in Canada, chiefly at Toronto and British Columbia; that some of the brightest students in physics are being attracted to the discipline of geophysics and that UBC is one of the leaders in supplying service to the oil in-dustry in Canada. The report noted that UBC, because of its long and successful ties with industry and its reputation for quality, attracts large numbers of graduate students and that UBC was one of the most frequently mentioned universities in connection with sponsored theses and joint studies.

Foreign academics, asked by the council to assess work by our teachers and researchers, had high praise for UBC endeavors in the fields of geophysics, geochronology and isotope geology, mineralogy, and permafrost and preglacial research. Of UBC studies in paleontology and biostratigraphy, the report quoted a U.S. authority as saying that the Department of Botany "would be competitive with any institutions in the U.S." It is always a reassuring and pleasant experience to find outside support for claims of the excellence we often take for granted in the academic life of the University.

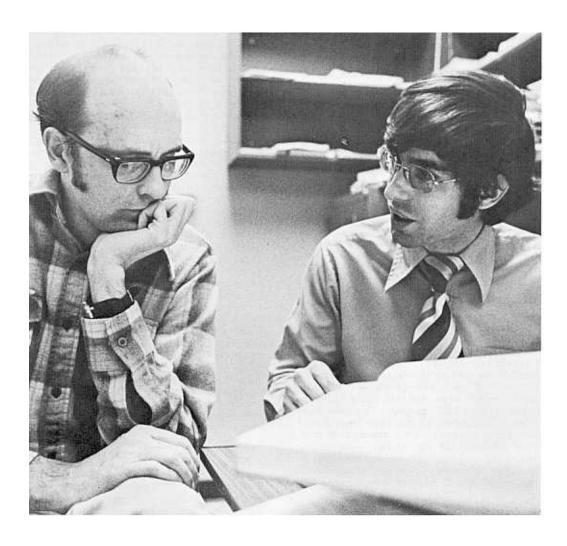
Dean Cyril Finnegan has cited the following as indicative of the high quality of research that continues in the faculty he heads.

Drs. W.N. Hardy and A.J. Berlinsky of the physics department have sustained gaseous

hydrogen in stable state — the first time this phenomenon has ever been recorded. Two members of the same department, Dr. G. Fahlman and Dr. P. Gregory, have discovered a new celestial x-ray source and another physicist, Dr. J. Meyer, has made a significant contribution to understanding controlled fusion power. Dr. Julia Levy of Microbiology continues her work on inexpensive diagnostic tests for cancers and four other members of the same department — Drs. D.G. Kilburn, B.C. McBride, R.C. Miller and R.A.J. Warren — have been co-operating in genetic engineering research aimed at converting cellulose to glucose. The new Department of Oceanography continues to

foster an active research program highlighted by studies of the Fraser estuary, marine mineral deposits and possible drugs from marine organisms. In Mathematics, the work of Dr. Colin Clark in bio-economics and that of Dr. Robert Miura in neurobiology has gained widespread recognition as has that of Dr. Fred Wan on the economics of exhaustible resources. In the last academic year, Cambridge University Press has published The Evolution of Air Breathing in Vertebrates, by Prof. D.J. Randall of Zoology, and recent work by Prof. J.E. Phillips of the same department has resulted in reconsideration in the scientific community of concepts about membrane transport.

Typical of the scholars who have gained UBC a reputation as a major centre for basic and applied research in the sciences and other fields are solid state physicists Drs. Walter Hardy, left, and John Berlinsky.



The University Library

The University's Library system is the second largest in Canada. It provides essential services in support of UBC's teaching and research program and also serves as a resource for other institutions and for industry and the professions in all parts of the province because of the breadth and depth of its collections.

In my last report, I outlined the steps taken to look into the future space requirements of the Library. The report which I placed before Senate concluded that all the space in the existing system would be full in less than a decade. The report recommended that an immediate start be made on a building program to create more room for the normal growth of book and other collections and to provide adequate space for

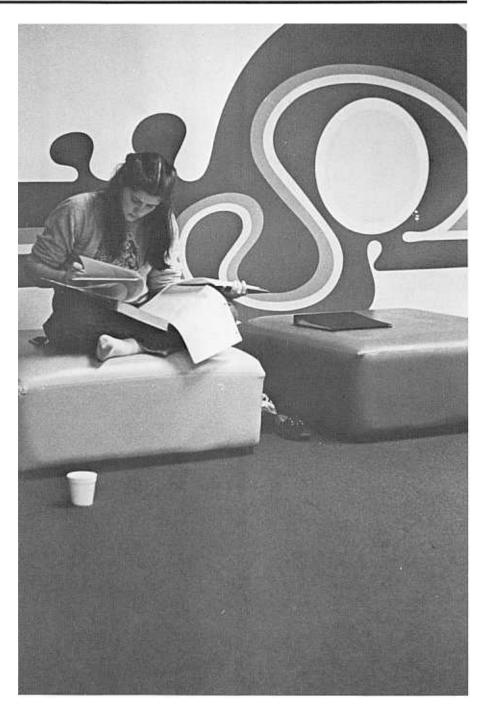
some other library functions.

A series of technical studies was carried out in the summer of 1980 and presented to Senate in the fall. The plan approved by Senate and adopted by the Board of Governors early in 1981 provides for a major redevelopment scheme for the Main Library building to accommodate Library collections and new growth anticipated for the next 10 to 15 years. The proposal would create study space for more than 1,000 users and would cost an estimated \$49 million.

The plan provides for construction of two new wings to link the Main Library with the nearby Sedgewick Library under the Main Mall. This would be followed by a phased demolition of the existing north and south wings of the Main Library as well as the book stacks on the east face of the building. Each of these areas would then be rebuilt to provide six floors of more efficient and useable space for the book collections. The original greystone section of the Main Library, built in 1924-25, would be retained and renovated as a "heritage" unit. The proposals have been forwarded to the Universities Council of B.C. with a request for funds to proceed.

At its meeting in May, 1981, the Board of Governors reluctantly accepted the resignation of Basil Stuart-Stubbs, University Librarian since 1964, who was appointed director of UBC's School of Librarianship on the retirement of Prof. Roy Stokes on June 30, 1981. I have no hesitation in saying that for 17 years UBC was singularly fortunate in having a Librarian with the vision and foresight of Prof. Stuart-Stubbs. In that period, he presided over a massive expansion of Library facilities and materials. During his tenure, the collection of physical volumes grew from just under 614,000 to more than 2.1 million and major new facilities constructed in the same period include the Woodward Biomedical Library, the Sedgewick Library and the Law Library. In addition, UBC pioneered the use of automated systems for various Library operations during Mr. Stuart-Stubbs's term as University Librarian.

His new post offers him an opportunity to participate in the education and training of librarians who will be in the forefront of the

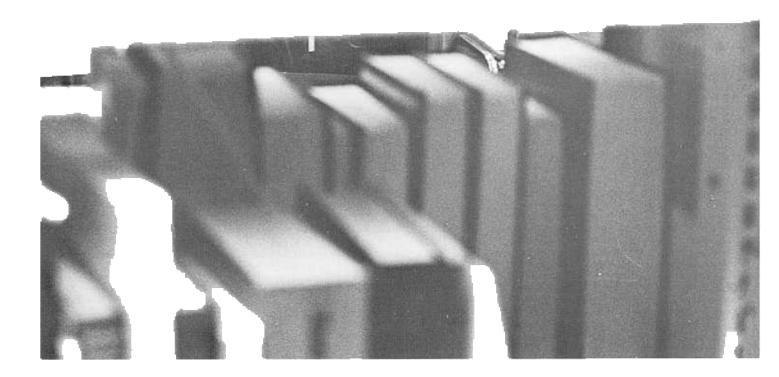


UBC's library system, the second largest in Canada, provides essential services for teaching and research in a variety of settings, including the informal atmosphere of the Sedgewick Library for undergraduates.





An informal student conference in a UBC library.



demanding task of coping with the so-called information explosion. The special task of library schools everywhere will be to develop skilled men and women who are capable of utilizing new technology to provide ready access to information for the general public and specialized groups in universities and the professions.

I know that I speak on behalf of the entire University community in expressing publicly to Mr. Stuart-Stubbs the gratitude of the University for his singular contributions to the teaching and research functions at UBC. Our best wishes go with him for success in his new post.

In the 1980-81 academic year, the four principal concerns of the Library were the maintenance of book and serials collections in the face of inflation, conversion of the catalogue of library holdings to machine-readable form, participation in the scheme to produce a B.C. Union Catalogue of all library holdings in the province and the maintenance of services to users of the UBC Library system.

The Library is continuing with a major project, a complete review and assessment of collections policies and practices. Related to this is another major concern - the effect that inflation and the weakened purchasing power of the devaluated Canadian dollar is having on the ability of the Library to maintain and enhance its collection of books and other materials. The Board of Governors approved a supplementary appropriation during the academic year in order that the Library could continue to acquire the books and journals needed to maintain its reputation as a major centre for research and scholarship and to continue its services to governments, industry and the professions. The examination and assessment of collections matters may result in a revision of policies which have governed collections management for 15 years.

The Library system continued to serve a wide spectrum of users in 1980-81. In addition to its chief users, the faculty and students of UBC, it served other post-secondary institutions, persons representing government and industry and members of the general public. More than 50,000 reference questions were answered for off-campus users and inter-library loans to other institutions totalled 21,245. Loans from divisions of the Main Library numbered 733,022, and branches and reading rooms recorded 1,076,226 loans. When borrowings of recordings and inter-library loans are added, the total circulation activity for the year is 2,220,631 loans.

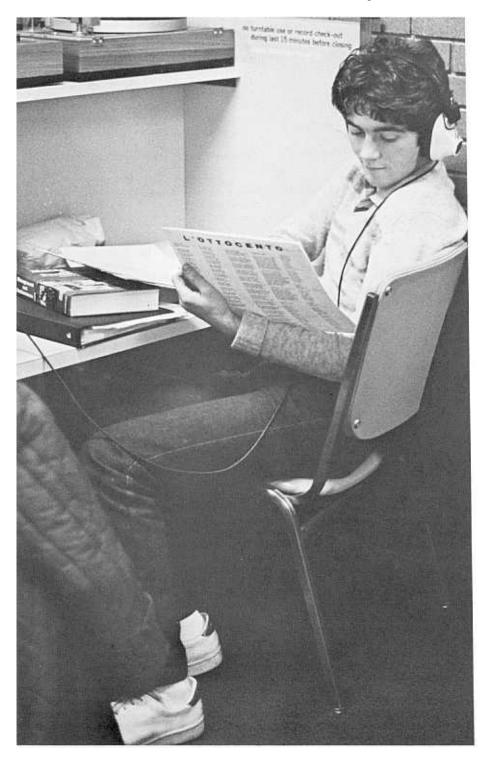
Reference statistics indicate that 179,793 questions were answered in the Main Library. In the branches and reading rooms, 205,692 questions were answered, for a total of 385,485 in the library system.

The Extension Library, UBC's principal vehicle for supplying library materials to students taking courses outside the Greater Vancouver area, provided direct service to students enrolled for 53 correspondence courses. These students borrowed nearly 3,000 items and made frequent use of long-distance telephone service to request assistance with their library problems. The Extension Library also provided on-

site collections to support 50 courses offered at off-campus locations.

Net additions to the collection of bound volumes totalled 109,558 in the 1980-81 fiscal year, bringing the total count at year-end to 2,217,021. Equivalent volumes of material in other formats — documents, microforms, maps, records, etc. — were 2,677,000. Including manuscript collections, the total collection now amounts to five million pieces.

Many of the 35,000 music and spoken-word records in the Wilson Recordings Collection of the UBC Library are used by students to supplement classroom assignments.



Public Service

I am always deeply impressed, in reading the material submitted for this report by the deans of the University's faculties, with the ways in which our teaching and research staff make their expertise and abilities available for public service. I use the term public service in this case to indicate activities by faculty members that fall outside their basic duties as teachers and researchers or participants in continuing education programs sponsored by the University. Many levels of society, including governments, foundations, agencies which make grants to the University and other organizations concerned with the public good have cause to be grateful to our faculty for the extensive and often unpaid efforts they make to improve the quality of life for all our citizens. In what follows, I have selected from the reports of the deans activities that reflect this important function.

AGRICULTURAL SCIENCES. Dean Warren Kitts has provided a lengthy list of faculty members and the companies which made use of faculty expertise in the last academic year. These included: Dr. T.M. Ballard, who advised Syncrude Canada Ltd. on an oil sands reclamation study review; Dr. R.R. Barichello, who advised the Economic Council of Canada on Canadian dairy industry regulation; Dr. D.B. Bragg, who provided expert consultations for the B.C. Feed Manufacturers and the B.C. Poultry Association; Dr. G. Eaton, who advised B.C. Tree Fruits Ltd. on fruit nutrition; Dr. D.D. Paterson, who was a consultant in the preparation of urban landscape design guidelines for B.C. Place; Dr. V.C. Runeckles, who was a consultant to B.C. Hydro and Westcoast Transmission on the effect of air pollutants on plants; and Dr. R.M. Tait, who prepared a

Poultry scientist Prof. Darrell Bragg is typical of many hundreds of UBC faculty members who provide consulting services annually to British Columbia companies and community and cultural organizations.



report for a law firm in connection with a court case.

The faculty also provides important direct services to the public through its Food Information Service (2,500 requests in 1980-81), its plant and garden service called the Hortline and tours of its Dairy Cattle Teaching and Research Unit, which this year had 3,500 visitors.

APPLIED SCIENCE. Dean Martin Wedepohl, the head of the faculty, was named to the Board of Directors of the B.C. Hydro and Power Authority and chairs the board's energy committee. Prof. W.K. Oldham of Civil Engineering is the only B.C. member on a task force on environmental protection techniques of the federal Ministry of State for Science and Technology. Dr. Axel Meisen is a member of the Hazardous Wastes Committee for B.C. In faculty's School of Nursing, faculty members introduced stress reduction programs for senior citizens, people recovering from strokes and families in which child abuse is a problem. Others serve on advisory committees for nursing programs at other universities and regional colleges in B.C. One member of the school chairs a major nursing advisory committee for the new Grace Hospital and another serves on the Board of the B.C. Mental Retardation Institute.

ARTS. Members of the faculty's Department of Anthropology and Sociology contribute as consultants to a variety of associations dealing with elderly people, women, human rights, environmental hazards, urban planning, teenage delinquency and drug abuse. Dr. Hector Williams and Prof. A.J. Podlecki of the Department of Classics were influential in the founding of Pharos, the Canadian-Hellenic cultural society of Vancouver. Prof. A.D. Scott of the economics department is, among other things, an advisor to the Ontario study of the impact of acid rain, a growing problem in Canada.

Several members of the faculty have made their expertise available provincially and federally in providing advice on proposed changes in the Canadian constitution. Prof. Ronald Shearer of Economics, Prof. Alan Cairns of Political Science and Prof. Charles Bourne of the Faculty of Law were all members of the B.C. government's advisory committee to the cabinet on the constitution. Prof. Cairns was named academic consultant to the Federal-Provincial Relations Office in Ottawa, which involved attendance at all constitutional negotiations in Ottawa.

In the Department of Geography, Prof. J. Lewis Robinson is on the advisory planning committee for the University Endowment Lands; Prof. Walter Hardwick serves as president of the Knowledge Network of the West Communications Authority and chairs a federal-provincial task force on satellites in education; Prof. J. Ross Mackay serves on the Beaufort Sea Commission and Dr. John Stager is a member of the Norman Wells Pipeline Commission.

Historian Dr. Peter Moogk identified an important Nazi photographic archive found in Vancouver and had it forwarded to the Netherlands State Institute for War Documentation, and his departmental colleague, Prof. John Conway, continues to serve as president of the Tibetan Refugee Aid Society. Members of the Department of Psychology provided consultative services to a variety of community and governmental groups; Dr. Donald Dutton, for example, has taken part in the establishment of a therapy group for assaultive males, jointly funded by the federal and provincial governments.

In the section of this report on Continuing Education, I have described in greater detail the activities of the Museum of Anthropology, the Frederic Wood Theatre, the Department of Music and the Fine Arts Gallery, each of which enlivens the cultural life of the campus and

draws the public to Point Grey.

