

UBC REPORTS

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John Chong photo

Man In Motion

Rick Hansen speeds along West Mall on a hand-propelled three-wheeled cycle. The 15-kilogram Varna II cycle is highly manoeuvrable and has 18 gears for a variety of uses. Hansen is national Fellow, Disabilities in the Rick Hansen National Fellow Program at UBC. He is also director of the Life Skills Motivation Centre, which is part of UBC's Institute of Health Promotion Research.

BoG approves fee for new MBA program

by **Abe Heffer**
Staff writer

UBC's Board of Governors has approved an increase in tuition fees for a radically revised MBA program in the Faculty of Commerce and Business Administration.

Tuition for the new 15-month program, which goes to Senate for approval next month, will be \$7,000 for 1995-96, which is still far short of full cost recovery. The faculty may eventually consider recommending a further increase in tuition.

The revised program means a single,

15-month program will replace the traditional two, eight-month sessions and enable graduates to enter the business world five months earlier. Anticipated earnings during this initial period in the work force would more than defray the \$2,500-increase in tuition, said Acting Dean Derek Atkins.

A part-time study program, which normally requires three years of study, will also be available in September 1996.

"The foundation material of business education has been completely rewritten and restructured by the Faculty of Commerce and Business Administration to

See **MBA** Page 2

Is it real, or is it acoustical virtual reality?

by **Abe Heffer**
Staff writer

It's one thing to don a pair of headphones to listen to a selection of recorded concert hall music. It's another to slip on a pair of headphones to listen to a piece of concert hall music in a concert hall that hasn't even been built yet.

However, as a result of research being done by Asst. Prof. Murray Hodgson and a group of UBC master's students it will soon be possible to experience the acoustical environment of an area through computer simulation.

It's called acoustical virtual reality, or auralization. And as the term would suggest, it is the acoustical equivalent of visualization.

"Using a computer, it will be possible to simulate the acoustical environment of a particular room in such a way that the person feels as if he or she is in the real environment," said Hodgson, who has a joint appoint-

ment in the departments of Occupational Hygiene and Mechanical Engineering.

"Auralization is increasingly becoming an important aspect of my research activity. In addition, industrial applications will result in cost-saving implications for people who are in the business of designing and building concert halls, theatres and offices."

Hodgson is currently writing the software and assembling the computer hardware that will make auralization a virtual acoustical reality at UBC within one year. Although there are operational systems in existence at other labs around the world, Hodgson said they are limited by very large calculation times and computer hardware requirements.

"Auralization involves complex signal processing techniques which are implemented using computers and signal processing cards," Hodgson explained.

See **NOISE** Page 2

Federal funding slashed

Cuts pose threat to research programs

UBC researchers are bracing for bad news as Canada's largest research funding agencies decide how to make cuts announced in the recent federal government budget.

Everyone from graduate students to directors of prestigious research centres will feel the pinch as agencies funding research in medicine, science, engineering, social sciences and humanities are forced to slash their budgets by more than \$200 million in the next three years.

UBC's share of those cuts is unknown, but university researchers here stand to lose millions of dollars, threatening well-established programs and making it difficult to initiate new projects.

The university's largest source of research funding, the Natural Sciences and Engineering Research Council (NSERC), will be cut 14 per cent over the next three years, a total shortfall of \$142 million from previously approved funding levels.

The Medical Research Council (MRC), the next largest funding agency, will lose 10 per cent of its budget over three years, while the Social Sciences and Humanities Research Council (SSHRC) will suffer a 14 per cent cut.

UBC initiatives that rely on major grants from other sources may also be in jeopardy. The Centre for Human Settlements must renegotiate a \$6-million grant with the Canadian International Development Agency, which had its budget trimmed by \$300 million.

As well, both the National Networks of Centres of Excellence and the Canadian Institute for Advanced Research suffered cuts.

The worst loss, however, will be from NSERC funding. UBC is a major recipient of NSERC grants, second among Canadian universities this year only to the University of Toronto, but often ranked first in the country.

UBC researchers received nearly \$29 million from NSERC this year in research grants, equipment and fellowships, university-industry programs and strategic grants.

Martha Salcudean, associate vice-president, Research, said the cuts to

NSERC will have a very negative impact on UBC and further erode Canada's already slim research base, leaving capable researchers without the funding they need to continue their work.

"There are some very good researchers who will be losing their research funding and important programs that will be cancelled," she said.

"On one hand, we tell our young people to choose a career in science and technology, but on the other we are not using the capacity we already have in our universities. That's a contradiction I don't understand," Salcudean said.

The MRC will see its budget reduced by 10 per cent over the next three years for a total loss of almost \$60 million.

"The obvious effect is that it is going to be harder for people to get a grant," said Dr. Bernard Bressler, head of the Dept. of Anatomy and MRC regional director for UBC.

In 1994/95, 246 UBC researchers shared about \$17 million in MRC funding for core programs.

"As of September last year, only 20 per cent of the faculty who applied for new grants were successful," Bressler said. "That's down five per cent from the year before because of budget constraints; now we have a budget cut."

Bressler also noted that the number of faculty receiving grant renewals may decrease to as low as 50 per cent from a current level of 65 per cent.

In addition, a special fund sponsored by the council, which supports medical students engaged in summer research projects during their first two years of study, may be in jeopardy, he said.

Bressler anticipates that cuts in federal transfer payments to the provinces — beginning next year — will have an impact on the infrastructure required to support the research effort.

Infrastructure costs are paid out of the university's general purpose operating fund which is determined by the amount received from the province's transfer payment allocation.

"It is important to realize that the full impact is not yet known," Bressler cautioned.

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Martha Salcudean

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Letters

LETTERS POLICY

UBC Reports welcomes letters to the editor on topics relevant to the university community. Letters must be signed and include an address and phone number for verification. Please limit letters, which may be edited for length, style and clarity, to 300 words. Deadline is 10 days before publication date. Submit letters in person or by mail to the UBC Public Affairs Office, 207-6328 Memorial Rd., Vancouver, BC, V6T 1Z2, by fax to 822-2684 or by e-mail to pmmartin@unixg.ubc.ca.

GVRD does not manage UEL

Editor:

Page 12 of the March 9, 1995 UBC Reports states "The UEL . . . is managed by the

Greater Vancouver Regional District on behalf of the province." This is untrue. It is managed by an on-site management directly responsible to the minister of Municipal Affairs. The GVRD has nothing to do with it, but so much misinformation about the UEL has been spread over many

years by the proponents of incorporation that anyone who makes an unchecked statement about this area has a very good chance of getting it wrong.

Ralph Spitzer
Prof. Emeritus, Pathology
Vancouver, B.C.

MBA

Continued from Page 1

delivered in a single integrated core followed by a choice of specialization," said Atkins.

"The movement away from a general management degree to one that adds real value through a specialized course of study has been greeted with keen interest by prospective students.

"An increase in tuition fees was necessary to help defray some of the costs associated with running enhanced student services like the Career Centre and the Study Abroad and Exchange Program."

The revised curriculum will enable students to meet the dramatically changing expectations of employers.

With middle levels of management shrinking and businesses taking on a flatter organizational structure, the program design committee of faculty members Ron Giammarino, Ken MacCrimmon and David McPhillips determined that specialization would be the key component of a revamped MBA pro-

gram. It also capitalizes on the faculty's pre-eminence as the top research business school in Canada.

After completing a 14-week single integrated course, students will move into one of 11 areas of specialization, including international business, entrepreneurship, banking and international finance, and management information systems.

These specialized courses will be taught in six, six-week modules. The fourth module period will feature a hands-on internship program and work experience with a Canadian company.

"The entire program has been very strongly supported by the faculty's advisory council, which consists of representatives from the Canadian business community," said Atkins.