Other notable contributions by members of the arts faculty included the following: the appointment of Norman Young of the Department of Theatre to chair the annual B.C. Arts Festival; preparation of a report for the Canadian Dietetic Association on manpower needs for dieticians in Canada by Dr. Harriet Kuhnlein of the School of Home Economics; consultation services by Lois Bewley of the School of Librarianship to a management study of the Fraser Valley Regional Library, to Shaughnessy Hospital on its library for patients and to the Alberta Library Board on amendments to the Alberta Public Library Act; supervision of a major sector of the annual fundraising campaign of the Vancouver Symphony by Prof. George Hougham of the School of Social Work; and recognition of Dr. Richard Splane of Social Work by the Greater Van-couver Convention and Visitors' Bureau as fund-raiser and co-ordinator of the Social Welfare Conferences scheduled to come to Vancouver in 1984.

COMMERCE AND BUSINESS ADMINI-STRATION. Numerous members of the commerce faculty serve on the boards of professional and other organizations: Dr. Mark Thompson for the Canadian Association of University Teachers; Dr. Peter Frost and Prof. C.L. Mitchell for the Academy of Management; Dean Peter Lusztig for the Vancouver General Hospital Foundation; and Associate Dean Michael Goldberg and Prof. George Gau for the American Real Estate and Urban Economics Association. Prof. Goldberg is also a member of the Vancouver Economic Advisory Commission and chairman of the Urban Activity Systems Committee of the U.S. Transportation Research

Members of the transportation division of the faculty have regular contact with the community, in part through publication of the Logistics and Transportation Review. Prof. Karl Ruppenthal assisted the organizers of Transpo '86 in preparing the submission which was sent to the International Bureau of Expositions in Paris. He also served as advisor to the government of Alberta in connection with submissions made to a meeting of the western provincial premiers relating to transportation.

Prof. W.T. Stanbury was consultant to the

federal Bureau of Competition Policy of the Department of Consumer and Corporate Affairs regarding revisions to the Combines Investigation Act as well as completing a research project for the Department of Justice on penalties and remedies in competition policy cases.

DENTISTRY. Public service projects in Dentistry included services provided by referral centres, located at the Vancouver General Hospital and in the UBC faculty, for diseases of the mucosal surfaces of the oral cavity and the treatment of atypical facial pain and disorders of jaw movement. The summer Dental Clinic again provided services to Vancouver district children, with third-year dental and secondyear dental hygiene students providing treatment under the direction of faculty members. Students have also been involved in community dental clinics at UBC and in the City of Vancouver and each year students and faculty give lectures and presentations on dental care to high school and community groups.

EDUCATION. The many and varied activities of faculty members in Éducation included the following. Dr. Walter Hartrick supervised a study of the organization of the Hope School District; Dr. Gordon Selman chairs both the B.C. Ministry of Education advisory committee on adult and continuing education and the education sub-committee of the Canadian Commission for UNESCO; Dr. Shirley Wong was appointed to the Metric Commission of Canada; and Dr. David Kendall became president of the Alexander Graham Bell Association for the Deaf, the largest international organization in the field of deafness.

A number of language education teachers at UBC - Ronald Jobe, Wendy Sutton and Marion Ralston — organized the Round Table on Children's Literature, which featured discussions between nine authors of children's books and teachers and librarians throughout the Lower Mainland. Visual and performing arts teachers in Education sit on the National Capital Commission, the Manitoba Arts Council, the executive of the B.C. Music Education Association, the B.C. Art Teachers' Association and the B.C. Art Therapy Association.

Members of the teaching staff of the School of Physical Education serve as coaches and as executive members of sport governing bodies and offer technical expertise through a variety of clinics, seminars and coaching certification programs. The offerings of UBC's Community Sports Services program has steadily expanded; the 3,000 who participated this year represent an 81 per cent increase since 1979. The program is a spring and summer series of sports training programs for young people and adults in a wide range of sports, including basketball, canoeing and kayaking, dance, sailing, fencing, soccer and swimming.

GRADUATE STUDIES. Prof. Henry Hightower of the School of Community and Regional Planning has a long association with the United Way and has continued to aid them in the field of social planning. In the same school, Prof. Setty Pendakur is chairman of the citizen's advisory board to the National Parole Service in Vancouver, Dr. Michael Seelig has served as chairman of the Canadian Professors for Peace in the Middle East, and Prof. Brahm



Lectures on forest policy by Prof. Peter Pearse were videotaped in campus television studio for use in offcampus course offered by UBC's Faculty of Forestry.

Wiesman has served as a member of the West Vancouver Planning Commission and continues as chairman of the Association of Urban and Regional Planning Programs at Canadian Universities.

Members of the Westwater Research Centre, aside from their basic research duties, are involved in a wide range of activities, including the following: Prof. Andrew Thompson is chairman of the Fraser River Estuary Forum, Tony Dorcey sits on the management committee of the Canada West Foundation for the Study of Water Resources in Western Canada and Dr. Kenneth Hall was a participant in workshops sponsored by the federal Environmental Assessment Review Office. Prof. Tom Northcote of Westwater and the Institute of Animal Resource Ecology wrote a review of the effect of forest fires on aquatic ecosystems for the federal Department of Indian and Northern Affairs.

Other members of the IARE served on the Great Lakes Fishery Commission's board of technical experts (Prof. Carl Walters), mounted a project on communication of environmental risk assessment for the federal Department of Health and Welfare (Prof. I. Vertinsky) and visited Bangladesh to advise on establishment of a fishery research program (Prof. C.C. Lindsey).

FORESTRY. For the fifth year in a row, Prof. Oscar Sziklai chaired the UBC Speakers Bureau, operated by the UBC Alumni Association, which provided 460 speakers from UBC faculties for talks to service clubs and other community groups. Dr. John McLean served on committees concerned with forest protection, including the B.C. Forest Pest Review Committee and the Douglas Fir Tussock Moth Committee. Dean Joseph Gardner was re-elected to the board of the FORINTEK Canada Corp. and Prof. Peter Pearse undertook the difficult task of preparing a study of west coast fisheries policy for the federal government.

With the assistance of government grants, the University Research Forest near Haney in the Fraser Valley employed a number of physically and mentally handicapped persons in a special effort to coincide with the UN International Year of Disabled Persons. The program was a distinct success and as a result of their activities in the forest, a number of the participants have secured independent employment. Use of the forest by the public and schools for recreation and outdoor education continues to grow.

LAW. Typical of the activities of faculty members in organizing conferences and workshops was that of associate professor James Taylor, who played a central role in organizing a workshop in February, 1981, on the Legal Rights of Mentally Handicapped Persons under the joint sponsorship of the Faculty of Law and the B.C. Mental Retardation Institute. W.W. Black was a member of the executive of the B.C. Civil Liberties Union; Prof. Joost Blom was a member of the governing board of the B.C. Continuing Legal Education Society; David S. Cohen chaired the advocacy committee of the B.C. Consumers' Association; Prof. John Hogarth represented the eight provinces policed by the RCMP in negotiations with the federal government concerning new contracts for the provision of provincial and municipal policing services; Dean Kenneth Lysyk chaired the Committee of Canadian Law Deans; Prof. Donald MacDougall sat on the advisory committee on children and youth of the B.C. Human Rights Commission; Prof. A.F. Sheppard was a commissioner on the Land Reform Commission of B.C., and Dr. David Vaver was the representative from B.C. on the Uniform Law Conference of Canada's Sale of Goods Reform Com-

MEDICINE. The Department of Medical Genetics of this faculty has developed a birth defects monitor which gives early warning of any unusual increase in congenital anomalies in any area of the province. This will be a valuable resource when questions of exposure of a particular community to a possible cancer-causing agent have to be answered.

In the section of this report on Teaching and Curriculum, I outlined the nature and function of the new Division of Sports Medicine in the Department of Family Practice in the medical faculty. Associated with this development is a new Sports Medicine Clinic, located in the John Owen Pavilion in Thunderbird Park, which serves as a research and treatment centre for individuals who have sustained sports injuries. The expert staff there are highly qualified to provide medical services for injured athletes who are referred to the clinic. Surgeons associated with the centre use the facilities in the new campus acute care unit and in other Lower Mainland hospitals for operations, where necessary

In the Department of Psychiatry, Dr. Anthony Marcus has been psychiatric consultant to the RCMP Serious Crimes Division and to the homicide division of the Vancouver Police Force with respect to certain unsolved crimes, and Dr. S. Penfold of the same department is a member of the federal task force on child mental health organized by the Department of Health and Welfare.



Long-time UBC faculty member Prof. Nathan Divinsky is a popular mathematics teacher and an alderman of the City of Vancouver.

The School of Rehabilitation Medicine had a special interest in 1981 because of it having been declared the International Year of Disabled Persons by the United Nations. (Paul Thiele, who is director of the University's Crane Library for the blind, was a member of the provincial co-ordinating committee for events associated with the year.)

The UBC school provided special documents, information and testimony on the need for rehabilitation services and education to the Special Committee on the Disabled and Handicapped of the federal House of Commons. The Municipality of Burnaby was assisted by the school in an assessment of the accessibility of its parks and recreation facilities for the handicapped, which resulted in modifications to Burnaby Lake Park. This assistance will continue in 1981 and beyond under the direction of Susan Ryan. Dr. Peter Graystone and Mrs. Ryan helped the Social Planning and Review Committee of B.C. plan and organize "Access '81" to carry out projects throughout the year focussing on human, legal and medical rights as well as housing, employment, recreation and attitudes as related to disabled persons. An Access '81 project implemented by Dr. Graystone and Mrs. Ryan was an exhibit and demonstration specifically designed to make B.C. architects sensitive to the needs of the handicapped.

PHARMACEUTICAL SCIENCES. Drs. James Orr and Frank Abbott worked in association with the concerned parents of the B.C. Epilepsy Group; and Dr. Abbott performs drug analysis for physicians, pharmacists and the public on a regular basis and also serves as a consultant on the B.C. Alcohol and Drug Commission. Dr. Keith McErlane was a World Health Organization consultant to Cuba, ran a training school for Cubans on detecting impurities in drugs, and serves as a member of the College of Pharmacists Drug Advisory Committee. Prof. Basil Roufogalis is a consultant to the Vancouver Aquarium on parasitic infections in

sharks; and Prof. Finlay Morrison serves on the legislative committee of the College of Pharmacists and is on the Board of Governors of the Vancouver School of Theology.

SCIENCE. The University was the host in the academic year to a joint meeting of the Canadian Botanical Association and the American Botanical Society, attended by more than 1,200 scientists and organized by Drs. J.R. Stein and I.E.P. Taylor. A similar number of scientists and mathematicians were at UBC in the summer of 1981 for the International Joint Conference on Artificial Intelligence, which was chaired locally by Dr. Richard Rosenberg of Computer Science.

Faculty members in Geological Sciences continue to act as resource persons for the provincial and federal governments and for public organizations on such topics as volcanoes, erosion, mining, oil exploration, coal resources and other aspects of geology. More than 3,000 persons visited the Department of Geophysics and Astronomy for instruction and assistance provided by the department's new curator, David Vogt. He is supervising plans for installation of a new and more powerful telescope to be mounted on the roof of the department's building in the fall of 1981.

Prof. Nathan Divinsky of Mathematics serves as an alderman of the City of Vancouver and Prof. R.W. Burling of the new Department of Oceanography has been appointed by the federal Ministry of Fisheries to a scientific review panel on Alice Arm.

This list of faculty members who are performing valuable public services is far from complete; I hope, however, that it has been representative enough to indicate the depth and breadth of this important University activity. Public service projects carried out by our students during the 1980-81 academic year are described in detail in the section of this report dealing with the Student Body.

Summary of Revenue and Expenditure

(Excluding Capital Additions to Endowment, Student Loan and Capital Development Funds)

April 1, 1980 to March 31, 1981

	GENERAL FUNDS		TRUST FUNDS		TOTAL		1979-80	
REVENUE Province of British Columbia		Per Cent	For Specific Purposes	Per Cent		Per Cent		Per Cent
Operating Grant	\$143,323,783	86.8	\$ 3,000,000	5.5	\$146,323,783	66.6	\$133,202,842	67.8
Canada — Museum of								
Anthropology Grant	200,000	0.1		_	200,000	0.1	200,000	0.1
Student Fees	18,120,808	11.0	_	-	18,120,808	8.2	16,420,318	8.4
Investment Income	3,361,714	2.0	5,187,706	9.5	8,549,420	3.9	6,922,585	3.5
Sponsored Research	-	_	36,250,506	66.4	36,250,506	16.5	29,384,454	14.9
Gifts, Grants and Bequests	_	_	10,145,030	18.6	10,145,030	4.6	10,187,780	5.2
Miscellaneous	205,957	0.1			205,957	0.1	166,178	0.1
	\$165,212,262	100.0	<u>\$54,583,242</u>	<u>100.0</u>	\$219,795,504	100.0	<u>\$196,484,157</u>	100.0
EXPENDITURE								
Academic	\$121,924,357	73.8	\$10,616,466	19.4	\$132,540,823	60.3	\$117,106,626	59.6
Libraries	13,367,613	8.1	926,888	1.7	14,294,501	6.5	12,543,830	6.4
Sponsored Research	(635,917)		33,836,465	62.0	33,200,548	15.1	27,233,587	13.9
Student Services	2,287,056	1.4	706,151	1.3	2,993,207	1.4	2,799,272	1.4
Scholarships & Bursaries	1,702,763	1.0	2,813,108	5.2	4,515,871	2.0	4,166,656	2.1
Administration	8,669,063	5.3	166,610	0.3	8,835,673	4.0	7,842,892	4.0
Plant Maintenance	18,371,764	11.1	_	· <u></u>	18,371,764	8.4	16,309,047	8.3
Renovations & Alterations	1,973,476	1.2		_	1,973,476	0.9	587,808	0.3
General Expense	612,462	0.4	_	_	612,462	0.3	471,687	0.2
Ancillary Enterprises	86,697		<u> </u>		<u>86,697</u>		$\underline{\qquad (7,207)}$	
, ,	\$168,359,334	101.9	49,065,688	89.9	217,425,022	98.9	189,054,198	96.2
EXCESS OF REVENUE OVER 1	EXPENDITURE							
 General Purposes 	\$(3,147,072)	(1.9)	\$ —		\$ (3,147,072)	(1.4)	\$ 2,150,490	1.1
- Specific Purposes			<u>5,517,554</u>	10.1	<u>5,517,554</u>	2.5	5,279,469	2.7
	\$165,212,262	100.0	\$54,583,242	100.0	\$219,795,504	100.0	\$196,484,157	100.0

Certain 1979-80 figures have been restated in order to conform with the Financial Statement presentation adopted in 1980-81, with no resultant effect on the fund balances.

Continuing Education

During the 1980-81 academic year, I received two reports based on an analysis of the very significant Canadian population changes and University enrolment patterns which have been taking place over the past two decades. These changes will almost certainly have a profound effect on all spheres of Canadian life and carry with them implications for the future of continuing education in this country.

The reports, which were published under the title Looking Beyond, were prepared by Dr. William Tetlow and Robert Taylor of the UBC Office of Institutional Analysis and Planning and by Jindra Kulich, director of the Centre for Continuing Education. Both use federal government and university enrolment figures to make the case for an expansion of university and educational services in the years ahead.

The Tetlow-Taylor report points out that what has largely gone unnoticed in the shifts of age and educational attainment profiles of the Canadian population over the last 20 years is the dramatic increase in the mature adult (i.e. 25 years of age and up) population and the changes in the age composition of university registrants.

The number of people in the 25-44 age category has risen from 3 million in 1960 to an estimated 5.5. million in 1980 and is predicted to rise to 8.1 million by the year 2000. Paralleling this growth has been a marked increase in this age cohort as a proportion of university degree-credit registrations. In 1964 at UBC, registrants aged 25-44 and over 45 made up 18 per cent of the University's total winter session enrolment. In 1979, these age groups accounted for more than 32 per cent of total winter enrolment.

Another little known fact cited in the report is the increasing percentage of Canadians who are obtaining post-secondary education. Projections show that by the year 2000 more than 50 per cent of the 25 to 34-year-olds and 48 per cent of the 34 to 44-year-olds will have completed some form of post-secondary education.

Both reports identify four major matureadult constituencies — those over the age of 24 — which will become of ever-increasing importance to all post-secondary institutions. These

- The mature non-employed, including housewives and retired persons, many of whom are seeking degree completion or personal enrichment courses;
- Wage earners who seek diplomas, certificates and degree-completion to enhance their skills and competitive position in the job market and for whom educational pursuits are made possible by fewer working hours and increased leisure time.
- Members of professional organizations who require continuing education programs because the half-life of many professionals is now less than 10 years as a result of technological change, legal requirements and exponential knowledge growth; and

• Geographically mobile families and individuals, many of whom have difficulty consolidating their efforts toward degree completion.

The Tetlow-Taylor report comments that institutions which ignore these groups "will run the substantial risk of becoming as obsolete as buggy whip manufacturers in the automobile age." It is also pointed out that a federal-government study has found that the barriers of finance and time are the reasons most frequently given for not pursuing higher education.

What implications do these changes have for UBC? First and foremost, all institutions need to re-examine their policies, procedures and requirements to ensure that such barriers as residency requirements, transfer credit, time and place of course offerings and insufficient support services do not prevent individuals from pursuing their goals through continuing education.

UBC will have special responsibilities in the future because it will be in a position to service all the needs of mature students as the result of having general, professional and health sciences faculties. However, the uniqueness of many of UBC's educational programs will no doubt mean that an increasing emphasis will be given to the professional and managerial constituencies. In this way, the particular strengths of UBC can contribute most effectively to serving the educational needs of all the residents of B.C.

I regard these reports as the first step in the development of a comprehensive long-range policy for continuing education at UBC.

In the 1980-81 academic year, 94,278 registrations were recorded for continuing education programs offered through the University's Centre for Continuing Education and the faculties of the University. This total does not include the many thousands of people who come to the campus annually for musical concerts, stage plays, art exhibits and hundreds of lectures. The notes which follow are extracted from the composite report on continuing education activities prepared annually by Mr. Kulich for the Senate of the University.

EXTRA-SESSIONAL STUDIES. The Office of Extra-Sessional Studies was established in response to the increasing numbers of students who desired University credit courses but could not attend the regular winter session. Courses administered through the office are given during the late afternoon, evening, weekend, officampus and during the spring and summer sessions

The number of part-time students registered for 1980-81 late-afternoon and evening winter session courses was 3,393, an increase of 309 students or 10 per cent over the previous academic year. Of the total, 1,751 took late-afternoon or evening courses only; the remaining 1,642 took at least one daytime course. The registration total represents the highest part-time student enrolment of any UBC winter session.

A total of 522 courses beginning at 4:30 p.m. were given either through the extra-sessional office or as departmental on-load offerings. These courses enrolled 9,227 students, 5,834 of whom were full-time students, an increase of 221 over 1979-80. In addition, 101 sections were offered by the Faculty of Education's Field Development Office in 33 centres around the province. These courses enrolled 847 students.

The Office of Extra-Sessional Studies carried out an interesting analysis of the 3,393 part-time students who enrolled for late afternoon and evening courses. The analysis revealed that 68.87 per cent were women, 52.56 per cent were teachers, 65.29 per cent lived in Vancouver, 33.20 per cent were not pursuing a degree, 33.2 per cent were between 20 and 29 years of age, 41.6 per cent were between 30 and 39 years of age, and 46.55 per cent said winter evening courses were their favorite type of course. It is interesting to read these percentages in conjunction with the reports entitled Looking Beyond, which are outlined above.

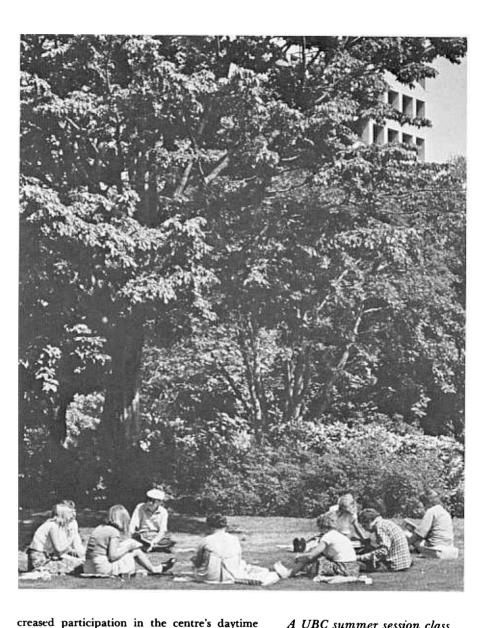
UBC's 1981 spring session enrolled 3,573 students, an increase of 556 students or 18.4 per cent over the 1980 enrolment, and the 62nd summer session enjoyed its highest enrolment since 1971. The 4,209 students on campus in the summer of 1981 represented a 7.45 per cent increase over 1980.

A demographic analysis of the students attending the spring and summer session revealed the following: more than 55 per cent of both groups were women; 48.42 per cent of summer session students and nearly 60 per cent of spring session students were between 20 and 29 years of age; and 15.52 per cent of the spring session students and nearly 28 per cent of summer session students were between 30 and 39 years of age.

CENTRE FOR CONTINUING EDUCA-TION. The centre is responsible for the general non-credit continuing education program of the University. It is also in charge of the Guided Independent Study (correspondence) program and organizes continuing education programs for a number of UBC faculties and schools, including Applied Science, Education, Forestry, Architecture, Librarianship and Computer Science.

Mr. Kulich, the centre's director, reports that for the first time in several years participation in centre programs did not increase appreciably. Registrations totalled 53,029, an increase of less than one per cent over the previous academic year. He speculates that economic uncertainty may be responsible for this temporary plateau in registration. Participation in liberal arts and humanities programs decreased slightly but was offset by increases in registrations for professional continuing education. Registrations for Guided Independent Study, which offers 51 credit courses in the Faculties of Arts, Science, Education and Forestry, totalled 1,295, a slight drop from the 1,353 registered in the previous year.

Other highlights of the centre's year included: increased enrolment in the centre's summer non-credit program for individuals and families, which saw 4,150 people register for some 184 courses, tours and field studies; in-



program, which is being attended by an increasing number of young adults; introduction of programs designed to serve the needs and interests of Vancouver's diverse ethnic communities; and completion of the first full year of operation of programs for architects in co-

operation of programs for architects in cooperation with the Architectural Institute of B.C.

In terms of curriculum development, the centre introduced five credit courses in forestry through Guided Independent Study, developed for the B.C. ministry of education a series of 11 distance education modules for in-service training of teachers of adults, developed an innovative distance education course in spoken French through its Language Institute, and prepared a Handbook for Continuing Education Programmers for in-service training of college and school board personnel.

CONTINUING EDUCATION IN THE HEALTH SCIENCES. This division, which reports to Dean Bernard Riedel, the coordinator of health sciences, provides on- and

A UBC summer session class takes advantage of fine weather to meet outdoors.

The President's Report 1980-81/31

off-campus continuing education for professionals in the fields of dentistry, human nutrition and dietetics, medicine, nursing, pharmaceutical sciences and rehabilitation medicine. The objectives of the division are broad and include assisting health sciences faculties and schools in identifying and delivering programs in the community, initiating new teaching methods and providing consultative services for health professionals, maintaining liaison with other groups providing continuing education programs and encouraging and participating in the development of health education programs for the public.

In 1980-81, the division staged a total of 332 courses which attracted 10,727 registrants. A total of 207 courses held on the UBC campus attracted 7,486 participants and 125 off-campus courses registered 3,241 persons.

The Continuing Dental Education Division mounted 100 learning events in 1980-81, which were attended by 3,752 registrants. The division has purchased 18 videotapes to allow B.C. dentists to use this medium for self-directed continuing education. A concentrated 40-hour program to prepare certified dental assistants to work as assistants to orthodontists was pilot tested using two formats. It was decided that a concentrated period of instruction for five consecutive eight-hour days was most successful and will be repeated. The director of the division continued his travels to promote continuing education opportunities for foreign dentists in B.C. and for B.C. dentists abroad. Several new courses with an international flavor are expected in the coming year.

The 120 Continuing Medical Education events during the year attracted 2,994 registrants. The division offered its first televised programs to B.C. physicians via the Knowledge Network in the form of five, two-hour events. Other continuing aspects of the division's operations are a Wednesday night lecture series, portable courses offered on request to physicians in non-metropolitan centres on such topics as cardiology and pediatric emergencies, and an extensive community hospitals program, which attracted 800 physicians in communities throughout the province.

Fifty events sponsored by Continuing Nursing Education resulted in registrations totalling 1,378. The division is developing five post-basic programs for implementation in 1981-82 on such topics as infection control, long-term continuing care and psychiatric nursing. These will supplement other post-basic programs in the areas of critical care and in-service education.

A total of 1,529 registrants participated in 54 activities sponsored by Continuing Pharmacy Education. Events included 26 off-campus and 10 on-campus courses and 12 two-hour programs transmitted over the Knowledge Network.

Many of the divisions within Continuing Education in the Health Sciences co-operate to provide inter-professional lectures and courses in a common working environment. Activities in 1980-81 included a two-day program on the abuse of alcohol and other drugs, as well as programs and lectures on perinatal crises, human sexuality, and the team approach to caring for families with catastrophic illnesses, which was

the topic of the 1980 John F. McCreary lecture. The general public is encouraged to attend lectures sponsored by the division and to take part in health education programs staged in cooperation with the Centre for Continuing Education.

COMMERCE AND BUSINESS ADMINI-STRATION. Professional programs in the Faculty of Commerce and Business Administration comprise the continuing education activities of four divisions — executive programs, the diploma division, certificate courses and the real estate division. Executive programs is concerned with short-term management seminars and conferences, which attracted 1,400 participants in 1980-81 for 70 events. The diploma division provides long-term professional career training in association with various professional groups; some 4,800 registrations were received in 1980-81. A total of 45 persons were registered for certificate courses and the Real Estate Division provided professional training in four subject areas for more than 3,000 students in 1980-81.

The Faculty of Commerce recorded a total of 9,266 registrations in the academic year.

SOCIAL WORK. The Continuing Education Program in Social Work is designed to enhance the knowledge and skills of the social worker who possesses a university degree and to provide educational opportunities for the substantial number of people employed in social services, but who lack professional education. The program included 34 courses with 495 registrations in the academic year, and the 1981 Conference on Family Practice more than doubled its enrolment in attracting 290 persons.

AGRICULTURAL SCIENCES. More than 1,400 British Columbians attended continuing education events sponsored by the Faculty of Agricultural Sciences in the academic year. These included six academic courses offered in the Interior, three symposia, 11 short courses, three conferences, four workshops and two seminars on a wide range of topics, including plant and soil science, animal nutrition, resource management, landscape design and construction and rangeland use and management. The faculty continues to place emphasis on its Interior Program, which is enhanced through co-operation with regional colleges, and has stationed faculty members in Prince George and Kamloops to ensure that programs meet local needs. Maureen Garland was appointed director of Continuing Education, Extension and Communications for the faculty in 1980-81

FACULTY OF EDUCATION. This faculty increased its already high level of service to the continuing education of professional educators in the school system of the province in 1980-81. This contribution is made through the offering of credit courses and through the provision of a large number of workshops at locations throughout the province. In addition to its service to the profession, the faculty has continued (on request) to assist business corporations with their programs of management training, language competency training, and employee retraining.

Beyond the borders of the province, the faculty maintains its liaison with the Yukon Ter-

ritory, where it continues to provide on contract a quality teacher-education program centred in Whitehorse. Some 140 students enrolled for the program in 1980-81 in the first, second and third years of the program leading to the degree of Bachelor of Education. A total of 16 students were awarded certificates at the end of the year. Nineteen faculty members made a total of 52 trips to the Yukon for teaching purposes.

In terms of its efforts in B.C., the education faculty gave 270 units of credit courses to 3,004 registrants in 38 centres. It also gave a large number of workshops, the major ones entailing over 1,200 instructional hours in 42 locations, reaching 4,357 participants. The faculty is also an enthusiastic participant in the Knowledge Network.

FORESTRY. The off-campus program offered by this faculty commenced on Aug. 1, 1979, with the aim of providing continuing professional education programs for foresters and forest technicians, to enable forest technicians to upgrade their skills to degree completion, and to establish recognized forestry transfer programs at major B.C. colleges.

In co-operation with the Guided Independent Study Program of the Centre for Continuing Education, the forestry faculty now offers five credit courses at the second and third-year level, which this year enrolled 200 persons. A total of nine professional development short courses were also offered in various parts of the province.

A non-credit course on forest policy made up of videotapes made at UBC by Prof. Peter Pearse, who now holds an appointment in Forestry, is available in three locations for a four-month period. Colleges in Kelowna, Prince George and Victoria are co-operating in offer-

ing the course, with registrants having access to college facilities and staff assistance in viewing the tapes.

FACULTY OF LAW. This faculty participates actively in continuing professional education through the Continuing Legal Education Society of B.C. Indeed, UBC is one of the parent bodies of this organization with the Law Society of B.C., the B.C. branch of the Canadian Bar Association and the law faculty at the University of Victoria. The society offers a very extensive program of courses, most of one or two days duration, and attracted 8,000 registrants to 100 events in 1980-81.

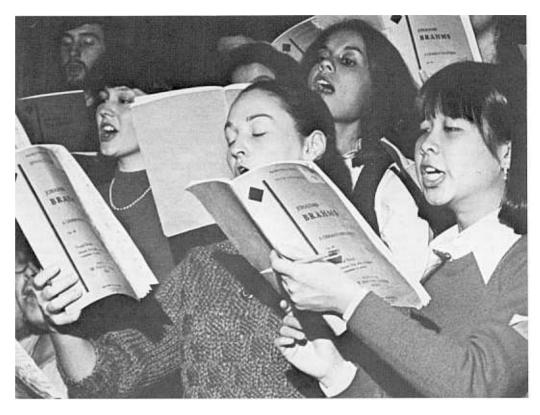
During that period, one-third of all full-time UBC law faculty members participated in one or more of the society's programs. Faculty programs carried out independently of the society included an international conference on police accountability, a seminar on taxation in association with the Canadian Tax Foundation and a workshop on the legal rights of the mentally handicapped in association with the B.C. Mental Retardation Institute.

Finally, in this section of my report, I list the activities of a range of University departments and units which provide very significant continuing education services to the community through displays and other public performances. They are, in a sense, our chief link with that wider community of individuals who have an interest in the fine and performing arts as well as the world of ideas.

The Museum of Anthropology recorded 138,352 visitors in 1980-81, in addition to the 20,527 who took part in public events of a special nature. The museum offers a wide variety of educational and cultural programs for age groups ranging from children to senior citizens.

THE UNIVERSITY OF BRITISH COLUM STATISTICAL SUMMARY OF PARTICIPAT CONTINUING EDUCATION PROGRAMS I	ION IN
Extra-Sessional Credit Programs	11,175
Centre for Continuing Education (including Guided Independent Study)	58,029
Division of Continuing Education in the Health Sciences	10,727
Professional Programs of the Faculty of Commerce and Business Administration	9,266
Professional Continuing Education Program of the School of Social Work	785
Professional Continuing Education Program of the Faculty of Agricultural Sciences	1,428
Professional Continuing Education Program of the Faculty of Education	7,361
Professional Continuing Education Program of the Faculty of Forestry	507
TOTAL PARTICIPATION IN CONTINUING EDUCATION PROGRAMS	94,278

UBC Choral Union was among dozens of music department groups, large and small, that gave more than 170 free public concerts on and off the UBC campus in 1980-81.



Public programs include Sunday events and performances, demonstrations and special lectures that highlight or interpret parts of the collection.

Highlights of the museum's program this year included demonstrations by native Indian youths of traditional uses of Northwest Coast cultural resources; 42 workshops, 36 of them designed for the training of teachers; demonstration and identification clinics that served 2,500 persons; and display of eight travelling exhibits and 18 in-house exhibits, including some mounted by students and volunteers.

The Botanical Garden continues to play an increasingly active role on the campus and in the community at large, stimulating an everincreasing interest in the plant world. Garden staff answered in person or by phone and mail 4,800 enquiries, took part in the Vancouver Home and Garden Show attended by 86,000 persons, continued development of its therapy and rehabilitation through horticulture programs, expanded training sessions for the B.C. Nursery Trades, and provided staff for the CBC television series "B.C. Gardens."

The Department of Music presented 46 faculty concerts and 90 student recitals on campus during 1980-81, an increase of 100 per cent in the case of faculty concerts and 36 per cent in student recitals. Student ensembles gave 36 off-campus concerts on Vancouver Island, in the Fraser Valley and the Okanagan and in the Kootenays. The department's offerings were enlivened by a number of special events by distinguished visiting artists and composers and a centenary concert in co-operation with the Vancouver Hungarian Bartok Committee to mark the composer's 100th birthday.