"Although other universities in this country are moving toward integrated MBA core programs, the enormous range of specialty courses that will be available at UBC is totally with-

out precedent."

Six, one-week sessions devoted to professional development will form a common thread throughout the entire 15-month full-time program.

Students will have an opportunity to build skills associated with leadership, career guidance and personal communication. In addition, they will be encouraged to take part in UBC's international exchange programs.

Students with limited management background, or who lack adequate preparation in prerequisite courses, will be required to participate in a three-week pre-core program consisting of non-credit basic business education. Topics will include accounting, computing, and economics.

"The implementation of this revised program over the last eight months has involved a huge effort on the part of the faculty," said Atkins. "This program will put UBC at the forefront of educational innovations amongst business schools."

Noise

Continued from Page 1

The process involves digitizing a particular sound signal, such as speech or music. A computer model is needed to simulate the way a particular room or area would transform those signals and how the human ears would transform that sound.

Then, you must have the capability of replaying these sounds to a person through headphones, without distortion. Hodgson said

the procedure involves compensating, electronically, for both the headphones and the listener's ears, so that the result of the simulation is the sound that would arrive at the listener's two eardrums in the real environment.

Hodgson and his team members are currently working with researchers in UBC's School of Audiology and Speech Sciences and the Psychology Dept. at the University of Toronto in a project

involving speech understanding in the elderly.

Through auralization, they will attempt to determine how spatial characteristics of sounds affect the ability of the elderly to understand speech by simulating difficult hearing situations.

Hodgson said UBC will likely have two auralization systems in operation in about a year, with both industrial and academic applications.

Budget

Continued from Page 1

The MRC is scheduled to meet in Montreal this week to decide how it will distribute the cuts. Results will be published in the April issue of Decisions, MRC's in-house newsletter.

UBC, which traditionally ranks third after Montreal's McGill University and the University of Toronto in funding from the MRC, received 10.4 per cent of the council's total budget last year.

Olav Slaymaker, associate vice-president of Research for Humanities, Interdisciplinary Initiatives and Social Sciences, points out that the differential impact of a 14 per cent cut is far greater on SSHRC's \$100 million budget than on NSERC's annual allotment of \$500 million and the 10 per cent cut on MRC's \$300 million.

"It's reasonable that everyone should take a cut and share the load but unreasonable that the council with the smallest amount

of funding should take as big a cut as those with much larger budgets," he said.

For SSHRC, federal budget cuts translate into an immediate six per cent decrease in individual research operating grants and more extensive, but still undefined, cuts to strategic research grants for larger, interdisciplinary projects.

Two initiatives in the latter category are the Fraser Basin Eco-system Study, led by Michael Healey at the Westwater Research Centre, and the Entrepreneurship and Venture Capital Research Centre, directed by Commerce Prof. Raphael Amit.

Slaymaker says income from UBC's Hampton Place endowment is more important than ever. The Hampton fund, directed to new social sciences and humanities research initiatives and funded by the proceeds of land lease sales for market housing on campus, is

scheduled to rise to \$900,000 by 1997.

From a national perspective, Slaymaker noted that the removal of all funding support to the Canadian Federation of the Humanities and to the Social Science Federation of Canada will have far-reaching implications for the roughly 100 academic associations they represent.

With no central organization lobbying on their behalf, individual associations will be forced to generate their own income to run meetings and publish journals.

The result, said Slaymaker, is that small academic associations will either become more regional or collapse altogether and affiliate with American counterparts.

"It's a shadow of the political disintegration that's occurring in the whole country," said Slaymaker. "We'll have a split Canadian personality with no central body of Canadian academic effort."



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Managing Editor: Steve Crombie
(scrombie@unixg.ubc.ca)

Editor: Paula Martin (pmmartin@unixg.ubc.ca)
Production: Stephen Forgacs (forgacs@unixg.ubc.ca)
Contributors: Connie Filletti (filletti@unixg.ubc.ca), Abe Heffer (heffer@unixg.ubc.ca), Charles Ker (charlesk@unixg.ubc.ca), Gavin Wilson (gavinw@unixg.ubc.ca).

Editorial and advertising enquiries: (604) 822-3131 (phone), (604) 822-2684 (fax).

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Changes in patent law will affect researchers

The University-Industry Liaison Office (UILO) is urging UBC researchers to disclose inventions to the UILO before changes to U.S. patent law come into effect.

Beginning June 8, the U.S. patent term for an invention will be 20 years, measured from the filing date of the patent application. Currently, the U.S. patent term for an invention is 17 years from the date of grant of the patent.

Since it can take several years to obtain a patent, this change in patent law may lead to shorter patent term protection.

The UILO is asking that all researchers review their work in progress to determine if they have an invention to disclose.

These disclosures should be submitted to the UILO as soon as possible, and the office will attempt to fast-track its evaluation to make any necessary patent applications before June 8.

Researchers should remember that it is important they follow correct procedures for evidencing the date of an invention. As UBC policy number 88 states, if a patentable device or process might arise in the course of work on any project, "laboratory records should be kept in a bound, not loose-leaf, notebook and be dated, signed and witnessed as a routine procedure."

For more information on this and other U.S. patent changes, contact the UILO at 822-8580.

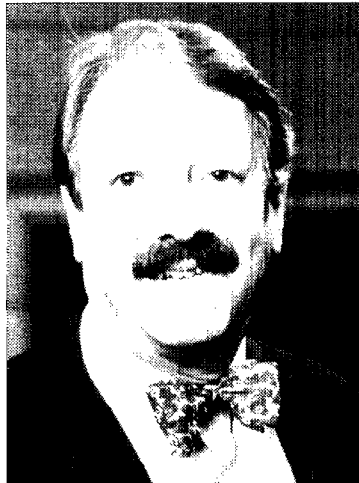
1995 honorary degree recipients

UBC alumnus known as top of his field

Thomas Franck, a UBC alumnus recognized worldwide as one of this generation's most productive and influential international legal scholars, will receive an honorary degree during the university's spring Congregation ceremonies on June 2.

Since 1965, Franck has been peerless as the director of the Center for International Studies at New York University.

He was cited by the UBC Tributes Committee, which recommends nominees for honorary degrees, for his significant contribution to the betterment of international law and human rights on be-



Thomas Franck

half of foreign governments.

During his career he has served as a legal advisor and counsellor to the governments of Tanzania, Kenya, Zanzibar, Mauritius, Solomon Islands, El Salvador, Chad, Bosnia and Herzegovina.

The author of numerous works on international and constitutional law, Franck is a three-time recipient of the Certificate of Merit awarded by the American Society of

International Law in recognition of his writing.

(This is the fourth in a series of articles featuring UBC's honorary degree recipients.)

Author places stories in rural B.C. settings

Celebrated novelist and UBC graduate Jack Hodgins, author of *Spit Delaney's Island*, *The Resurrection of Joseph Bourne* and other literary treasures of Canadian West Coast regional literature, will be awarded an honorary degree during UBC's spring Congregation ceremonies on June 1.

A resident of Victoria, Hodgins is a professor of creative writing at the University of Victoria where he has inspired hundreds of students with his superbly crafted style which ranges from realism to experimental postmodernism.

Set mostly in small towns and along the back roads of rural Vancouver Island, his writing creates a compelling portrait of the region's people and history.



Jack Hodgins

His fiction has won the Governor General's Award, the Gibson's First Novel Award, the Eaton's B.C. Book Award, the Commonwealth Literature Prize (Canada-Caribbean region) and the Canada-Australia Prize.

Several of his stories and novels have been translated into other languages including Dutch, Hungarian, Japanese, Russian, Italian and Norwegian.

In nominating him for an honorary degree, the UBC Tributes Committee said that Hodgins had brought renown to the university and the province as one of Canada's finest fiction writers and as an innovative stylist and distinguished academic.

(This is the fifth in a series of articles featuring UBC's honorary degree recipients.)



Gavin Wilson photo

Mechanical Engineering students Ian Colotla, (left) fourth-year computer automation option, and Wendy Ho, third-year electro-mechanical option, with an x-y table that Colotla designed and built. The table uses computer controls and a linear motor to make precision movements accurate up to one-thousandth of a millimetre. The same principles are used in industrial applications from machine tooling to making circuit boards.

Engineering program takes novel approach

by Gavin Wilson

Staff writer

A new program is educating Applied Science students in the interdisciplinary area of electrical and mechanical engineering design while giving them valuable industrial experience.

The five-year Electro-Mechanical Engineering Design program combines bachelor and master of engineering degree programs and provides for two summers working in industry.

As computers become more closely integrated into many products and processes, mechanical engineers must have an increasing knowledge of electronics and computer operation and software, said Yusuf Altintas, professor of Mechanical Engineering and co-ordinator of the program.

"This is a bridge between the two fields," Altintas said of the program, which was developed jointly by the departments of Mechanical Engineering and Electrical Engineering.

As well as the fundamental analysis and design knowledge required of all mechanical engineers, students graduating from this program will have special abilities in integrating computers into the design of mechanical devices and processes.

"Since current technology requires an interdisciplinary knowledge of mechanical, electrical and computer systems, the graduates from this program are expected to be in high demand by industry," Altintas said.

Ten students in second-year Mechanical Engineering will be chosen to enter the program according to their academic record, design aptitude and interpersonal

and communication skills.

"The reason we ask for good communications and interpersonal skills is simple," Altintas said. "No one can make an aircraft on their own; it requires a team."

When students are admitted to the program, they immediately spend a summer working in industry, something they repeat at the end of their third year of study.

Third- and fourth-year curricula are a mix of Mechanical Engineering courses and Electrical Engineering courses in electronics.

At the end of year four, the graduate school year of 12 months begins on May 1, with the students working in design teams comprising two to four students, a professor and an engineer from industry.

Each team takes on two parallel projects. The first involves designing and building a piece of complex machinery, for example, a gear box or a hydraulic press. The second project requires they design a single-board computer to control the machinery.

"It's a very hands-on approach. These are not fundamental research projects," Altintas said. "We want them to be similar to professional projects done in industry. In fact, we hope the projects will be initiated by the companies in which the students do their co-op work terms."

While doing these projects, students will also take related graduate courses. At the end of their fifth year they receive a Bachelor of Applied Science and a Master's of Engineering in Mechanical Engineering simultaneously.

The program should produce its first graduates by May, 1997.

Recently approved by Senate, there are already students enrolled in the program.

Agreement opens Asia to UBC students

by Gavin Wilson

Staff writer

For one UBC graduate student, an exchange agreement with a Philippine university provided a chance to meet face-to-face with rural managers of rice and livestock co-operatives.

For another, it gave an opportunity to conduct research on genetic differences in tropical fish, which will strengthen her PhD thesis on the disease resistance of B.C.'s coho salmon.

This exchange program, one of the very few focusing on graduate students, is among the benefits that UBC has gained from membership in a consortium of Southeast Asian universities.

Consortium supporters on campus say this is just the beginning. As links with these universities grow, so will potential opportunities for both students and faculty.

Formed in 1989, the Southeast Asian University Consortium for Graduate Education in Agriculture and Natural Resources unites five universities to share resources and expertise and enhance graduate education and research.

UBC was invited to join in 1993, and officially signed on last November as an associate member, along with Australia's University of Queensland.

The founding members are Indonesia's Universitas Gadjah Mada and Institut Pertanian Bogor, Thailand's Kasetsart University, Malaysia's Universiti Pertanian and the University of the Philippines, Los Banos.

George Kennedy, who facilitated UBC's membership in the consortium, is the Faculty of Agricultural Sciences' director of International Programs.

He says UBC is an ideal partner for the consortium, with its Pacific Rim location, pre-eminence in Asian research and strong programs in agriculture, environmental studies, fisheries, forestry, and resource management.

Belonging to the consortium can also help strengthen existing UBC programs, he adds.

"For example, we have no course on agricultural extension here, but now we can offer it through the exchange program. The consortium can strengthen funding opportunities. Such partnerships also promote interdisciplinary research across campus in natural resources."

Down the road, Kennedy



Gavin Wilson photo

Shannon Balfry, who is working on a PhD in Animal Science, went to a Malaysian university to conduct research under an exchange agreement with Southeast Asian universities. Here at UBC, she looks at genetic variations in coho salmon strains from different B.C. river systems.

hopes that consortium members will develop programs together.

"In the future, it may not be unreasonable to think of the consortium as one university with seven campuses, each with its own strengths, expertise and resources."

For the time being, the exchanges are the most visible aspect of the consortium's activities. They allow graduate students to carry out research or take courses overseas, and get credit toward their UBC degree.

Among the other benefits a semester abroad can bring, Kennedy says, are language practice, insight into other cultures, international experience, different expertise and access to courses not available at UBC.

Faculty exchanges have been limited to short-term visits, although that may change later. So far, Maureen Garland, Brent Skura, Murray Isman and Rick Barichello, all from Agricultural

Sciences, have made visits funded with B.C. Asia Pacific Scholars Awards.

As well as the exchanges, consortium members are sharing information on courses, research expertise, faculty members and library resources, Kennedy says.

Andrew Howard, director of International Programs in the Faculty of Forestry, is also excited by the possibilities the consortium opens for his faculty.

Although there have been no exchanges yet, there are several students, especially at the graduate level, who are interested in international work, he says. The faculty is also co-sponsoring an international conference with Malaysia's Universiti Pertanian next year.

"The consortium has great potential for us," Howard says. "It is consistent with our goal of expanding activities in Pacific Rim countries. We can

also act as ambassadors, improving understanding of Canadian forestry practices."

Andrea Harris, studying for her master's degree in Agricultural Economics, went to the Philippines on a four-month exchange last spring. There she conducted research on agricultural co-operatives, which parallels her thesis research on Canadian co-ops.

After growing up on the Canadian prairie, with its huge, mechanized farms, it was an eye-opener for Harris to see draft animals in use and the intensive labour in the rice paddies.

Harris also found that co-ops have a different role in the Philippines, where they are used as a development tool and are often imposed from above by government. This, however, distorted key aims of co-ops, such as community control, she says.

Travelling from village to village, she interviewed managers of 10 rice and livestock co-ops in the provinces of Laguna and Batangas. She found that grassroots, self-funded co-ops were doing best.

"I have always been interested in development issues, and this exchange gave me valuable experience that would otherwise be hard to get," Harris says.

As well as broadening her perceptions of co-operatives and how they work in developing countries, the exchange gave her fresh insight into Canadian agriculture — and into her own character.

"You learn a lot about yourself and how you deal with situations that might make you uncomfortable. It's a real test of your character," she says.

Another exchange student, Shannon Balfry, who is doing her PhD in Animal Science, went to Malaysia's Universiti Pertanian to conduct research

with funding from a Canada-ASEAN Centre/Asia Pacific Foundation travel grant.

At UBC, she looks at genetic variations in coho strains from different B.C. river systems, to see which may be related to the ability to resist diseases.

The results of her study could eventually benefit B.C.'s growing aquaculture industry.

If there is a genetic component to disease resistance, then aquaculturalists could breed it into fish stocks, reducing the need for antibiotics, which have health and environmental impacts.

Travelling to Malaysia was an opportunity for Balfry to work with a different fish species — one that lives in warm water and is exposed to different pathogens — to see if her hypothesis held true.