Some 21,000 persons attended theatre productions in the Frederic Wood Theatre sponsored by the Department of Theatre. The 1980-81 season included Thornton Wilder's The Shin of Our Teeth, Long Day's Journey into Night by Eugene O'Neill and The Rivals, by Richard B. Sheridan. There were three thesis productions in the Dorothy Somerset Studio in the Freddy Wood Theatre, and the University's summer theatre company — Stage Campus '81 — presented three productions, including Shakespeare's Two Gentlemen of Verona.

The UBC Fine Arts Gallery, which is still housed in totally inadequate quarters in the basement of the Main Library, staged a total of eight exhibits in the academic year.

This wide range of cultural activity was supplemented by hundreds of lectures and seminars which are open to the general public. Chief among the lecture series offered each year are those on Saturday night sponsored by the Vancouver Institute and those made possible by generous gifts from University benefactors Cecil H. and Ida Green and the late Leon and Thea Koerner.

Space does not permit a listing of the hundreds of UBC faculty members who participated in public events, gave single lectures on various public platforms and generally participated in making the rich resources of the University available to the community at large.

In connection with several of our continuing education programs, I have mentioned the University's involvement with the Knowledge Network, the non-profit society established by the provincial government in 1980 to assist educational institutions and government agencies in the delivery of distance education programs by television.

During the academic year, the University invited the network to move its operations centre to the UBC campus. Before the conclusion of the academic year an agreement was reached under which the network will rent space in the Woodward Instructional Resources Centre and the Library Processing Centre. It is expected that the move will have taken place by October, 1981 and that the network will be transmitting some 98 hours of educational programming to 53 communities in B.C. by satellite and cablevision. In addition, the provincial government this year provided \$1.2 million to provide a closed circuit cable and microwave system linking B.C.'s three public universities, the af-

filiated hospitals associated with UBC's health sciences disciplines and the downtown law courts with the Faculty of Law Building at UBC. One of the chief advantages of this will be the elimination of time-consuming travel by faculty members and students in the health science disciplines and in law.

In this section of my report, I have only been able to touch briefly on the many and varied aspects of the University's outreach program. I trust, however, that the range and extent of the program described provides ample evidence that the University takes seriously its obligation to make its rich resources available to all the people of British Columbia.

The Student Body

Enrolment at the University for both the 1980-81 fiscal year and the academic year was at an all-time high. Fiscal year enrolment totalled 33,113 students compared to 32,607 the previous fiscal year, an increase of 1.6 per cent. Academic year enrolment in 1980-81 was 33,963 students, up from 32,629 in the previous academic year, a gain of 4.1 per cent.

Our fiscal-year enrolment total was the result of increases in our major academic sessions. Our 1980 spring session was up 9.4 per cent; our daytime winter session enrolment showed a gain of 1.9 per cent and the number of students registered for winter session evening courses increased by 8.4 per cent.

Our fiscal year enrolment, which is the basis for the University's submissions to the Universities Council of B.C. for operating grants, is the sum of the following enrolments in the period April 1, 1980 to March 31, 1981 (the comparable 1979-80 figures appear in brackets): 1980 spring session — 3,015 (2,757); 1980 summer session — 3,917 (4,153); daytime winter session 1980-81 — 23,604 (23,161); evening winter session — 1,282 (1,183); guided independent study (correspondence) — 1,295 (1,353). Total — 33,113 (32,607).

Our enrolment increase was of greater magnitude when viewed from the perspective of the academic year, i.e. from Sept. 1, 1980 to Aug. 31, 1981, which is the period covered by this report. This was largely the result of significant increases in our 1981 spring session (18.5 per cent) and the 1981 summer session (7.5 per cent).

Our record academic-year total is the sum of the following sessional enrolments: daytime winter session 1980-81 — 23,604 (23,161); evening winter session — 1,282 (1,183); guided independent study (correspondence) — 1,295 (1,353); 1981 spring session — 3,573 (3,015); 1981 summer session — 4,209 (3,917). Total — 33,963 (32,629).

It is interesting to note that in our major sessions, enrolments in the Faculties of Arts and Science have continued to increase, along with registrations in such professional schools as engineering programs in the Faculty of Applied Science, Commerce and Business Administration and Medicine.

The trends noted in my last report, which surveyed enrolment changes over the decade of the 1970s, continued in the 1980-81 academic year. The number of women in the student body now stands at 46 per cent overall, with the biggest gains — 1-2 per cent a year — occurring at the graduate level, where a record 39 per cent are female. Women make up 47 per cent of our undergraduate enrolment. Our student population continues to grow older as well, in the sense that while the vast majority of students are in the 18-24 years category, the proportion of students in higher age groups continues to increase. For example, the number of students in the 31-35 age group increased by 0.8 per cent in 1980-81

We are rapidly approaching the position of having the best prepared group of students in Canada entering the University to undertake first-year studies. This is the result of new entrance requirements, which have been phased in since 1978 in order to allow high school students to adjust their programs. These new regulations will be in full force for the class of students which will enter the University in September, 1981.

I believe the fears expressed from time to time that the new entrance requirements, which call for a more structured high school program in preparation for entrance to UBC, will result in a decline in enrolment are groundless. I am convinced that students are attracted to quality education and all the evidence from other jurisdictions indicates that insistence on high standards of entrance to the University has a positive effect on enrolments.

In addition, I believe there is cause for optimism about continued enrolment increases with our continued emphasis on graduate studies of high quality as well as an expansion of educational opportunities for older people to return to the campus for degree completion and retraining. This latter aspect of future University enrolment was the topic of a report released publicly in the 1980-81 academic year and which is described in greater detail in the section of this report dealing with Continuing Education.

The rest of this section of the report describes

the activities of various administrative units which provide services to students and some of the awards and honors conferred on our stu-

dents during the academic year.

The Student Counselling and Resources Centre complements the educational objectives of the University by providing personal, social, educational and career counselling to students currently enrolled at UBC as well as to those considering entering the University from high school or the work force. It also provides a range of services aimed at maximizing the students' utilization of educational opportunities available at the University.

During the academic year, the centre was relocated in Brock Hall, which has been designated as the site for housing most of the offices that provide services to students. The extensive renovations carried out in that building are well designed to meet the centre's needs and the relocation to a more central campus location provides easier access to the centre's facilities.

Nearly 8,000 students took advantage of the centre's counselling services in 1980-81. Of the total number of counselling appointments, 54 per cent were made by women, which reflects the greater participation of women in higher education. The centre continued to offer group programs in time management, study skill development, assertiveness training, personal growth, job search techniques and career exploration.

A major function of the centre is to maintain and develop contacts with B.C. high schools and community colleges for the purpose of providing information to prospective students on educational opportunities at UBC. Counsellors visited 195 secondary schools and 12 of the 14 community colleges in the province in 1980-81. Up-to-date information on changes in existing programs and new areas of study at the University are communicated to counsellors through a regular newsletter sent to high schools and colleges.

There was a significant increase in the academic year in the number of secondary school students visiting the campus as the result of the appointment of a new assistant counsellor. More than 1,400 students from schools within and outside the Greater Vancouver Regional District took advantage of this program for group visits to the campus.

The centre also continued to develop a project funded by the Board of Governors to improve the participation rate in higher education in B.C. A second workshop of school, community and student representation from five target communities was held and plans were made to develop resources in those communities to promote support and encouragement for student participation in higher education. Attention was also directed to providing additional support for students from these communities when they enrol at UBC.

Despite problems resulting from the 1981 summer mail strike, the centre continued its orientation program for students planning to enrol at UBC. A total of 1,179 new students participated in 43 different orientation sessions.

Other important services provided by the centre include: special services for disabled

students, aided by grants from outside organizations and the 1981 graduating class, which contributed funds for the construction of a ramp to provide easier access to Brock Hall for the handicapped; provision of a wide array of tests for individual students and for various University faculties and departments; and administration of the provincial ministry of labor's Youth Employment Program, which in 1981 provided more than \$1.2 million for 399 summer projects carried out by 613 students.

A survey carried out by the Student Counselling and Resources Centre in the last academic year received widespread publicity in the news media because of its findings concerning the employment of students who received their degrees in 1980. The survey again shattered the myth that our graduates cannot find employment by revealing that only 3 per cent of 2,982 students who graduated in May, 1980 from 20 degree programs were unemployed when the survey was conducted. A comparison of the 1980 unemployment rate with the rate obtained in previous surveys shows that the unemployment rate for graduates has been steadily falling over the past five years. The survey's overall unemployment rate of 3 per cent is in line with Statistics Canada figures which show a 2.5 per cent unemployment rate in B.C. for people holding a university degree.

The Women Students' Office, which is also located in Brock Hall, assists women students to realize fully their educational potential and set the most suitable career goals. In 1980-81, the office directed its efforts to consolidating staff and strengthening services in order to realize its mandate. Emphasis has been placed on responding to the current needs of women students in the 18-24 age group in the light of this group's increased use of the office's resources. At the same time, the office recorded a proportionate increase in the number of mature women students seeking out the services of the Womens Students' Office. In the light of this trend and the increasing number of women enrolling in UBC's professional programs, the office engaged in developing new strategies for serving the mature-women group as well as those students in the traditional 18-24 age

New programs initiated by the Women Students' Office in 1980-81 included programs designed to facilitate access for prospective women students, public forums aimed at stimulating awareness of non-traditional career opportunities and cultural programs intended to focus on the role of women in society and the contributions of women to cultural development. Specific events included a reception and orientation for women from other countries enrolling at UBC for the first time, time management and public speaking for women, and women in politics and engineering. Consultative services offered in response to requests from academic faculties included handling job interviews, a workshop for home economics students, a workshop on career planning for women in their 20s and 30s and a re-entry workshop for School of Nursing advisors. The staff of the Women Students' Office are also involved in a wide range of public services through community, church and government organizations.

The Co-operative Education and Internship Program, which also has its offices in Brock Hall, grew significantly in the last academic year. The Engineering and Forestry co-op programs integrate academic studies with engineering and forestry-related work experience during three consecutive summers, while the internship program provides senior students in the Faculty of Arts with an opportunity to apply their skills to work placements with businesses and agencies in Vancouver during the winter months.

in Vancouver during the winter months.

In the summer of 1981, 102 students — 80 in engineering and 22 in forestry - worked with 45 employers in B.C., Alberta and the Yukon, where they were visited by 25 faculty members from Applied Science and Forestry, who advised them on a required technical report. Of these work placements, 19 positions in municipalities, regional districts, a hospital and ministerial departments were funded by the newly established Co-op Training Program of the provincial ministry of labor. The Co-op Program was also strengthened by the establishment of a Coop Employers' Advisory Council consisting of 12 senior business and government representatives and chaired by John Spencer of H.A. Simons (International) Ltd. It is anticipated that the council will become a valuable link for UBC with the business and government community. At the conclusion of the 1981 Co-op term, the council awarded prizes to three engineering students for their outstanding technical reports.

Under the energetic leadership of Rori McBlane, International House underwent a year of consolidation and improvement. Consistent with the University's desire to become an institution of world standing, a drive has been initiated to provide services not only of direct value to international students, but to Canadians and the community at large as well. In addition to a continuing program of sending information to international students prior to departure from their home country, International House endeavored to put into place a number of practical services, including liaison with immigration officers and with the student's embassy or consulate and advice concerning housing, the status of spouses and related topics.

The other side of the coin, as it were, for Canadian students was the provision of information on work and study opportunities abroad through organizations such as Canadian University Service Overseas (CUSO), the World University Service of Canada (WUSC) and many other non-governmental offices.

International House also organizes and iosters a whole range of cultural and social events for international and Canadian students, including language nights, films on different parts of the world, and evenings of music, dance and special food. The range of services provided to students and the public through International House includes orientation, a Language Bank, reach-out and reception programs as well as sports and summer activities.

The University's 1981 Open House was held on March 6 and 7 with the Faculties of Applied Science, Agricultural Sciences and Forestry acting as hosts to the public. Thousands of adults,



students and young people took advantage of this event to visit the campus for a wide variety of displays and exhibits that illustrated University activities in these three important professional schools. Mention of this event in this section of my report reflects the fact that much of its success is due to the interest and energy of our students, who stage and man most of the displays. The University is deeply grateful to the faculty members, employed staff and students who had a hand in making the 1981 event such a success.

The men's and women's athletic teams that represented the University provided spectators with outstanding entertainment throughout the academic year. The Thunderbird football team played their first games under the newly installed lights in Thunderbird Stadium and only narrowly missed being eligible for the Western Canada playoffs. Our competition with Simon Fraser University continued in 1980-81. The football team lost for the first time since the competition was revived three years ago and the SFU Clansmen basketball team narrowly outpointed their UBC counterparts. The men's ski team missed by the slimmest of percentage margins becoming the first Canadian university to represent the predominantly American Northwest Ski Conference at the U.S. National Championships. Our rugby team got off to a slow start but ended its season with an undefeated tour of California. The soccer team ended up tied for first place in the Canada West Conference but lost the title because the University of Calgary's team had beaten and tied UBC in league play. One of the many UBC male athletes who enjoyed success was Jim McLaughlin of the Thunderbird hockey team, who won the Canada West scoring title and was selected for the all-Canada team.

The women's athletic program operates 18 intercollegiate sports, the most extensive women's program at any Canadian university. UBC's tradition of success in national competition con-

1980-81 winners of top UBC scholarships for a combination of academic excellence and involvement in UBC and community affairs are, left to right, political science student Mark Crawford, recipient of the \$2,500 Sherwood Lett Memorial Scholarship; poultry science student Barbara Johnstone, winner of the \$1,250 Harry Logan Scholarship; and Chris Niwinski, a graduate student in civil engineering and one of two students elected to sit on the Board of Governors, winner of the \$2,000 Amy Sauder Scholarship.



Music student Shelley Craig was winner of a leadership award from UBC's International House and a Rotary fellowship to enable her to study piano for a year in France.

tinued in 1980-81 when the Thunderette field hockey team captured the national title in November, 1980. The team followed this success by winning an international tournament in Glasgow, Scotland, in the spring of 1981 and touring England. Coach Gail Wilson and her team are to be congratulated not only on their success but also on their successful fund-raising efforts.

In other competition, the women's gymnastics team won the Canada West finals and placed second to McMaster University in the nationals. Alena Branda was named women's gymnastics coach of the year and Patti Sakaki of the School of Physical Education was the all-round champion for the second successive year. The women's swimming and diving team sent 11 UBC students to the national finals and several women athletes were named to all-star teams in the Canada West Conference and nationally.

Women's teams that are not included in conferences competed well in a variety of local and Pacific Northwest leagues and tournaments. The ski team won the northern division of the Northwest College Ski Conference and the women's ice hockey team won both the University of Saskatchewan Invitational Tournament and the B division of the Vancouver Women's

Hockey League.

Members of the UBC coaching staff continued to make major contributions to the development of sport provincially and nationally. Lionel Pugh was one of the Canadian track and field coaches at the Pan Pacific Games in New Zealand in January, 1981, Sandy Silver acted as an assistant coach for the national women's volleyball team and Gail Wilson coached the national junior women's field hockey club.

Co-winners of the Bobby Gaul Trophy as the University's top male athletes of the year were rugby player Robin Russell and ice hockey player Jim McLaughlin. Both are students in Physical Education and Recreation. The top women athletes were Anne Crofts, winner of the Joan Livesay Award; Patti Sakaki, who became the first woman athlete ever to win the Sparling

Trophy as the top woman athlete for a second time; Kathy Armstrong and Georgina Gray, who shared the Kay Brearley Award; and Debra Knight, winner of the Barbara Schrodt Trophy. The women's field hockey team received the Duvivier Award as team of the year.

The University also continued to operate its highly successful recreational athletic program. This year marked the amalgamation under the title of Intramural and Recreational Sports Programs of the former Intramural Program and Recreation UBC. The amalgamated program provided 10 non-credit instructional courses for 325 students; operated 11 league sports, 17 tournaments and 16 events as part of the men's program and 12 league sports, 6 tournaments and 19 events as part of the women's program; operated a co-educational recreational program that included 7 league sports and 4 tournaments that attracted about 1,000 students over the course of the year; sponsored a rapidly growing outdoor adventure program; and continued special events such as the revived Arts '20 Relay, which saw a record 98 teams of eight runners complete the course from the Vancouver General Hospital to the UBC campus.