"The results were perfect. They fit in nicely with my coho work," says Balfry, who will incorporate the findings into her thesis.

Balfry said she was pleasantly surprised when she arrived at Universiti Pertanian, a beautiful, modern campus where graduate courses are taught in English. Even the library was predominantly English, and featured the latest CD-ROM database systems.

"I'd like to go back as a post-doctoral fellow," she says. "With the world becoming a smaller place, to have international experience puts you a little ahead when competing for jobs. Especially as a graduate student, it's an advantage."

Anyone interested in learning more about the exchange program — current and prospective graduate students or faculty — can find out more at an information session on Thursday, March 30, from 1 to 2 p.m. in Room 158, MacMillan Building.



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Notice to UBC Staff Pension Plan Members

Your Board of Directors is pleased to invite you to the Annual General Meeting of the UBC Staff Pension Plan to be held Thursday, April 27, 1995, from 4 p.m. to 5:30 p.m. in the Ballroom of the Graduate Student Centre, 6371 Crescent Road.

Refreshments will be served. Free Parking Passes will be Available at the Door.

UBC CONTINUING STUDIES

presents

ECOLOGY, POLITICS AND CLEARCUTTING

Patrick Moore

from the Forest Alliance of British Columbia
(Co-founder of Greenpeace)

Douglas Hopwood

Forestry Consultant
Author of "Principles and Practices of New Forestry"

This two-hour session will provide current and varying perspectives on the issues confronting the forest industry in British Columbia. Audience participation with questions and comments will be encouraged.

**Thursday, March 30, IRC Lecture Hall #6
7:30 - 9:30 p.m.**

Forum

Faculty Association strives to maintain quality of education at UBC

by Tony Sheppard

Law Prof. Tony Sheppard is President of the UBC Faculty Association.

These days, it seems that every aspect of university life is subject to a welter of criticism. Even the quality of university teaching is being questioned. Some also criticize faculty associations for playing an obstructionist role, and frustrating attempts to improve university teaching. These criticisms are ill-informed. The quality of teaching at Canadian universities, in general, and at UBC, in particular, is second to none. Of course in teaching, as in every other form of human endeavour, one always strives to do better. The Faculty Association has played and continues to play a pivotal and constructive role in attempts to improve teaching at UBC.

The exemplary quality of university teaching is amply demonstrated by a Statistics Canada survey which found that 86 per cent of Canadian university graduates are either satisfied or very satisfied with the teaching quality in their programs. At UBC, the university's

1994/95 Budget and Planning Narrative reports that annual student evaluations of teaching in thousands of course sections result in only 30 to 40 less than satisfactory teaching assessments. The budget narrative goes on to state that there is no discernible problem whatever with the quality of teaching at UBC:

"What was most striking was that teaching is overwhelmingly positively evaluated by students and that in the case of the small proportion of instructors whose teaching is evaluated as less than satisfactory, approximately one-third are not with the university the following year, one-third have taken action to improve their teaching effectiveness. Of the balance, some are reassigned to courses in which they are more effective leaving a very small number who repeat the same problems in the following year."

For an individual member of faculty to become a good teacher and remain so over the years requires continuous dedication and effort. The Faculty Association plays an important role in sustaining the development of teaching skills throughout a member's career. The goal of improving the quality of teaching and the purposes of the Faculty Association are completely consistent. The association's constitution states that

its purposes are to promote the welfare of its members and the University of British Columbia and to act as bargaining agent for its members

Quality of teaching depends primarily on the quality of faculty. To recruit and retain the most qualified faculty, the association must ensure through bargaining and, if necessary, arbitration, that the university does not shirk its responsibilities to provide financial rewards for good teaching through career progress increments, merit awards, etc.

The association has also succeeded in obtaining rights of bargaining for part-time faculty and to bargain not only salary and economic benefits, but also conditions of appointment for sessional and part-time faculty. The Faculty Association

and the university administration are in the final stages of bringing into effect a new agreement covering conditions of appointment and providing some job security for these individuals. Sessional and part-time faculty bear heavy teaching loads, and these new conditions of appointment will help to ensure that the

university rewards their good teaching with offers of continuous employment.

When the Faculty Association submits a denial of reappointment, promotion and tenure to arbitration, a critical concern is whether or not the quality of the candidate's teaching has been fairly and accurately evaluated beginning at the departmental level and proceeding onwards and upwards to the president of the university.

The appeal board has observed that candidates' teaching records are sometimes undervalued, resulting in an unfair loss of employment. In taking such appeals to arbitration, the Faculty Association seeks to validate teaching as a worthy criterion for granting reappointment, tenure or promotion.

Defending academic freedom and drawing public attention to deteriorating teaching conditions on campus are only two examples of how the Faculty Association serves to improve the quality of instruction at UBC.

This ongoing commitment is perhaps best exemplified by the association's founding of the Centre for Faculty Development and Instructional Services in 1987. The association continues to be represented on the advisory board of the centre and most of the centre's programs are conducted by faculty volunteers.



Tony Sheppard



Dave Thomson photo

Cutting Edge

Shyan Ku from UBC's Dept. of Electrical Engineering was one of more than 100 Applied Science graduate students who showed their research wares during the B.C. Advanced Systems Institute Graduate Students Presentation Day at the Robson Square Conference Centre. Ku's project involved a machine that allows microsurgions to manipulate delicate tissue more safely and efficiently.

Effect of fisheries extends to phytoplankton: study

by Gavin Wilson

Staff writer

The world's fisheries have a greater impact on ocean food chains than previously believed, says a study by Daniel Pauly, a professor at UBC's Fisheries Centre, and Villy Christensen of the International Centre for Living Aquatic Resources Management in Manila, Philippines.

The study, published in the March 16 issue of the science journal *Nature*, found that a surprising percentage of organisms at the most basic level of the food chain are needed to support global fisheries.

Until now, the authors say, studies of fisheries problems usually emphasized the decline of the exploited fish populations, which are generally on top of the food chains.

It was assumed that fisheries have little impact on the lower links of the food chain: zooplankton, the small shrimp-like animals on which many fish feed, and phytoplankton, the microscopic algae that zooplankton eat.

Zooplankton are eaten by small fish, which are food for larger fish which are in turn eaten by ocean-going predators at the top of the food chain, such as tuna.

The researchers based their calculations on the 90 million tonnes of fish landed each year by the world's fisheries, and added another 30 million tonnes of by-catch, fish accidentally caught in nets and then discarded at sea.

The researchers estimated that eight per cent of the world's production of phytoplankton, four times the previous estimate, are required to sustain the total catch of 120 million tonnes.

This, however, is an average that combines a low of two per cent in open ocean waters with much higher figures in areas where the most intensive fishing occurs. Nearly 90 per cent of the world's catch is taken in fresh water, upwellings and continental shelves, the narrow bands of water less than 200 metres deep.

On shelves, the percentage of phytoplankton production required to sustain the fisheries is as high as 35 per cent, which the authors call "a surprisingly high figure."

In other words, in areas where most fishing is done, one of every three algal cells works to support the fishery.

But even these high figures could be an underestimate, Pauly and Christensen said. They did not include unreported

and illegal catches and did not take into account the fact that some phytoplankton production is recycled by the algae themselves.

The researchers say this is strong evidence for the limits of global fisheries and justifies concerns for the sustainability and biodiversity of the world's marine life.

Pauly and his colleagues at the UBC Fisheries Centre are now doing a detailed study of the global food and primary production requirements of marine mammals, and a global study of the extent of unreported and illegal fisheries catches.

Their ultimate aim is to estimate the size of the catch that the world's fisheries can take without depleting fish stocks or endangering top predators such as marine mammals and sea birds.



Charles Ker photo

Woman Of Words

Vancouver author Joy Kogawa takes a break in the courtyard of the Buchanan complex before reading from her acclaimed works, *Obasan*, and its sequel, *Itsuka*. Kogawa was the final speaker in the Dept. of Creative Writing's reading series sponsored by the Canada Council.

Calendar

March 26 through April 8

Sunday, Mar. 26

Collegium Musicum

John Sawyer/Morna Edmundson, directors. VST, chapel of the Epiphany at 8pm. Call 822-5574.

Monday, Mar. 27

Electrical Engineering Seminar

Whither Neural Networks. Prof. Igor Aleksander, head, Electrical Engineering, Imperial College, London. CEME 1202 at 8:30am. Call 822-6660.

Origami Demonstration

Discover the delights of Japanese paper folding. Joseph Wu shows how to create amazing art objects from the special papers that have been developed over the centuries. UBC Bookstore Art/Design section from 12-1:30pm. Call 822-0587.

UBC Zen Society Colloquium

Beginning Zen. Graham Good, English. Buchanan D-201 at 2:30pm. Call 822-4086.

Biochemistry/Molecular Biology

Tumour Suppressor Genes: Exploring Their Clinical Applications. Dr. Stephen Friend, Molecular Genetics, Massachusetts General Hosp., Boston. IRC #4 at 3:45pm. Refreshments. Call 822-9871.

Asian Studies Colloquium

An Investigation Of An Early Western Zhou Bronze: The Xueding. Robert Stephenson, Asian Centre 604 from 12:30-1:30pm. Call 822-3881.

Plant Science Seminar

Physiological Changes Associated With Aging Potato Tuber. Rick Knowles, U. of Alberta. MacMillan 318-D at 12:30pm. Call 822-9646.

Astronomy Seminar

Molecular Gas In Local Group Galaxies. Christine Wilson, McMaster U. Geophysics/Astronomy 260 at 4pm. Refreshments at 3:30pm. Call 822-2696/2267.

Centre for Applied Ethics Colloquium

Finding The Lost Lawyer: Kronman On Practical Wisdom/Professional Ethics. Dr. Tim Dare, Philosophy, U. of Auckland, NZ. Angus 415 from 4-6pm. Call 822-5139.

1995 Comparative Physiology Seminar

Transport Of Para-amino Hippurate And Urate By Reptilian Nephrons. Dr. Bill Dantzer, Physiology, U. of Arizona, Tucson. BioSciences 2449 at 4:30pm. Call 822-4228/822-3168.

Botanical Garden Special Lecture

Discovering Exciting/Unusual Perennials, Shrubs And Vines For BC Gardens. Sponsored by Friends of the Garden. Crofton House School Addison Theatre at 8pm. Admission \$8/\$5 (available at the Garden). Call 822-4529.

Green College Seminar

Pride, Prejudice/Corruption: In Search For Neurobiology's Holy Grail. Chris Shaw, Ophthalmology. Green College recreation lounge at 8pm. Call 822-8660.

Tuesday, Mar. 28

MOST Workshop

The Fundamentals Of Communicating. Maura Da Cruz, training administrator, Human Resources. Brock Hall 0017 from 9am-12pm. Refreshments. Call 822-9644.

Animal Science Seminar Series

Metabolic Responses Of Early Life Stages In Fish To Salinity Change. Erick Groot, PhD candidate. MacMillan 256 at 12:30pm. Refreshments. Call 822-4593.

Centre for Biodiversity Research Spring Seminars

Bioindication Of Heavy Metals In The Fraser Valley. Ute Pott, MSc. candidate, Botany. BioSciences 2000 at 12:30pm. Call 822-2131.

Pharmaceutical Sciences Seminar

Carvedilol: Stereoselective Analysis/Pharmacokinetics. Lilian Clohs, grad student, Pharmaceutical Sciences. IRC #3 at 12:30pm. Call 822-4645.

Lectures in Modern Chemistry

Radical Approaches To Highly Reduced Compounds Of The Early Transition Metals. Prof. John Ellis, Chemistry, U. of Minnesota. Chemistry 250, south wing at 1pm. Refreshments from 12:40pm. Call 822-3266.

MOST Workshop

Central Agencies II: Human Resources—Recruiting Staff At UBC. Kim Simms, personnel assistant, Human Resources. Brock Hall 0017 from 1-4pm. Refreshments. Call 822-9644.

Pharmaceutical Sciences

Lipoprotein Lipase In The Diabetic Rat. Dr. David Seversen, MRC Signal Transduction Group, U. of Calgary. IRC #5 at 4pm. Call 822-4645.

Psychology Seminar

Alternative Metaphors For Judgment And Choice: The Psychologist, The Economist, The Politician And The Theologian. Visiting Scholar Philip Tetlock, director, Institute of Personality/Social Research, U. of Calif., Berkeley. Kenny 2510 Peter Suedfeld lounge at 4pm. Call 822-5675.

Medical Genetics Seminar

Molecular Characterization Of Human Phospholipase A2 Like Gene. Paul Kowalski, PhD student, Medical Genetics. Wesbrook 201 at 4:30pm. Refreshments at 4:15pm. Call 822-5312.

Green College Seminar

Contested Space: The Politics Of Canadian Memory. Veronica Strong-Boag, Centre for Research in Women's Studies/Gender Relations. Green College recreation lounge at 5:30pm. Call 822-8660.

Wednesday, Mar. 29

Centre for Japanese Research Seminar

Japanese Labour And The Miracle: The Missing Link. Dr. John Price, History. Asian Centre music studio from 12:30-2:00pm. Call 822-2629.

Orthopaedics Grand Rounds

Cervical Spine/Rheumatoid Arthritis. Dr. Marcel Dvorak, speaker; Dr. Robert W. McGraw, chair. Vancouver Hosp/HSC Eye Care Centre auditorium from 7-8am. Call 875-4272.

Microbiology/Immunology Seminar

Developmental Genes Discovered By Restriction Enzyme Mediated Integration Plasmids In Dictyostelium. Dr. Bill Loomis, Biology, U. of Calif., San Diego. Wesbrook 201 from 12-1:30pm. Call 822-3308.

Music Concert

UBC Jazz Ensemble. Fred Stride, director. Music Bldg. Recital hall at 12:30pm. Free admission. Call 822-5574.

Centre for Japanese Research Seminar

Productivity In Japan. John Price, History. Asian Centre 604 from 12:30-2pm. Call 822-2629.

Institute of Applied Mathematics Colloquium

TBA. Dr. Huaxiang Huang, Mathematics, SFU. Math 203 at 3:30pm. Call 822-4584.

Geography Colloquium

Glacier Dynamics/Anomalous Post-Glacial Emergence On Ellesmere Island: New Perspectives On Paleoclimatic Change And Neotectonics In The High Arctic. Dr. John England, Geography, U. of Alberta. Geography 201 at 3:30pm. Refreshments. Call 822-4929.

Pharmaceutical Sciences Seminar

Complete Androgen Block In Prostate Cancer: Is It Cost Effective Therapy? Donna Buna, PharmD student, Clinical Pharmacy. Vancouver Hosp/HSC G-279 from 4-5pm. Call 822-4645.

Centre for Biodiversity Research Spring Seminars

Amphibian Population Declines: Evidence, Causes And Implications. Andy Blaustein, Zoology, Oregon State U. Family/Nutritional Sciences 60 at 4:30pm. Call 822-2131.

Respiratory Seminar Series

Should We Put The Respiratory Muscles To Rest? Dr. Jeremy Road, associate professor, Medicine. Taylor-Fiddler conference room, Vancouver Hosp/HSC Laurel Pavilion from 5-6pm. Call 875-5653.