Many of our students distinguished themselves academically during 1980-81. Space does not permit me to list all those students who were the recipients of scholarships, fellowships and other awards for graduate and undergraduate study. The numbers of awards made to our own students and the fact that many individuals enrolled at other Canadian universities elect to come to UBC for graduate work is the best possible indicator of the high quality of education

which the University offers.

The deans of the faculties and heads of other UBC administrative units have drawn to my attention the student achievements listed below.

Among our top award winners were three students who received awards for a combination of academic excellence and involvement in UBC and the community. The \$2,500 Sherwood Lett Memorial Scholarship was awarded to Mark Crawford, a fourth-year honors student in political science; a fourth-year agricultural sciences student, Barbara Johnstone, was the winner of the \$1,250 Harry Logan Scholarship; and the \$2,000 Amy Sauder Scholarship was awarded to civil engineering graduate student Chris Niwinski, who also serves as one of two student members on the Board of Governors.

Students in the Faculty of Agricultural Sciences who distinguished themselves included Sandra Murray, who placed second in the 1981 Institute of Food Technology Undergraduate Research Paper competition in addition to heading the 1981 graduating class in her faculty, and animal science graduate student A.L. Schafer, winner of the second prize in the Graduate Student Paper Competition at the August, 1981, meetings of the Canadian Society of Animal Science.

In Applied Science, the UBC student chapter of the Canadian Society for Chemical Engineering and the American Institute of Chemical Engineers received for the second year in a row an Award of Excellence for their active and constructive program.

In the Faculty of Arts, Roger Malbert, a fine arts student, was the first recipient of the B.C.

Binning Memorial Fellowship; Shelley Craig of Music and International House Leadership Award winner for 1980-81 was the recipient of a Rotary Fellowship to enable her to study in France for a year; D. Steyn of Geography won the graduate student prize of the Canadian Meteorological and Oceanographic Society; Debra Parker, a music student, was a local, provincial and national finalist in the Canadian Music Festival, where she won a \$1,000 scholarship; and another music student, clarinettist Kimball Sykes, was an award winner in the Vancouver Symphony Orchestra women's committee scholarship competition. Pianist Kristina Sutor was named the first winner of a \$1,500 award of excellence in music donated by the Austro-Canadian Businessmen's Association.

In Graduate Studies, Pamela Mace of the Institute of Animal Resource Ecology won the stu-

dent award for the best paper presented at the Pacific Fisheries Biologists meetings.

In the Faculty of Medicine, Dr. David Wensley of the Department of Paediatrics was awarded the David Alexander Clark Award as the outstanding postgraduate student; R. Turner of Physiology won the Faculty of Medicine Student Research Award; and Suzanne Milne of the School of Rehabilitation Medicine established the B.C. Wheelchair Tennis Association and was awarded \$500 by the B.C. government to help organize a B.C. tennis tournament for wheelchair users, the first in Canada.

The names of those students who distinguished themselves by winning awards and prizes on graduating from the University in the academic year are listed in the section of this report describing our annual Congregation ceremony.

Capital Financing and New Construction

The University's efforts to upgrade and expand its physical plant in order to create an environment in which teaching and research can flourish continued unabated in the 1980-81 academic year.

A highlight of the year was the completion and opening of the new Asian Centre on a site adjacent to the Nitobe Memorial Garden in the northwest quadrant of the campus. The completion of this building, which has been under construction since 1974, is symbolic of a new spirit of co-operation and understanding between the peoples of North America and Asia.

Occupying the building are UBC's Department of Asian Studies, the Institute of Asian Research and the Asian Studies Library, one of the finest collections of materials on the language and culture of Asia in North America. Much of the collection had been in storage in the inadequate quarters the Asian studies division formerly occupied in the Main Library and was therefore inaccessible to students and scholars. There are also facilities in the building for the use of various University departments which have Asian interests, including music, fine arts and theatre. The already close ties which UBC has with Asian ethnic groups in Vancouver and abroad will be further enhanced as a result of the completion of the centre.

Many individuals and organizations contributed to the seven-year chain of events that led to completion of the Asian Centre. The distinctive pyramidal roof surmounted by a raised skylight is supported by steel girders that were a gift to the University from the Sanyo Corporation of Japan. The girders supported the roof of the Sanyo pavilion at Expo '70 in Osaka, Japan. Funding for reconstruction of the building came from the federal and provincial governments, the Japanese Federation of Economic Organizations, the Japanese World Exposition and a fund-raising campaign supported by both Asian and Canadian interests, which was chaired by Joseph Whitehead. Vancouver architect Donald Matsuba has succeeded in

creating a unique interior environment which amply provides for the building's many functions. Construction of the classical Japanese garden that surrounds the exterior of the building was supervised by Roy Sumi, who was for many years the head gardener at the adjacent Nitobe Garden. The University community has cause to be grateful, too, to members of the Asian studies department and the Institute for Asian Research, for overseeing the many details entailed in construction of the building.

The Asian Centre was officially opened on June 5, 1981, in the presence of some 400 special guests, including B.C.'s premier, William Bennett; Senator Raymond Perrault, representing the federal government; and His Imperial Highness Prince Norihito of Mikasa, nephew of the Emperor of Japan and a law student at Queen's University in Kingston, Ontario.

In addressing the gathering I said that the opening of the centre "causes a lifting of the heart and the mind throughout the whole community. But more than that, nothing is more stirring than the reminder that humanity is one race, with one destiny." This thought was reinforced by Premier Bennett, when he said in the course of his address that he hoped foreign students would continue to enrol at UBC. He related how, in the course of a tour of Southeast Asia, he had met leaders of commerce, industry and political life who had fond memories of Canada and B.C. One such person was a graduate of UBC, Mr. Bennett said, who had stressed to him the importance of continuing to provide opportunities for foreign students to come to North America to take advantage of educational opportunities. I was delighted that Premier Bennett mentioned this encounter on a public occasion, because it vindicates the University's policy of providing educational opportunities, particularly at the graduate level, for foreign students.

In May, 1981, the University dedicated a number of new components associated with the

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The official opening of the Asian Centre on June 5, 1981, became an international affair when the premier of B.C., Hon. William Bennett, invited Prince Norihito of Mikasa, a member of the royal family of Japan, to join him in cutting a ribbon at the entrance of the centre. On the prince's right is UBC's president, Dr. Douglas Kenny. On Mr. Bennett's left are Dean Robert Will, head of the Faculty of Arts; Prof. Ben Moyls, director of ceremonies at UBC; and UBC's chancellor, Hon. J. V. Clyne.



main Botanical Garden on the south campus. A Public Service Centre, a Physick Garden devoted to medicinal and pharmaceutical plants, and the 30-acre Asian Garden devoted to the development of a gene bank of Asian plants, were dedicated. The Physick Garden was opened by Allan Paterson, curator of the Chelsea Physick Garden of London, and the Asian Garden was opened by Kenneth Wilson, former supervisor of operations for the Botanical Garden, who retired in 1980. Quite apart from the pleasure and enjoyment these gardens provide for visitors to the campus, both represent major contributions by UBC to the plant gene resources of the horticulture industry and have already become important as a source of new material.

At its meeting in February, 1981, the Board of Governors approved a recommendation for establishment of an Advisory Design Panel to advise me on the quality of the architecture of all buildings proposed for construction on campus lands and of the impact of this construction on the urban quality of the campus. The first appointees to the panel are: W.G. Argyle, director of the Department of Facilities Planning; Neville Smith, director of the Department of Physical Plant; Douglas Shadbolt, director of the School of Architecture; and David G.A. McLean, for the Board of Governors. The B.C. Society of Landscape Architects has been asked to propose a nominee for the fifth position on the panel.

In the section of this report which deals with the University Library, I have outlined the plans developed in the 1980-81 academic year for the expansion of the Main Library to provide space for new books and other library material up to the end of this century. Equally pressing is the need to provide new teaching and research space for the Faculties of Forestry and Agricultural Sciences, two rapidly expanding professional schools which are producing graduates in areas in vital importance to the economy of the province.

The proposal developed by the Department of Facilities Planning for these faculties envisages a major physical development to the west of the existing H.R. MacMillan Building, which houses both faculties. Proposed are separate wings to accommodate an expansion of each faculty as well as construction of some 7,000 net assignable square feet of space for the joint use of both faculties and for other University purposes. The estimated cost of the development is \$28 million.

Both Forest.y and Agricultural Sciences, in assisting in the preparation of the planning document, have indicated a pressing need for new space in which to meet their teaching and research obligations. Agricultural Sciences needs new space for programs such as landscape architecture and the interdisciplinary Land Resource Science Centre and for the consolidation of some academic facilities now housed in other campus buildings. Forestry's needs are associated with enrolment increases, an expanding continuing education program and a pressing need for research space resulting from new provincial forest and range acts which place new emphasis on management of the forest resource. The Board of Governors approved the expansion proposal and forwarded it to the

What follows are brief descriptions of other construction and renovation projects approved by the Board in the 1980-81 academic year.

Universities Council for consideration.

An expenditure of \$570,000 was approved to continue erosion-control measures on the Point Grey cliffs below the University. Work com-

pleted included construction of a 410-foot experimental beach berm, which meant that a new beach area was created at the base of the cliffs, seeding and fertilization to promote the growth of vegetation on the cliff face and investigation and control of sub-surface water.

The Board approved the expenditure of \$480,000 for the renovation of Empire Pool to meet current Health Act standards. The renovation plans include installation of new filters and a water circulation system in the filter room, provision for a new chlorination system, upgrading of the electrical distribution system and replacement of existing water piping to meet higher circulation rate requirements.

The Board authorized the borrowing of \$3 million for construction of a food outlet in the new Bookstore to be constructed at the corner of University Boulevard and the East Mall and for improvements to the cafeteria in the Student Union Building. The loan will be repaid out of future Food Services revenues.

The \$6 million to be borrowed by the University to build a new Bookstore will also be repaid out of future revenues to be generated by that facility. The new building will provide badly needed retail and storage space for the Bookstore, which has outgrown its present central-campus location.

At its April, 1981, meeting, the Board approved a proposal to construct a 4½-level parking structure on the Fraser River parking lot adjacent to the Asian Centre and the Nitobe Garden. Provision of additional parking in this area of the campus has become urgent because of increased day and night use resulting from completion of the Asian Centre and the presence in this area of numerous facilities used by the public, including the Museum of Anthropology, the Music Building and the Frederic Wood Theatre.

The parking structure, which will cost more than \$3 million, is being financed from "cash capital funds," capital with accumulated interest left over from grants made to the University by the provincial government prior to 1976, when a new provincial act for financing capital construction at universities was introduced. Under this act, the University is prohibited from applying for funds to build parking structures. Self-financing of the structure was not possible in terms of the parking rates which would have to be charged to cover operating costs and to amortize principal and interest on borrowed funds.

Linked to this development was approval of a second recommendation that the basic parking fee for faculty and staff be increased to \$96 for the 1981-82 academic year. The total fee is divided into two portions; \$56 allocated to operating revenues for the Department of Traffic and Security and \$40 allocated to a capital reserve fund for future parking structures. It should be possible in future to provide for additional parking structures from the capital reserve fund given a more realistic schedule of parking fees as well as a fully paid up financial base in the form of the new Fraser River lot parkade.

At its final meeting of the academic year on July 2, 1980, the Board accepted as being substantially complete an addition and altera-

tions to the Biological Sciences workshop.

Construction of new buildings to house the School of Home Economics and the coal and mineral processing activities of the Department of Mining and Mineral Processing in the Faculty of Applied Science continued during the academic year. The University also continued to upgrade roadways and beautify various areas of the campus with special funds approved by the provincial government and the provincial department of highways continued its road-expansion program on the 16th-Avenue and Southwest-Marine Drive approaches to the campus.

The University administration and the Board of Governors are in the process of preparing a new five-year capital development program for submission to the Universities Council in October of the next academic year. This plan will be aided by a report from the Senate Committee on Academic Building Needs, which reported in May, 1981. The committee recommended that priority be given to meeting the space needs of the Faculty of Dentistry, the Departments of Chemical Engineering, Biochemistry, Physiology and Geophysics and Astronomy. The sixth project recommended by the committee is a new Studio Resources Building to recognize the "long-standing needs of the Departments of Fine Arts, Music and Theatre."

The committee also identified three Applied Science departments — Civil, Mechanical and Electrical Engineering — as units where there is a clear indication of acute space shortages in the near future, as well as academic units whose current and anticipated space shortages are solvable through reallocation and renovation of existing space and others whose needs are largely related to the poor quality of existing buildings.

UBC's Department of Physical Plant supervised creation of a beach berm at the foot of the Point Grey cliffs below the UBC campus, part of a plan to control erosion which is threatening University buildings. Project resulted in creation of new beach area for sunbathers.



Awards and Honors



UBC geographer Prof. J. Ross Mackay was inducted into the Order of Canada and awarded an honorary degree by the University of Waterloo in 1980-81. He reached retirement age during the academic year but will continue his pioneering research in Canada's Arctic as a University research professor.

Just as UBC's ability to attract research grants attests to the high quality of its faculty, so too does the fact that each year a significant number of faculty are honored by national and international bodies for their contributions to scholarship and to public life generally. On behalf of the entire University community, I extend my congratulations to those listed below who were honored in the 1980-81 academic year.

APPLIED SCIENCE. Two members of the Department of Mining and Mineral Process Engineering, Prof. Andrew Mular and C.O. Brawner, were the recipients of Publication Board Awards from the American Institute of Mining, Metallurgy and Petroleum Engineers. Prof. Mular was also the 1981 Distinguished Lecturer of the Canadian Institute of Mining and Metallurgy. Mr. Brawner and Dr. Allan E. Hall of the same department were both invited to China: Dr. Hall to the China College of Mining in Peking under an exchange scheme sponsored by the Universities Council of B.C., and Mr. Brawner to the Beijing University of Iron and Steel Technology. Mr. Brawner was the recipient of the 1980-81 Walter Gage Teaching Award in Applied Science.

In the Department of Metallurgical Engineering, department head Prof. Fred Weinberg, Prof. J.K. Brimacombe and Dr. E.B. Hawbolt were jointly awarded the 1980 Henry Marion Howe Medal of the American Society of Metals.

ARTS. Prof. Kenelm Burridge of the Department of Anthropology and Sociology was elected an honorary life fellow of the Royal Anthropological Institute. Dr. Edwin Pulleyblank of the Department of Asian Studies was invited to be a member of the three-man delegation of the Social Sciences and Humanities Research Council that visited the People's Republic of China in October, 1980, to negotiate and sign a cultural exchange agreement.

In the Department of Economics, Prof. A.D. Scott was the recipient of the honorary degree of Doctor of Laws from the University of Guelph; Robert C. Allen won the Arthur H. Cole Prize for the best article published in the Journal of Economic History; Prof. Gordon Munro won the Harry G. Johnson Prize for the best article published in the Canadian Journal of Economics; and Prof. John Helliwell gave the invited Innes Lecture to the annual meeting of the Canadian Economics Association.

Barbara Sungur of the Department of Fine Arts was the recipient of a Purchase Award at the Boston Printmakers 33rd annual exhibition.

In Geography, Prof. R.C. Harris was the Walter L. Gordon Lecturer to McGill University; Prof. J.R. Mackay was inducted into the Order of Canada and received an honorary degree from the University of Waterloo; and Dr. Timothy Oke was the Symons Memorial Lecturer to the Royal Meteorological Society in London, England.

Dr. Mark Boulby of the Department of Germanic Studies was awarded the degree of Doc-

tor of Literature by the University of Cambridge in England. Two members of the Department of History received prizes in the last year. Dr. Peter Moogk was the recipient of the Daughters of Colonial Wars Prize for outstanding contributions to early American history in the William and Mary Quarterly, and Dr. Richard Unger received the John Lyman Book Prize for 1981 from the North American Society of Oceanic History for his book, The Ship in the Medieval Economy, published in London in 1980.

Prof. Wallace Berry, head of the Department of Music, received an award from the American Society of Composers, Authors and Publishers in recognition of his achievements as a composer.

Pollution, Politics and International Law: Tankers at Sea, a book written by Prof. Mark Zacher, director of the Institute of International Relations and a member of the political science department, was awarded the 1981 Harold and Margaret Sprout Award by the International Studies Association as the best English-language book dealing with problems of pollution.