Distinguished Speakers Series

Political Or Politicized Psychology: Is The Road To Scientific Hell Paved With Good Intentions? Philip Tetlock, director, Institute of Personality/Social Research, U. of Calif., Berkeley. Hotel Georgia from 7:30-9:30pm. \$10. Call 822-1450.

Music Concert

UBC Percussion Ensemble/Capilano College Percussion Ensemble. John Rudolph, director. Old Auditorium at 8pm. Free admission. Call 822-5574.

Green College 19th Century Studies Colloquium

Breaking The Sound Barrier: A Short History Of Noise. Peter Bailey, History, U. of Manitoba. Green College recreation lounge at 8pm. Call 822-8660.

Thursday, Mar. 30

Continuing Studies Lecture

Ecology, Politics and Clearcutting. Patrick Moore, Forest Alliance of B.C.; Doug Hopwood, forestry consultant. IRC Lecture Hall 6 from 7:30-9:30pm. Call 822-1460.

Music Concert

UBC Contemporary Players.

Andrew Dawes/Stephen Chatman, directors. Music Bldg. Recital hall at 12:30pm. Free admission. Call 822-5574.

Psychology Lecture

How Politicized Has Political Psychology Become? Examining The Debates Over The New Racism And The End Of The Cold War. Cecil/Ida Green Visiting Professor Philip Tetlock, director, Institute of Personality/Social Research, U. of Calif., Berkeley. Buchanan A-106 at 12:30pm. Call 822-5675.

Forestry Lecture

Better Utilization For Sustained Production And Profit. Dr. Robert Youngs, College of Forestry, Fisheries and Wildlife Resources, Virginia Tech. MacMillan 260 from 12:30-1:30pm. Call 822-5303.

Agricultural Economics/Related Information Meeting

Southeast Asian University Consortium For Graduate Education In Agriculture And Natural Resources. Opportunities for faculty/student exchanges. MacMillan 158 from 1-2pm. Call 822-2193.

Multimedia Demonstrations

Presentations by Marc Broudo, Health Sciences; Michelle Lamberson, Geological Sciences; Paul Hibbits, Media Resource Network. USB, south end TELEcentre from 1-2pm. Call 822-3062.

Physics Colloquium

Quantum Mechanics In Your Face. Sidney Coleman, Harvard U. Hennings 201 at 4pm. Call 822-3853.

Music Concert

UBC Symphonic Wind Ensemble. Martin Berinbaum, director. Old Auditorium at 8pm. Call 822-5574.

Friday, Mar. 31

Health Care/Epidemiology Rounds

Quality Of Life Outcomes Following Cataract Surgery. Dr. Simon Holland, clinical instruction of Ophthalmology; Dr. Rick Mathias, professor of Epidemiology; Ronnie Sizto, systems analyst. Mather 253 from 9-10am. Call 822-2772. Parking available in B lot.

Pediatrics Grand Rounds

Partnerships/Opportunities: The Centre For Molecular Medicine And Therapeutics. Dr. Michael Hayden, Medical Genetics. GF Strong auditorium at 9am. Call 875-2307.

Political Science Seminar

Good Judgment In World Politics: Who Gets What Right, When And Why. Cecil/Ida Green Visiting Pro-

fessor Philip Tetlock, director Institute of Personality/Social Research, U. of Calif., Berkeley. Buchanan A-104 at 3:30pm. Call 822-5675.

Mathematics/Institute of Applied Mathematics Colloquium

Topics In Singular Perturbations/ Exponential Asymptotics. Dr. Michael Ward, Mathematics. Math 203 at 3:30pm. Refreshments at 3:15pm in Math Annex 1115. Call 822-2666.

Chemical Engineering Weekly Seminar

Mathematical Modelling Of Fluid/Ion Exchange Following Thermal Injury. Cristina Gyenge, grad student, ChemEngineering 206 at 3:30pm. Call 822-3238.

Theoretical Chemistry Seminars

Aspects Of Kinetic Theory To Ionospheric Physics. G. Arkos, Geophysics. Chemistry 402, central wing at 4pm. Call 822-3997.

Saturday, Apr. 1

Vancouver Institute Lecture

Prospects For Peace In Ireland. Prof. Conor Cruise O'Brien, essayist, historian, diplomat. Dublin. IRC #2 at 8:15pm. Call 822-3131.

Monday, Apr. 3

Cancer Research Seminar

Helix-Loop-Helix Protein In Hematolymphoid Development. Dr. Adam Goldfarb, Institute of Pathology, Case Western Reserve, U. of Cleveland. BC Cancer Research Centre lecture theatre at 12pm. Call 877-6010.

Plant Science Seminar

The Regulation Of Phenylpropanoid Natural Product Biosyntheses: Molecular Approaches. Carl Douglas, Botany. MacMillan 318-D at 12:30pm. Call 822-9646.

Astronomy Seminar

Properties Of Invisible Galaxies. Greg Bothun, U. of Oregon. Geophysics/Astronomy 260 at 4pm. Refreshments at 3:30pm. Call 822-2696/2267.

Centre for Chinese Research Seminar

The Chinese Communist Party's 'Case Examination' Apparatus: A Secret Party Organization And Its Operating Procedures. Prof. Michael Schoenhals, Pacific Asia Studies, Stockholm U. Asian Centre 604 from 4:30-6pm. Call 822-2629.

UBC REPORTS

CALENDAR POLICY AND DEADLINES

The *UBC Reports* Calendar lists university-related or university-sponsored events on campus and off campus within the Lower Mainland.

Calendar items must be submitted on forms available from the UBC Public Affairs Office, 207-6328 Memorial Road, Vancouver, B.C. V6T 1Z2. Phone: 822-3131. Fax: 822-2684. Please limit to 35 words. Submissions for the Calendar's Notices section may be limited due to space.

Deadline for the April 6 issue of *UBC Reports*—which covers the period April 9 to April 22—is noon, March 28.

Calendar

March 26 through April 8

Public Lecture

Of Summits, Security And Sustainability — Rio, Cairo, Copenhagen, Beijing, Halifax: Is The World A Better Place? Arthur J. Hanson, president/CEO International Inst. for Sustainable Development. IRC #3 7:30pm. Call 822-9150.

Tuesday, Apr. 4

Centre for Biodiversity Research Spring Seminars
Factors Restricting Plant Growth In The Boreal Forest Understory: A Field Test Of The Relative Importance Of Abiotic/Biotic Factors. BioSciences 2000 at 12:30pm. Call 822-2131.

Faculty Women's Club Annual General Meeting

Election of officers/presentation of life memberships. Featured: Great Plant Hunter — Native BC Horticultural Species And How To Use Them In Our Gardens. Wilf Nicholls, Botanical Garden. Cecil Green Park main floor at 1pm.

Oceanography Seminar

On Cows, Fish And Man: The Carrying Capacity Of The Northeast Pacific For Sockeye Salmon. Michael Baumann, Oceanography. BioSciences 1465 at 3:30pm. Call 822-4511.

Green College Seminar

Synthetic DNA And Biology. Michael Smith, director, Biotechnology Lab, Biochemistry/Molecular Biology. Green College recreation lounge at 5:30pm. Call 822-8660.

Wednesday, Apr. 5

Orthopaedics Grand Rounds

Upper Extremity Reconstruction In Quadriplegia. Maura Whittaker/Liza Hart, Spinal Cord Program, speakers; Dr. Peter T. Gropper, chair. Vancouver Hosp/HSC Eye Care Centre auditorium from 7-8am. Call 875-4272.

Astronomy/Geophysics Seminar

Clementine At The Moon. Eugene Shoemaker, U.S. Geological Survey, Flagstaff, Ariz. BioSciences 2000 at 4pm. Call 822-2696/2267.

School of Nursing Scholarly Colloquia

Feminist Methods And Their Ap-

plication. Claire Budgen, professor, Okanagan U. College. Vancouver Hosp/HSC UBC Pavilion T-180 at 4:30pm. Call 822-7453.

MOST Workshop

Conflict Resolution: An Introduction To Win/Win. Gary Harper, Harper & Associates. Brock Hall 0017 from 9am-4pm. Refreshments. Call 822-9644.

Respiratory Seminar Series

Role Of Alveolar Macrophage Elastase In Emphysema. Dr. Steven D. Shapiro, professor, Washington U. at St. Louis. Taylor-Fiddler conference room, Vancouver Hosp/HSC Laurel Pavilion from 5-6pm. Call 875-5653.

Green College Science/Society Seminar

Greening The Campus. John Robinson, director, Sustainable Development Research Inst. Green College recreation lounge at 8pm. Call 822-8660.

Thursday, Apr. 6

Computer Science Invited Speaker Seminars

An Integrated System Architecture For Distributed Boundary Value Problems. Prof. Harrick Vin, Computer Science, U. of Texas at Austin. CICS/CS 208 from 11:30am-1pm. 7th of 8. Call 822-0557.

Notices

UBC Zen Society

Zazen (sitting meditation) will be held this term every Monday 1:30-2:30pm in the Tea Gallery of the Asian Centre. Beginners welcome, cushions provided. Meet at 1:30pm outside the Asian Centre Auditorium. Call 228-8955.

Student Housing

A service offered by the AMS has been established to provide a housing listing service for both students and landlords. This service utilizes a computer voice messaging system. Students call 822-9844, landlords call 1-900-451-5585 (touch-tone calling) or 822-0888, info only.

Friday Morning Tour

School/College Liaison tours provide prospective UBC students with an overview of campus activities, facilities and services. Brock Hall 204 from 9:30-11am. Reservations one week in advance. Call 822-4319.

Counselling Psychology Study

Midlife Daughters/Daughters-In-Law. Daughters, who are caring for a parent in a care facility, are needed for a study on stress and coping. Involves one evening small group discussion with women similar to yourself. Call Allison at 822-9199.

Grad Centre Activities

Dance To A Latin Beat. Every Thur. at the Graduate Centre at 8:30pm. To find out more about free Mon. movies (presently Japanese) in the penthouse at the Grad Centre, free Tai Chi and other activities call the hot-line at 822-0999.

International Student Services

Women's Support Group. Jennie Campbell, International Student Advisor/Program Coordinator. International House every Thurs. between 4-5pm. Call 822-5021.

UBC Libraries

Library branches and divisions are offering more than 100 training/tutorial sessions this term. Learn how to use the online catalogue/information system, or one of more than 75 electronic databases in the library. Check branches/divisions for times and dates. Call 822-3096.

Clinical Research Support Group

Under the auspices of Health Care/Epidemiology. Provides Methodological, biostatistical, computational and analytical support for health researchers. Call 822-4530.

Disability Resource Centre

The centre provides consultation and information for faculty members with students with disabilities. Guidebooks/services for students and faculty available. Call 822-5844.

Equity Office

Advisors are available to discuss questions or concerns. We are prepared to help any UBC student, or member of staff or faculty who is experiencing discrimination or harassment, including sexual harassment, find a satisfactory resolution. Call 822-6353.

Continuing Studies Writing Centre

Writing 098: Preparation For University Writing And The

Friday, Apr. 7

Pediatrics Grand Rounds

The Role Of Imaging In Pediatric Oncology. Dr. Mervyn D. Cohen, director of Radiology, Riley Children's Hosp/professor, Indiana U. GF Strong auditorium at 9am. Call 875-2307.

Plant Science Seminar

The Development Of A Solar Greenhouse. Prof. Dov Pasternak, Agriculture/Applied Biology, Ben-Gurion U. of the Negev, Israel. MacMillan 318-D at 11:30am. Call 822-2329.

Chemical Engineering Weekly Seminar

Dynamic Study Of Surfact Dur-ing Catalytic Reaction. Prof. Yoshi Amenomiya, Chemistry, Ottawa. ChemEngineering 206 at 3:30pm. Call 822-3238.

Saturday, Apr. 8

Vancouver Institute Lecture

The Emperor's New Mind Revisited. Prof. Roger Penrose, Rouse Ball Prof. of Mathematics., Oxford. IRC #2 at 8:15pm. Call 822-3131.

LPI Summer Session: June 27-July 27, Tues., Thurs., 7-10pm. Call 822-9564.

A Study on Hearing and Age
Senior (65 yrs. or older) and junior (20-25 yrs.) volunteers are needed. Expected to attend 3 one-hour appointments at UBC. Experiments will examine how hearing and communication abilities differ with age. Honorarium. Call 822-9474.

Dermatology Studies Volunteers Required

Genital Herpes
16 yrs/older. Approx. Eight visits over one-yr. period. All patients will be treated with medication. No control group. Call 875-5296.
Skin Infection
18 yrs/older. Looking for participants with infections such as infected wounds, burns, boils, sebaceous cysts or impetigo. Four visits over maximum 26 days. Honorarium. Call 875-5296.

Statistical Consulting/Research Laboratory

SCARL is operated by the Dept. of Statistics to provide statistical advice to faculty/staff/students. During Term 2, 94/95, up to three hours of free advice is available for selected clients. Call 822-4037.

Badminton Club

Faculty/staff/grad students welcome. Osborne Gym A, Fridays from 6:30-9:30pm. \$15 yr; \$2 drop in. John Amor, Geophysics/Astronomy. Call 822-6933.

Surplus Equipment Recycling Facility (SERF)

Disposal of all surplus items. Every Wednesday, 12-5pm. Task Force

Bldg., 2352 Health Sciences Mall. Call Vince at 822-2582/Rich at 822-2813.

Garden Tours

Wednesdays/Saturdays until October. UBC Botanical Garden at 1pm. Available with the price of admission. Call 822-9666.

Psychology Study

Continues to May 15. Music And Mood. Volunteers required for 2 one-hr. sessions booked 2 days apart. \$20 honorarium upon completion. Call 822-2022.

English Language Institute Homestay

Continues to Aug. 17. English-speaking families needed to host international students participating in ELI programs for periods of two to six weeks. Remuneration is \$22 per day. Call 822-1537.

Nitobe Memorial Garden Botanical Garden

Summer Hours effective March 11 - October 15, 1995: 10:00 a.m. to 6:00 p.m. daily (including weekends). Call 822-9666 for garden information. Shop-in-the-Garden 822-4529.

NOTE

Calendar entries for the period of May 7 to June 17 must be submitted by April 20.

The Calendar will not appear in the May 18 issue of UBC Reports.

'Wet sites' yield ancient artifacts

Imagine an archeologist from the future trying to reconstruct present-day society if all material made from plastics or synthetics had disappeared.

Clothing, furnishings, computers, airplanes — no trace of these objects would survive. Archeologists face a similar problem when looking at the remains of ancient societies in British Columbia without the benefit of wood or plant material. Many tools and containers, as well as clothing, fishing nets, houses and canoes, were made from wood and other plant material that perish unless preserved under special conditions.

A new exhibit opening March 28 at the Museum of Anthropol-

ogy (MOA) will provide a unique glimpse into the early history of the Lower Mainland by looking at objects that normally decay over time.

Entitled "From Under the Delta: Wet-Site Archeology in British Columbia's Lower Mainland," the exhibit features rare, perishable wood and bark artifacts, some of which date back 4,500 years.