Prof. Michael Chandler of the Department of Psychology was invited to the University of Amsterdam as a visiting professor, and the Canadian Psychological Association made a posthumous award to Prof. Park O. Davidson for his distinguished contribution to psychology.

Dr. Richard Splane of the School of Social Work was honored twice in the last academic year. The Canadian Association of Social Workers honored him for his contributions to the field of social welfare and his discipline, and in July, 1981, he was informed that he would be the recipient of the Charles E. Hendry Award for national and international contributions to social work education.

COMMERCE AND BUSINESS ADMINISTRATION. Prof. Richard Mattessich was elected as Accademio Ordinario (fellow) to the Accademia Italiana de Economia Aziendale, one of the national academies of Italy; Prof. Harmut Will was the recipient of a fellowship to a German institution as a visiting research professor for 1980-81; Prof. Phelim Boyle's paper on "Immunization Protection from Changing Interest Rates" was awarded a Morgard Properties Ltd. Prize; Dean Peter Lusztig was the reci-pient of C.G.A. designation; Prof. Alan Kraus will be included in the forthcoming edition of Who's Who in Economics as "one of the 1,000 most frequently cited economists in the last several years' Social Sciences Citation Index"; and Prof. J.D. Forbes gave several invited lectures in Britain while on leave of absence, including one to Oxford University's Institute of Agricultural Economics. Dr. Peter Frost was the recipient of a special award for teaching excellence by the Commerce Undergraduate Society; Dr. Gordon Walter won the Talking Stick Award for innovative teaching, and Dr. Bernard Schwab, F.R. Taylor and G.G. Smeltzer received merit awards for teaching.

DENTISTRY. Dr. G. Derkson received the

Scientific Paper Award of the 4th Canadian Congress of Dentistry for Children; and Dr. A.L. Ogilvie was awarded honorary fellowship in the Royal College of Dentists of Canada for his contributions to his discipline in Canada.

EDUCATION. Dr. Peter Cookson received a Certificate of Recognition from the U.S. Adult Education Association for "extraordinary leadership as chairperson of the international section of the association" and Dr. William Griffith received the "Theory to Practice Award" from the same organization; Dr. Norman Amundson won the Canadian Guidance and Counselling Association Award for the best non-research article; Prof. George Tomkins was the recipient of the Whitworth Award for Research in Education from the Canadian Education Association; Dr. Stephen Foster was a visiting scholar to the University of Aachen: Dr. Perry Leslie was commended by the International Student Council for Exceptional Children for outstanding contributions toward the growth of the Student Council for Exceptional Children in Canada; Dr. Todd Rogers was the winner of the R.W.B. Jackson Award for the best research-based article in the Canadian Journal of Education; Dr. Robert Conry received the AERA Evaluation Project Award for Scholarly Excellence; Dr. Jim Sherrill was awarded the Service Pin of the B.C. Association of Mathematics Teachers: Dr. Marvin Lazerson was invited to the Graduate School of Education at Harvard University as a visiting professor; Dr. Gordon Smith was the recipient of an award from the International Arts Festival; Dr. Eric Broome of the School of Physical Education and Recreation received the Citation Award from the Recreation Society of B.C. and Alena Branda was named women's gymnastics Coach of the Year.

GRADUATE STUDIES. Clyde Weaver of Community and Regional Planning received the University of California at Los Angeles Alumni Award of Excellence for 1981; Prof. Liam Finn of the faculty's Soil Dynamics Group was an invited "state-of-the-art" speaker at international conferences in Wales, New York and St. Louis in 1980 and 1981; and Prof. Robert Miura of Mathematics and the Institute of Applied Mathematics and Statistics was awarded a Guggenheim fellowship.

Prof. Douglas Sanders of the FACULTY OF LAW was a guest professor at the University of Tromso in Norway and was commissioned by the Supreme Court of that country to prepare an opinion on international law affecting certain questions of Sami (Lapp) rights. He was also commissioned by the Human Rights Division of the United Nations to prepare a background discussion paper for a seminar on

racism and discrimination.

MEDICINE. Dr. Michael Smith of the biochemistry department was the recipient of the Boehringer Mannheim Prize for 1981; Dr. Dorothy Harrison of the Department of Diagnostic Radiology won second prize in the Congress Award Session for Residents at the annual meeting of the Canadian Association of Radiologists for a paper entitled "Linear Tomography in Chest Disease" and Dr. W.J. Knickerbocker is the fifth Canadian to be elected to membership in the International

Skeletal Society; Dr. Alexander Boggie was elected a fellow of the College of Family Physicians of Canada; Lorea Ytterberg of Health Care and Epidemiology received one of five Robert Wood Johnson Awards in 1981; and Dr. Sydney Segal of the pediatrics department was cited by the American Society of Paediatrics for outstanding service in the setting of standards for child care.

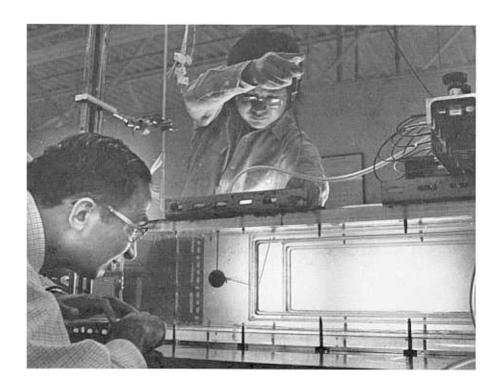
PHARMACEUTICAL SCIENCES. Dr. John McNeill was appointed by the Medical Research Council of Canada as a visiting professor to the University of Toronto and as a visiting scientist to the University of Montpellier in France. He is also the first pharmaceutical scientist to be awarded a prestigious MRC research professorship. Margaret Yee was, for the second consecutive year, the recipient of the Good Teacher Award by the faculty's students and Dr. J. Diamond received the Outstanding Teacher Award

from the third-year class.

SCIENCE. Prof. R.J. Bandoni of Botany was selected as the outstanding alumnus of the University of Nevada for 1981; Prof. L.D. Hall of Chemistry was awarded the Barringer Award of the Spectroscopy Society of Canada; Prof. J.V. Ross of Geological Sciences received the 1981 award of the United States National Research Council for outstanding work in rock mechanics of the earth's mantle; Dr. Mark Goresky of Mathematics was awarded a prestigious fellowship by the Sloan Foundation; Prof. Lawrence Mysak and P.H. LeBlond, both members of the Department of Oceanography, were awarded the 1980 President's Prize of the Canadian Meteorological and Oceanographic Society in recognition of their outstanding ocean research, particularly for their extensive and original studies of waves; and Prof. Emeritus William Hoar was awarded an honorary degree by the University of Toronto.



Dr. William Griffith, above, was honored in 1980-81 by the U.S. Adult Education Association and Prof. V.J. Modi, left below, was the recipient of UBC's top research award, the Prof. Jacob Biely Faculty Research Prize.





UBC's Board of Governors has honored internationally known medical researcher Dr. Harold Copp, who was head of the Department of Physiology in the medical faculty from 1950 until his retirement in 1980. His name is now attached to one of the three basic medical sciences buildings in the John F. McCreary Health Sciences Centre.

The recipient of the University's top research prize, the Prof. Jacob Biely Faculty Research Prize, was Prof. V.J. Modi of the Department of Mechanical Engineering in the Faculty of Applied Science. Prof. Modi was honored for work which ensures that earth satellites remain precisely oriented in their orbits. His studies have been applied to both Russian and American satellites.

Six members of the UBC faculty were named fellows of this country's most prestigious academic organization, the Royal Society of Canada. They are: Dr. Arsenio Pacheco-Ransanz of Hispanic and Italian Studies, who becomes a member of the humanities and social sciences division; and Prof. Richard Lee Armstrong, Geological Sciences; Prof. Julia Levy, Microbiology; Prof. David J. Randall, Zoology; Dr. Lon M. Rosen, Mathematics; and Prof. Michael Smith, Biochemistry, all of whom were inducted into the science division.

The director of the University's Centre for Continuing Education, Jindra Kulich, was honored by the Pacific Association for Continuing Education, which named him Outstanding Adult Educator for 1981.

A large number of faculty members also serve as presidents and executive officers of professional societies, organizations which meet regularly for the exchange of information and serve as watchdogs on academic standards. Space limitations do not permit me to name every faculty member who served professional groups. Listed below are those who served as presidents or chairpersons of special committees established by professional groups or government.

In Agricultural Sciences, Prof. L.M. Lavkulich is president of the Canadian Society of Soil Science and chairman of the agriculture and food sub-committee of the B.C. Science Council; Prof. Beryl March was elected president of the Nutrition Society of Canada and chairs the sub-committee on poultry of the U.S. National Research Council/National Academy of Science committee on animal nutrition; Prof. W.D. Powrie is chairman of the Canada Committee on Food; Prof. Victor Runeckles was named chairman of the peer review panel, air ecology program, U.S. Environmental Protection Agency; Dr. R.M. Tait served as president of the western branch of the Canadian Society of Animal Science; Dr. M.A. Tung is chairman of the sub-committee on energy of the Canada Committee on Food; and Dr. J. Vanderstoep chairs the expert committee on human nutrition of the Canada Committee on Food.

In the Faculty of Arts, Prof. Brenda Beck was elected president of the Canadian Sociology and Anthropology Association; Dr. John Howes was elected president of the Canadian Asian Studies Association; Dr. Hector Williams of the Department of Classics will be on leave of absence in 1981-82 to serve as the first director of the Canadian Archeological Institute in Athens, Greece; and Dr. David Ingram of Linguistics was named president of the International Association for the Study of Child Language.

In Dentistry, Dean George Beagrie was appointed leader of a joint working group on integrated planning of oral health services of the Federation Dentaire Internationale/World Health Organization; Dr. C.S.C. Lear was elected president of the B.C. Society of Orthodontists; Dr. R. Shah became chairman of the Developmental Biologists' Society of Canada; Dr. M.F. Williamson was appointed chairman of the committee on continuing education, Council of Education, Canadian Dental Association; and Dr. D.J. Yeo is president-elect of the Canadian section of the International College of Dentists.

In Education, Prof. John Andrews is president of the Canadian Education Association; Dr. William Tetlow served as president of the Association for Institutional Research; and Dr. Shirley Wong was elected president of the Canadian Chapter of the International Society for Business Education.

In Medicine, Prof. John Crichton was named president of the Canadian Paediatric Society; Dr. Henry Dunn is president of the Canadian League Against Epilepsy; and Dr. T.-Y. Lin was made honorary president of the World Federation of Mental Health.

In Science, Prof. F.J.R. Taylor served as president of the Society of Evolutionary Protistology; Dr. Julia Levy is the new president of the Canadian Society of Immunology; Prof. C.S. Holling is on leave as the first Canadian director of the International Institute for Applied Systems Analysis in Vienna, Austria; and Dr. Norman Wilimovsky was elected president of the Canadian Committee for Fisheries Research and chairman of the Aquatic Sciences Panel of the B.C. Science Council.

Alvin G. Fowler, the director of UBC's Computing Centre, was elected president of the Canadian Information Processing Society, the premier computer society in Canada.

I extend my congratulations to all those members of the faculty, too numerous to mention here, who received awards and other support from provincial, national and international bodies to further research, travel and other scholarly activity in the 1980-81 academic year.

Students who were the recipients of awards in the last academic year are listed in the sections of this report that deal with the Student Body and Congregation.

Appointments, Resignations and Retirements

Each year, the University's Board of Governors deals with a significant number of appointments and resignations, which is not surprising considering the labor-intensive nature of the University. The 1980-81 academic year was no exception. Listed below are some of the many changes approved during the year.

ADMINISTRATION. A rearrangement of administrative responsibilities in the President's Office took place in the middle of the academic year following the resignation of Prof. Erich Vogt from his position as Vice-President for Faculty and Student Affairs. Prof. Vogt's duties as vice-president for faculty affairs were transferred to the office of Prof. Michael Shaw, whose title of Vice-President for Academic Development was changed to Vice-President, Academic, and Provost. Prof. Shaw will share responsibility for faculty affairs with Prof. Robert Smith, whose title of Associate Vice-President for academic development was changed to Associate Vice-President, Academic. Also reporting to Prof. Shaw will be Prof. Peter Larkin, whose appointment as Associate Vice-President, Research, and chairman of the newly established executive committee for research administration and policy is outlined in greater detail in the section of this report dealing with Research.

This rearrangment of duties calls for the future appointment of a Vice-Provost for Student Affairs reporting to Prof. Shaw. Until this appointment can be made on a permanent basis, Kenneth Young, UBC's Registrar, has agreed to fill this post on an acting basis.

It was with the greatest reluctance that I accepted the resignation of Prof. Vogt, who will remain at UBC as the director of the TRIUMF project, the nuclear physics research centre located on the UBC campus and operated by UBC, Simon Fraser University and the Universities of Victoria and Alberta. Prof. Vogt made a significant contribution to upgrading the quality of teaching and research at UBC in his supportive role of aiding faculties and departments in making suitable appointments to the faculty. In addition, he was a very effective catalyst for ensuring that student services were well managed and responsive to the needs of the University community. I know that the University community joins me in wishing him well in his new post as director of TRIUMF, which is just entering its most productive years as a research centre.

FACULTY APPOINTMENTS AND RESIGNATIONS. In Agricultural Sciences, Leonard M. Staley, a long-time member of the faculty, became head of the Department of Bio-Resource Engineering, and Maureen Garland was named director of continuing education extension and communications. Resignations included those of James MacMillan as head of the Department of Agricultural Economics, Bruce D. Owen as head of the Department of Animal Science and George R. Winter as professor of agricultural economics.

Notable appointments in the Faculty of Applied Science included the following: Prof. Fred Weinberg as head of the Department of Metallurgical Engineering; Dr. Rabab Ward as assistant professor in Electrical Engineering, the first woman to be appointed to professorial rank in engineering at UBC; Prof. Robert L. Evans as associate professor in Civil Engineering, an expert in energy conversion and utilization and former director of energy conservation and technology for the provincial ministry of energy, mines and petroleum resources; Dr. S. Stiemer as associate professor to teach steel design in the Department of Civil Engineering. The School of Nursing's teaching and research strength was improved with the appointment of four new instructors and six assistant professors. Rose Murakami, an associate professor in the school, accepted the post of director of nursing in the Extended Care Unit of the Health Sciences Centre Hospital, ensuring the continuation of the close ties which have linked the school with the unit in the past.

In the Faculty of Arts, the following appointments were approved: Dr. James Caswell as head of the Department of Fine Arts, Dr. Derek C. Carr as head of the Department of Hispanic and Italian Studies; and Prof. Basil Stuart-Stubbs as director of the School of Librarian-ship. Resignations included those of Prof. Robert Jordan as head of the English department and Prof. Kenelm Burridge as head of the Department of Anthropology and Sociology. Both will remain at the University as professors

in their respective departments.

Other notable appointments in the arts faculty: Sue Ann Alderson joined Creative Writing to initiate a new concentration in the field of children's literature; Dr. Kenneth White, a specialist in econometrics and monetary economics, was one of five new appointments in Economics; Dr. Arthur Ray joined the Department of History as a full professor to fill the vacancy resulting from the death of Canadian history expert Prof. Leslie Upton; distinguished Canadian pianist Jane Coop joined the staff of the Department of Music; Arnie Zaslove and Don Davis were appointed to the Department of Theatre to work in the new acting and technical/design programs leading to the Bachelor of Fine Arts degree; teaching and research in human nutrition and family science in the School of Home Economics were strengthened by the appointments of Dr. Susan Barr, formerly of the Mayo Clinic, and Dr. James White; and Terence Eastwood's appointment in Librarianship signals the inauguration of the new program in archival studies

In the Faculty of Commerce and Business Administration, the academic year saw two faculty members appointed to named chairs supported by funds raised by organizations and individuals. Prof. Michael Goldberg was the first recipient of the Herbert R. Fullerton Chair in Urban Land Policy and Prof. Gerald A. Feltham was the first appointment to the Certified General Accountants Association Chair.



Prof. Erich Vogt resigned as UBC's vice-president for faculty and student affairs in 1980-81 to become director of the TRIUMF project located on the University campus.



Dr. James Caswell, an expert on Chinese art, was named head of the University's Department of Fine Arts in the 1980-81 academic year.



Prof. Daniel Birch is the new dean of the Faculty of Education at UBC.

In addition, Prof. Richard Mattessich was named to the distinguished Arthur Andersen and Co. Alumni Professorship in the faculty. The appointment of Prof. Goldberg to the Fullerton chair made it possible for Prof. Dennis R. Capozza to join the faculty in the urban land economics division. Prof. John E. Butterworth took over as director of the Ph.D. program in the commerce faculty.

DENTISTRY. Dr. J.G. Silver became head of the Department of Oral Medicine, succeeding Dr. J.D. Spouge, who continues as professor; Dr. B.C. McBride was named head of the Department of Oral Biology; and Dr. A.S. Richardson was appointed director of clinics following the resignation of Dr. D.T. Zack as clinics director and as a member of the Department of Oral Surgery. Mrs. J. Voris assumed the post of director of the Division of Dental Hygiene within the Faculty of Dentistry.

EDUCATION. The new dean of the Faculty of Education is Daniel Birch, who succeeds Prof. John Andrews and Acting Dean Roy Bentley, both of whom remain at UBC as professors in Education. Dean Birch is a UBC graduate and the former dean of Education and associate vice-president, academic, at Simon Fraser University. Another notable appointment in the academic year was the confirmation of Dr. L.B. Daniels of the Department of Social and Educational Studies as director of the faculty's graduate studies office.

LAW. The Faculty of Law continued to take initiatives in the development of its program in Japanese law. Visiting the faculty this academic year are Malcolm D. Smith of Monash University in Australia, considered to be the leading expert in the Commonwealth in the field of Japanese legal studies, and Prof. M. Matsushita of the Faculty of Law at Sophia University in Tokyo. Beverley McLachlin resigned from the faculty to accept an appointment to the County Court of B.C. and shortly after was elevated to the B.C. Supreme Court.

MEDICINE. Dr. W.M. Thurlbeck became associate dean for research and graduate studies; Dr. Charles E. Slonecker was appointed head of the Department of Anatomy; and Dr. K.M. Leighton was named head of the Department of Anaesthesia in the new Walter Koerner Acute Care Unit of the Health Sciences Centre Hospital. Other appointments designed to strengthen the academic and research capabilities of the faculty included the following: Dr. Nancy Wexler joined the Department of Health Care and Epidemiology from the Department of Psychiatry at Harvard Medical School; Dr. Judith Hall, an internationally known clinical geneticist, joined the Department of Medical Genetics where she will focus on developing services to adults with genetic disorders; Dr. Gregory Lee, a new member of the Department of Obstetrics, will develop research on sperm and the immunology of reproduction; Dr. Evan Evans, a new professor in the Department of Pathology, will continue valuable work in the field of biomembranes which has application in the area of cancer research, and in the same department Drs. Andrew Churg and Joanne Wright, both highly qualified pulmonary pathologists, will continue work that promises to make UBC a major North American centre for

studies in pulmonary disease; and two new members of the Department of Medicine, Dr. S. Rabkin and G. Stiver, bring new expertise in the fields of epidemiological studies in cardiovascular disease and infectious disease, respectively.

SCIENCE. One of the most significant appointments made by the University this year was that of Prof. Charles McDowell as University Professor. The appointment of individuals to the rank of University Professor is rarely conferred and is reserved for those who have achieved special distinction in their discipline. In the case of Prof. McDowell, the honor recognizes the distinguished contributions he has made over many years to the chemical sciences and to the University.

As University Professor, Dr. McDowell will be able to devote himself to scholarly work and research in association with graduate students, postdoctoral fellows and visiting scientists.

Prof. McDowell's international reputation rests on the twin foundations of his own scholarship in the fields of chemical kinetics, mass spectrometry, molecular structure, electron and nuclear magnetic resonance, photoelectron spectroscopy and heterogeneous catalysis, as well as the energy and determination he exhibited in building the Department of Chemistry into one of the finest in North America during his tenure as the department's head from 1955 to June 30, 1981. His contributions to the work of the University include serving on the Senate from 1966 to 1981 and on the Board of Governors in 1977-78. In both those forums he was ever an advocate of the academic excellence which characterizes his own work and that of the department he headed with such distinction for more than a quarter of a century

A total of 17 members of the faculty of the University reached retirement age in the 1980-81 academic year. I know the University community joins me in extending thanks to those who retired for the many contributions they have made to the academic and administrative life of the University. Some of the individuals listed below will continue to have a connection with the University as research professors or as lecturers.

Those who retired after 30 or more years of service at the University were:

Prof. William Dixon, who joined the faculty in 1948, served as director of the School of Social Work from 1957 to 1967, and who has been on disability leave since 1967;

Prof. J. Ross Mackay, a member of the Department of Geography for 32 years and an internationally known scientist in the field of Arctic geomorphology and permafrost;

Prof. Peter Ford, who joined the Department of Zoology in 1949 and specialized in the study of embryology;

Prof. Stanley W. Nash of the Department of Mathematics, who joined the faculty in 1950;

Dr. Sydney Friedman, founding head of the Department of Anatomy when UBC established its Faculty of Medicine in 1950, and a noted researcher in the field of hypertension. A scientific conference on the role of sodium in hypertension was held at UBC in May, 1981, to honor Dr. Friedman's contributions to research.

Faculty members who retired after 20 or more

years of service were:

Prof. Wolfgang Gerson, a member of the School of Architecture in the Faculty of Applied Science since 1959;

Nora R. Sinclair, a 22-year member of the Faculty of Education and former associate director of the faculty's elementary division;

Dr. Raymond V. Best, a member of the Department of Geological Sciences since 1960;

Dr. Charles T. Beer, a member of the Department of Biochemistry since 1960 and the co-discoverer in the late 1950s of the anti-cancer drugs vincristine and vincaleukoblastine; and

Adelia Livesay, a member of the Department of English for 21 years who specialized in the teaching of English as a second language and technical writing courses for professional engineers.

Dr. Thomas L. Perry of the Department of

Pharmacology in the Faculty of Medicine reached retirement age after a 19-year teaching and research career at UBC. He was widely known for this work on mental retardation and mental illness caused by biochemical and genetic factors.

Others who reached retirement age during the 1980-81 academic year were:

Dr. Wilson E. Schwahn, an educational psychologist in the Faculty of Education since 1963;

Theresa B. McDonough, a member of the English department in the Faculty of Education since 1969;

Dr. Solomon Malkin, a staff physician and clinical assistant professor in the Department of Family Practice; and

Dr. Martin Hoffman, an expert on diabetes who has been a member of the Department of Medicine in UBC's medical school since 1978.

Governing Bodies

There were a significant number of changes in the membership of the Board of Governors and Senate of the University during the academic year, partly as the result of resignations and partly as the result of the triennial and annual elections required under the University Act.

In November, 1980, David G.A. McLean, a senior partner in a Vancouver law firm, was appointed to the Board to replace Alan Eyre, a member since 1978, who resigned to accept an appointment to the Universities Council of B.C. Mr. McLean's appointment is for the remainder of Mr. Eyre's term of office.

At its meeting on Dec. 2, the Board learned the results of the election of two faculty members to the Board by the faculty of the University. Prof. Peter Pearse of the Faculty of Forestry was re-elected for a second three-year term and Prof. Hugh Greenwood, head of the Department of Geological Sciences in the Faculty of Science, was elected for a first term of three years.

At its February, 1981, meeting the Board was informed of the appointment of Gerald H.D. Hobbs to a three-year term on the Board and the reappointment of Dr. Leslie R. Peterson, Q.C., Allen R. Crawford and Alan F. Pierce for three-year terms of office. The students of the University re-elected Anthony Dickinson and elected Chris Niwinski to the Board for one-year terms. Both are graduate students in the Faculty of Applied Science. Neil D. Boucher, who succeeds Kenneth Andrews, was elected to a three-year term by the employed staff of the University.

In March, 1981, the Board learned of the reelection by Convocation for a second three-year term as chancellor of Hon. J.V. Clyne, and the appointments of Richard Stewart and William L. Sauder, both UBC graduates, by the Lieutenant-Governor in Council. These latter appointments brought Board strength to its full complement of 15 persons.

It is with deep regret that I record here the sudden death on Jan. 6, 1981, of Stanley

Weston, who joined the Board in March, 1979, and who had been appointed chairman of the Board's property committee only a month previously. Mr. Weston was one of UBC's most distinguished graduates who made a notable contribution to Board deliberations during his tenure. Particularly important was his energetic and imaginative handling of hearings and administrative arrangements for the control of erosion on the Point Grey cliffs, which threatens the safety of a number of University buildings at the tip of Point Grey. The plans drawn up by Mr. Weston and his judicious handling of the issues raised by a number of groups with sometimes conflicting interests in the cliffs and beach areas at the base of the cliffs have largely resulted in the resolution of a very difficult problem which has concerned the University for years. The University extends sincere condolences to Mr. Weston's family.

A new University Senate took office in April, 1981, following elections and appointments by various University and professional bodies.

I feel that from time to time I should remind readers of this report that membership on the Board or Senate of the University is far from being an honorary position that requires little or no continuing involvement. Every Board member and most Senators are also members of committees which meet regularly to consider in detail various aspects of University operations and to make recommendations to their parent bodies. This involves considerable sacrifice by those who are already burdened with active business careers and by students and faculty members whose activities are focussed primarily on the academic life of the University. The taxpayers of B.C. are indebted to this body of publicly spirited men and women who are prepared to give unstintingly of their time without reward in the interests of higher education. Once again, I record my debt to many members of both bodies who have provided me with advice and counsel during the academic The remainder of this section of my report on the 1980-81 academic year records some of the major decisions and debates by the Board of Governors and Senate of the University.

SENATE. At its September, 1980, meeting, Senate discussed the report of its budget committee, which assists me annually in the preparation of the University budget for submission to the Universities Council of B.C. Much of the discussion centred on the use by the Council of a complex formula for the distribution of operating grants received by the Council from the provincial government.

Prof. Donald MacDougall of the Faculty of Law, who chairs the Senate committee, told UBC's academic parliament that while the University supports the idea of a formula for the distribution of grants, the budget committee had some serious reservations about the way in which the formula was being applied. In short, Prof. MacDougall said, any advantage UBC derives in grant distribution as the result of high costs associated with some of its disciplines, e.g. medicine and dentistry, is cancelled out by the Council as the result of the use of an economyof-scale argument. The impact on UBC has been that it has not obtained increases comparable to those given to other universities; in fact, UBC increases have been considerably below the rate of inflation.

Numerous other speakers pointed out that formula financing is essentially enrolment driven and led to Dean Peter Lusztig of the Faculty of Commerce and Business Administration serving notice that he intended to frame a motion concerning formula financing for consideration at the October meeting of Senate. After an hour-long discussion in October, Senate voted to record its "deep concern" to UCBC and to provincial education minister Dr. Patrick McGeer about the enrolment-driven formula and established an ad hoc committee of Senators and other appropriate people to consider alternatives to UCBC's grant allocation formula.

That committee reported to the May, 1981, meeting of Senate. Its report called for a significant revision of UCBC's formula for allocating operating grants. Specifically, the report called for dropping the head-count factor from the allocation mechanism "until there is good empirical evidence for substantial economies of scale in B.C. universities"; the making of an allowance for spring and summer sessions at UBC and the University of Victoria if such an allowance is continued for Simon Fraser University; and that full recognition be given to the cost-weighted, full-time equivalent student measure in the allocation mechanism.

Many of the same matters related to the allocation formula were the subject of discussion at meetings of the Board of Governors during the academic year, based on the findings of a Board committee struck for the same purpose. The Board ultimately agreed to approve the Senate report as the University's position before the Universities Council.

At its November meeting, Senate was informed that the University had taken steps to create a Coal Research Centre to administer coal research and graduate student training in an area of increasing importance to B.C. in the light of the energy crisis and the announced plans of the provincial government to exploit large coal reserves in north central B.C. Prof. Paul Watkinson of the chemical engineering department will serve as acting director of the centre.

Also at its November meeting, Senate approved a number of recommendations related to examinations, which were contained in the report of an ad hoc committee. Senate approved proposals that: A study period of a minimum of two days (including weekends) be inserted between the end of lectures and formal examinations in December and April; that exam periods be shortened by increasing the number of exam periods per day where necessary, and by use of Saturdays, if necessary; and consideration of means whereby registration could be completed prior to Labour Day.

At its December meeting, Senate approved a policy statement on the conditions under which it will accept money to provide financial aid to students. The text of the statement is as follows: "The University prefers to administer awards that are made available without restrictions deemed to be discriminatory. It will administer awards that define, in terms acceptable to Senate, the eligibility of students to receive the award. Senate may decline awards containing criteria that it deems to be contrary to the interests of the University as an academic institution."

BOARD OF GOVERNORS. At its October, 1980, meeting, the Board approved the appointment of Dean Peter Larkin, head of the Faculty of Graduate Studies, as Associate Vice-President, Research. This appointment was related to a reorganization in the area of research policy and administration at UBC. The purpose of the changes is to expand research opportunities at the University and to develop new research policies. The reorganization provides for establishment of an Executive Committee for Research Administration and Policy and a reorganization of the existing structure in order to reduce from 16 to 11 the number of University committees dealing with research matters. The reorganization provides for various subject area committees for the health sciences, the natural and applied sciences, Arctic and alpine research and the humanities and social sciences, as well as screening committees in such areas as research involving human subjects, animal care, biohazards and radioisotope and radiation protection.

In June, 1981, the Board approved a new patent policy recommended by the Executive Committee for Research, which developed a new document after an extensive study of policies at leading North American universities. The essential purpose of the University Patent and Licensing Plan is to encourage the public use and commercial application of inventions, and in so doing to protect the rights of the inventor and the University.

At its November meeting, the Board approved a revised schedule of student tuition fees which provided for an average 13 per cent increase in the 1981-82 fiscal year. This action is in keeping with Board policy, approved in the last academic year, that tuition fees be not less than 10 per cent of the net budgeted general operating



costs for the current year (i.e. the 1980-81 fiscal year). At the same meeting the Board approved motions to add \$40,000 to the student aid provision in the 1981-82 operating budget and to make new representations to the federal and provincial governments to deal with deficiencies in the Canada Student Loan Plan.

At its February, 1981, meeting the Board approved the main terms of an agreement providing for establishment of Discovery Park UBC on a 56-acre site in UBC's south campus research area. The agreement was the result of lengthy negotiations and includes a set of development criteria designed to ensure that Discovery Park is developed and occupied in a manner consistent with the University's goals for research as well as with those of B.C. and Canada. In the course of the negotiations, full note was taken of concerns expressed by members of the University as well as the wider community.

The agreement calls for Discovery Park tenants to emphasize the development of advanced technology related to the expertise of UBC faculty members. Other important objectives of this development are: contributing to Canadian technological developments, particularly with respect to B.C.; the enhancement of educational programs for students, particularly at the graduate level; and the fostering of collaborative research among governments, industry

and the University. Through Discovery Park, the University is looking forward to helping the province to enter a new phase of its economic life by assisting in the creation of an economy that is based on scientific knowledge in addition to the abundance of its natural resources.

Finally, I take this opportunity to record my personal gratitude and that of the entire University community for the many hundreds of gifts, financial and material, which reach the University each year from our alumni, foundations, corporations and interested individuals. Gifts of this nature amounted to almost \$10 million in the 1980-81 fiscal year for the support of student aid, research, library purchases and the retirement of debts for new construction.

Many people, including graduates, name the University as a beneficiary in their wills; almost \$1 million reached the University from such bequests in the last fiscal year. Our students contributed a total of \$489,440 to capital development in the last fiscal year; \$111,400 for the Aquatic Centre, \$308,565 for the Student Union Building, and \$69,475 for the Thea Koerner Graduate Centre. Since 1928, our students have funded or helped to fund 12 major campus buildings which cost more than \$6.6 million, an outstanding record which is probably unmatched at any other North American university.

Participants in June 19, 1981, press conference to announce the signing of an agreement for establishment of Discovery Park at UBC were provincial Minister of Universities Dr. Patrick McGeer, second from right, and UBC's president, Dr. Douglas Kenny, left.

The President's Report 1980-81/49

Support Services

OPPOSITE

More than 700 remote terminals link UBC students and researchers to the central campus computer, which was upgraded in 1980-81 with additional memory capacity and disc storage capability.

What follows are brief descriptions of a number of University administrative and support services which enhance the basic teaching and research functions on the campus.

FACILITIES PLANNING. In addition to the preparation of necessary financial and technical information related to the design of new campus buildings, this department is also responsible for continuing work on the overall campus development plan and the implementation of the University's graphics program. A review of the campus master plan will be completed in 1982.

In the academic year under review, department projects included two major studies presented to the Board of Governors — a detailed proposal for a consolidated central library linking the Main and Sedgewick Libraries and a land-use proposal for additional housing in the Acadia Park area. The department works closely with the President's Land Use Committee and the newly created President's Advisory Design Panel.

COMPUTING CENTRE. The demand for computer services at UBC in 1980-81 continued unabated, the rate of increase exceeding 25 per cent. To meet this demand, a number of equipment changes were made. The centre installed a Xerox 9700 laser beam printer and in January, 1981, the Amdahl V6-II was replaced with an Amdahl V8, which increased central processing power considerably. Further memory capacity was also added to the computer in June of 1981 and additions have been made to disc storage.

There are now more than 700 remote terminals on campus which can be connected to the central facility. Users are also able to utilize a switched network for computer to computer communication, which enables a full off-campus network connection.

For the third year in a row, UBC computer users enjoyed reduced costs. Computing rates were reduced by approximately 25 per cent at the start of the 1981-82 academic year.

PHYSICAL PLANT. The increasing sophis-

PHYSICAL PLANT. The increasing sophistication of University facilities and the growth of computer-based systems is impelling the department toward fundamental changes in its operations. Centralized control of building heating, ventilating and air conditioning equipment and the replacement of an obsolete telecommunications system are being studied actively.

Plans to construct new facilities for the department's stores, shops and offices will necessitate a review of all operations, including inventory control, administrative procedures, materials handling and logistics associated with field work. The department intends to have improvements implemented before the new building is completed in 1983.

All four divisions of the department maintained a high level of activity as a result of construction on campus of new buildings and in the management of building alterations. The department also derived considerable satisfaction in successfully managing erosion-control

projects on the Point Grey cliffs below the University campus. An effective beach berm was completed during the academic year, creating additional sunbathing areas on the beaches at the base of the cliffs.

SPACE AND AUDIO-VISUAL SERVICES. The television-production division of the department continued to produce, in association with various UBC faculties, videotapes of a counselling nature designed to show prospective students the educational opportunities available to them at UBC. The division also videotaped lectures for use in continuing education programs and for showing on the Knowledge Network, the provincewide educational television network. It is anticipated that the activities of this division will continue to increase as UBC develops a closer working relationship with the network.

TRAFFIC AND SECURITY. Our campus department continues to cope well with the difficult task of dealing with traffic and security problems of a population equivalent to a large city. In 1980-81 emphasis was placed on reorganization within the department with respect to systems and deployment of personnel. A two-man building security section surveys and submits to UBC departments recommendations to improve the physical security of the buildings they occupy.

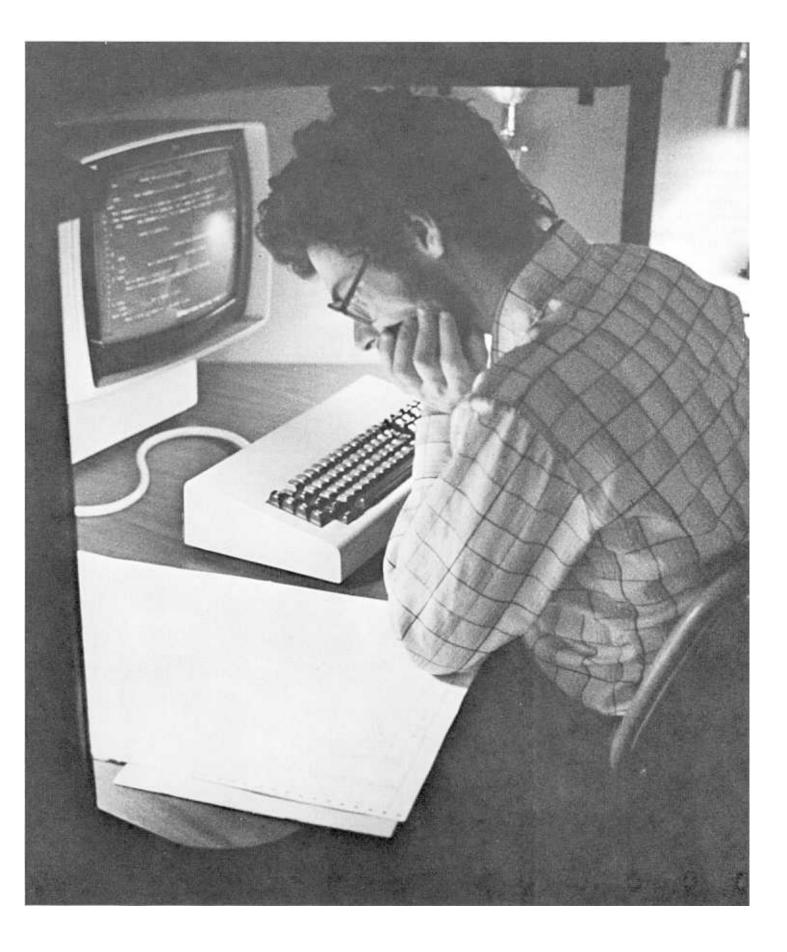
An increasing number of UBC buildings are now protected by electronic intruder alarms. The 22 alarm systems on campus are monitored at the department's communications centre and, as a result, the response time of patrol vehicles is improved greatly.

Al Hutchinson, the department's director, reports that the security patrol section is functioning very efficiently and that patrol personnel are equipped as well or better than any similar campus security force in Canada.

UNIVERSITY CO-ORDINATION OFFICE. This new office has been in existence for just over a year. In 1980-81 a new process for handling student service appointments was implemented for teaching, research and academic assistants. Major enhancements to the student record system of the Registrar's Office have been carried out to provide full support for the student fee-payment system and to facilitate use of academic progress reports for all faculties.

Work continues on a personnel/payroll system for the University. A policy statement for the system, as well as the description, scope and functional statement for it, were completed in 1980-81. Work required to accomplish the installation of the system will continue in 1981-89

DAY CARE SERVICES. Day care services on the campus continued to improve in 1980-81, due to the efforts of parents and other interested persons. A major report prepared by the Day Care Committee emphasized the need to upgrade buildings which house day care units. Several centres received funds from the 1981



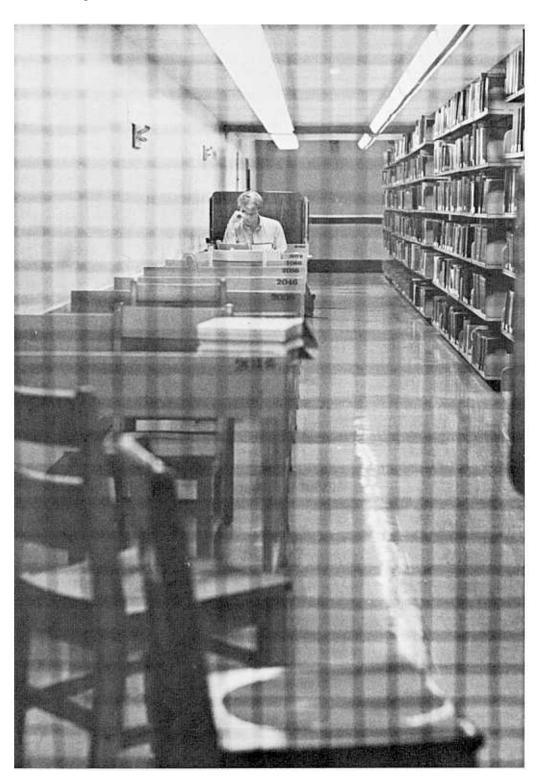
graduating class and the Koerner Foundation for equipment and musical instruments.

Communications with UBC departments and with the elementary school and community recreation program operating in the University Endowment Lands were improved. The Day Care Council worked closely with UBC's Centre for Continuing Education to establish the short-

stay day care centre and with the UEL community recreation program to increase services to school-aged children.

The Day Care Council also served the larger community in the province through advice and consultation for day-care and pre-school groups in Victoria, Sechelt, Kamloops, Prince George, White Rock and Greater Vancouver.

UBC's facilities planning department prepared detailed proposal in 1980-81 for a scheme to link the Main Library, right, with the nearby Sedgewick Library.



Congregation

I regard the University's annual Congregation ceremony as one of the most important events of the year. It signifies that those receiving degrees have fulfilled the rigorous academic requirements set by the faculties of the University and are ready to take their place in industry, the professions and arts or have qualified to enter into further training at UBC or elsewhere. It has been a source of great pleasure to me and to other members of the faculty to note in recent years the increasing number of students as well as family and friends who fill the War Memorial Gymnasium for the three-day ceremony. The high spirits and enthusiasm exhibited by each day's graduating class makes for a celebratory rather than a solemn occasion. I also find it heartening that an increasing number of handicapped students graduate each year, illustrating that the University is doing everything within its power to remove barriers which may have prevented such students from obtaining a higher education in the past.

In the 1980-81 academic year, the Senate of the University awarded a total of 4,415 academic degrees to graduating students — 931 in the fall of 1980 and 3,484 in the spring of 1981. These academic degrees, as well as five honorary degrees, were conferred by Hon J.V. Clyne, who presides over the Congregation ceremony in his capacity as UBC's Chancellor.

On May 27, the first day of Congregation, the University conferred the honorary degree of Doctor of Laws on Elly Ameling, an internationally renowned soprano who has been acclaimed as a lieder singer par excellance and as a recording artist; and on Tommy Douglas, a leading Canadian political figure for more than four decades and leader of the New Democratic Party from 1961 to 1971.

On May 28, the honorary degree of Doctor of Laws was conferred on Harold M. Wright, a UBC graduate and chairman of Wright Engineers Ltd., a leading Canadian mining and engineering firm. Mr. Wright has been honored on numerous occasions for his professional activities and for his involvement in amateur sport in Canada.

On May 29, the final day of Congregation, the University conferred an honorary degree on Edmund Desjardins, a quadriplegic who pioneered the development of rehabilitation services for the physically handicapped in Western Canada and the recently retired manager of the G.F. Strong Rehabilitation Centre in Vancouver. This was particularly appropriate in the light of the fact that 1981 was declared as the International Year of Disabled Persons by the United Nations. An honorary degree was also conferred on the chief justice of the Supreme Court of Canada, Bora Laskin, who was a leading legal educator before being elevated to the bench in the 1960s.

A highlight of the graduation ceremonies is the awarding of medals and prizes to the outstanding students who head their respective graduating classes. The students who distinguished themselves in 1981 are listed below.

Association of Professional Engineers Proficiency Award, \$500 (most outstanding record in the graduating class of Applied Science): David Lawrence Frost (Prince George).

Helen L. Balfour Prize, \$500 (head of the graduating class in Nursing, B.S.N. degree): Heather M. Abramenko (North Vancouver).

Dr. Maxwell A. Cameron Memorial Medal and Prize (head of the graduating class in Education, Elementary Teaching field, B.Ed. degree): Cynthia L. Homenuke (Smithers).

Dr. Maxwell A. Cameron Memorial Medal and Prize (head of the graduating class in Education, Secondary Teaching field, B.Ed. degree): Shannon Louise Murdoch (Prince George).

Ruth Cameron Medal for Librarianship (head of the graduating class in librarianship, M.L.S. degree): Patricia Irene Lysyk (Vancouver).

Canadian Institute of Forestry Medal (best overall record in Forestry in all years of course, and high quality of character and leadership): Heather Jane Cook (Prince George).

College of Dental Surgeons of British Columbia Gold Medal (head of the graduating class in Dentistry, D.M.D. degree): Ernst J. Schmidt (Vancouver).

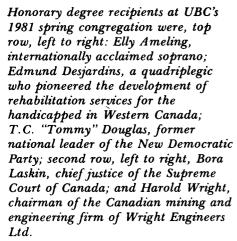
Peter Ward, right, the first Canadian Inuit to receive a law degree, is congratulated by Hon. Bora Laskin, chief justice of the Supreme Court of Canada, who was the recipient of the honorary degree of Doctor of Laws on May 29, 1981.

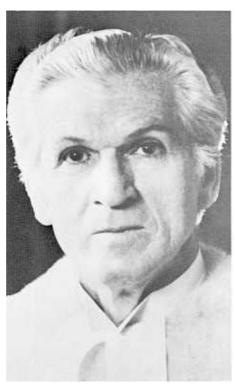














College of Dental Surgeons of British Columbia Gold Medal in Dental Hygiene (leading student in the Dental Hygiene Program): Karen Maureen McDonald (North Vancouver).

Governor-General's Gold Medal (head of the graduating classes in the Faculties of Arts and Science, B.A. and B.Sc. degrees): Allen Dale Hunter (Penticton).

Hamber Prize and Medal, \$250, (head of the graduating class in Medicine, M.D. degree, best cumulative record in all years of course): Michael Frederick Allard (Vancouver).

Horner Prize and Medal for Pharmaceutical Sciences, \$200 (head of the graduating class in Pharmaceutical Sciences, B.Sc. Pharm. degree): Michael Irving Millman (Vancouver).

Kiwanis Club Medal (head of the graduating class in Commerce and Business Administration, B. Com. degree): Paul David Smith (North Vancouver).

Law Society Gold Medal and Prize (call and admission fee) (head of the graduating class in Law, LL.B. degree): Nathan Harold Smith (Vancouver).

Dean of Medicine's Prize (School of Rehabilitation Medicine) (head of the graduating class in Rehabilitation Medicine, B.S.R. degree): Krista June Nelson (New Westminster).

Physical Education Faculty Prize, \$200 (head of the graduating class in Physical Education, B.P.E. degree): Susan Christine Beulah (Summerland). Recreation Society of British Columbia Prize (head of the graduating class in Recreation, B.R.E. degree): Nancy E. Alexander (North Vancouver).

Royal Architectural Institute of Canada Medal (graduating student with the highest standing in the School of Architecture): Donald George Hazleden (Vancouver).

Wilfred Sadler Memorial Gold Medal (head of the graduating class in Agricultural Sciences, B.Sc. (Agr.) degree): Sandra Karen Murray (Richmond).

Special University Prize, \$200 (head of the graduating class in Fine Arts, B.F.A. degree): Cameron Ian MacLeod (Vancouver).

Special University Prize, \$200 (head of the graduating class in Home Economics, B.H.E. degree): Nicole Ethel Irene Holman (Richmond).

Special University Prize, \$200 (head of the graduating class in Licentiate in Accounting): M. Ellen Seaborn (Vancouver).

Special University Prize, \$200 (head of the graduating class in Music, B.Mus. degree): Kristina Franciska Sutor (North Vancouver).

University Medal for Arts and Science (proficiency in the graduating classes in the Faculties of Arts and Science, B.A. and B.Sc. degrees): Alexander R. Jones (Vancouver).

Deaths

With deep regret, I record the names of active and retired members of the UBC faculty who died during the 1980-81 academic year.

Active members of the faculty who died were: Prof. G. Harry Cannon, a UBC graduate and member of the Faculty of Education for 22 years, on June 5, 1981;

Prof. Arthur E. Link of the Department of Asian Studies, on Sept. 8, 1980;

Dr. Ronald C. Riddell, a member of the Department of Mathematics for 15 years, on Jan. 12, 1981;

Dr. Susan Wood, a Canadian literature expert in the Department of English, on Nov. 12, 1980; and

Prof. Park O. Davidson of the Department of Psychology and his wife, Sheena, of the School of Nursing, in a traffic accident in the Interior of B.C. on Dec. 21, 1980.

Retired members of the faculty who died during the academic year were:

Prof. Jacob Biely, an internationally known agricultural scientist whose association with UBC spanned 50 years, on June 3, 1980;

Dr. Rachel Giese, who initiated the teaching of Italian at UBC when she joined the faculty in 1956, on Aug. 31, 1981;

Wilfrid G. Heslop, a member of the Department of Civil Engineering for 27 years from 1945 until 1972, on Sept. 27, 1980.

Walter S. Lanning, who joined the Faculty of Education in 1957 when it was established at UBC and set up the training program for school librarians, on June 2, 1981; and

Prof. Archibald Peebles, a UBC graduate and member of the civil engineering department in the Faculty of Applied Science for 39 years, on June 10, 1981.

It seems appropriate here to record the death of Dr. John Liersch, former head of forestry programs at UBC and a well known figure in the B.C. forest industry. He was closely involved in UBC affairs from 1962 to 1976 as a member of the Board of Governors and the Health Sciences Centre management committee. He died on March 9, 1981.