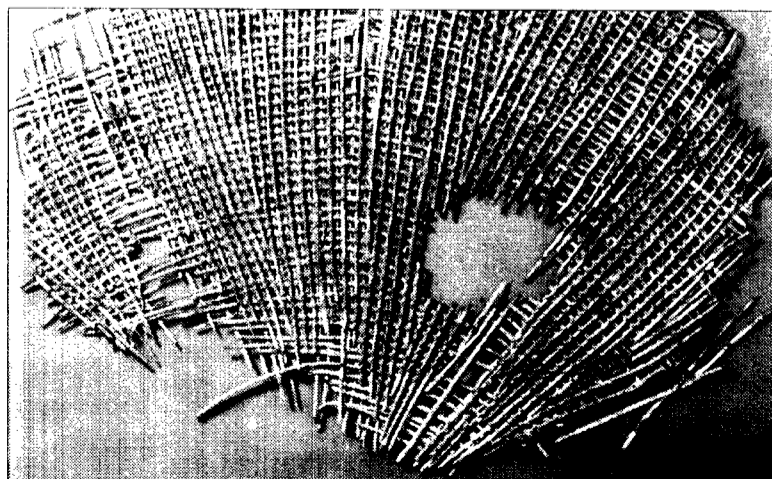
Advances in conservation science now make it possible to preserve and show these important collections, most of which have never been on public display.

The exhibit's artifacts include tools, baskets, cordage and fishing gear retrieved from 11 archeological wet sites across the

Lower Mainland. Most of the objects in the exhibit were recovered from the Musqueam Northeast site on the Musqueam Reserve, and the Water Hazard site in Tsawwassen. Other objects on display come from sites in Richmond, Delta, Crescent Beach, Coquitlam, Pitt Meadows and the Fraser Valley.

The exhibit was developed in consultation with local First Nations communities that have participated in wet-site archeology projects and draws attention to issues relating to the management and preservation of First Nations cultural heritage.

In conjunction with the exhibit, MOA will be hosting an international conference on



A 4,300-year-old basket fragment from a Fraser River site.

wetland archeology April 27-30. Organized in co-operation with the Musqueam, Tsawwassen, Katzie and Sto:lo Nations, the program includes scientific sessions on current wet-site archeo-

logical research and object conservation, as well as public talks and workshops on education and cultural resource management.

For information and registration, call MOA at 822-5087.



THE UNIVERSITY OF BRITISH COLUMBIA

UBC TUITION POLICY

THE UNIVERSITY OF BRITISH COLUMBIA

March 23, 1995

Dear Colleagues:

Earlier drafts entitled "Towards a Tuition Policy" were prepared following the Board of Governor's August retreat at which the issue was raised and the themes identified. The fourth draft was discussed at the December first board meeting. Subsequently it was refined and reformatted following advice received from vice presidents, deans, heads and directors and from the Senate Budget Committee.

At its January 1995 meeting, the board discussed the fifth draft and approved the following resolution: "That the Board request the Administration to proceed to consultation and further development of a strategy on the basis of the December 30, 1994 draft of the paper entitled 'Towards a Tuition Policy'."

Uncertainty around the future of federal transfers to the provinces and provincial support for higher education makes it essential that the university have in place a clear policy to guide its actions in the determination of tuition fees under the various scenarios which could be played out over the next few months. The position of the administration is that government grants to higher education are an investment in the future of the economy and the nation, both in the development of Canada's human resources through education and training and in the development of intellectual property through research and creative professional activity. Consequently we believe adequate funding of universities to be not only an important investment for social reasons but a wise investment for economic reasons.

It is also demonstrable that higher education benefits not only society generally but the recipient personally. Consequently there is a rationale for regarding the student's payment of tuition fees and other related costs as a private investment with a high probability of private benefit. There is no simple or straightforward method of

calculating the appropriate share of the cost of higher education which should be borne respectively by the public generally and by the student specifically.

The policy suggests that the university should maximize revenues from governments and from all possible sources other than students provided doing so does not impose obligations inconsistent with its mission. Further it suggests that the university must be demonstrably committed to effectiveness, efficiency and accountability in carrying out its mission. Then tuition fees should be established in such a way that they enable the university to maintain resources at the current level in constant dollars per weighted full time equivalent student. In so determining tuition fees, the university has an obligation to establish scholarship and bursary programs such that, taken with provincial and national financial aid programs, they ensure that no student who would otherwise be eligible for admission to UBC is excluded merely for personal financial reasons. An added element in tuition fee policy will be a provision for student financial awards.

In keeping with the resolution passed by the board and the board-approved policy governing consultation on tuition, following the January board meeting the administration proceeded to consult with the campus community generally and with students specifically in further developing a tuition policy. The attached statement, "UBC Tuition Policy," incorporates advice from board members, from about a dozen deans, heads and directors, from the Senate Budget Committee and from others, including students, who provided advice verbally. All letters have been acknowledged and many of the proposed revisions and clarifications adopted. In the attached paper, significant revisions are identified in italics. An outline of the process of consultation is also attached.

I look forward to receiving further comments on the tuition policy.

David W. Strangway
President

UBC TUITION POLICY

The University of British Columbia has a special (national and international) role in a well-articulated provincial system of higher education. To fulfill this role, it must be responsive to the province and community of which it is a part. A well-defined vision and mission drive strategic planning to achieve its goals and priorities. The University is committed to effectiveness, efficiency and accountability and every avenue is explored to limit expenditures and to generate additional sources of revenue.

Maintaining the quality required to achieve its mission depends on stopping the erosion of operating funds, i.e. on maintaining the real value of the provincial grant and tuition fees. General purpose operating funds derive directly from non-earmarked provincial grants and tuition income and are allocated in terms of University priorities to maintain operations and implement plans. UBC will continue, by all methods possible, to achieve greater effectiveness and efficiency and, in doing so, will be accountable to the people of British Columbia. Any continuing savings will be used to enhance academic activities. The University will also make every effort to raise endowment funds from private sources to support chairs and professorships to attract and retain exceptional faculty and thereby to reinforce the margin of excellence. Capital funds can only be used for construction projects and related purposes. These funds derive from provincial allocation, from fundraising or from financing for self-funding projects. In addition to major capital allocations, the province provides two capital allocations: a fund for minor capital (public works and renovations) and a fund for cyclical or deferred maintenance.

With its commitments to effectiveness, efficiency and accountability firmly in place, the University will determine future tuition fee increases in a manner that offsets any reduction in the provincial grant in constant dollars per weighted full-time equivalent student. Constant dollars will be calculated using an inflation index appropriate to the University including imposed and regulatory costs, e.g. mandated increases in the cost of

benefits. (The resulting index has been and for some time will continue to be one or two percent higher than CPI.) Tuition fee increases will provide an additional allocation equal to one-third of the basic annual increase to fund scholarships for the most outstanding students and bursaries for those in greatest need.

The sections which follow say something about the University's special role and strategic planning, steps taken to enhance effectiveness, efficiency and accountability and to gain access to additional resources. The policy on tuition fees is proposed in the light of the evidence of careful planning and decision-making designed to ensure that the people of British Columbia receive the greatest possible return on the resources entrusted to the University to carry out its mission. We also recognize that governments and citizens are observing that a university education is not only an investment for the benefit of society in general but that it confers a private benefit on the individual. An issue with which we are engaged is the determination of an appropriate balance between public and private investment for public and private benefit.

UBC's Role

A recent economic impact study has shown that the universities of British Columbia make a major contribution to British Columbia's economy. It is now recognized that UBC is one of the principal job creators in the province. In an increasingly knowledge-intensive world, the province requires an outstanding and diverse university system, among the best in Canada and the world, not only for economic but for social and cultural leadership.

1. A diverse and well articulated post-secondary system is now established in the Province and within this system UBC can and must play a very special role.
2. Outstanding research and teaching in core academic fields and in the professions are essential to the future prosperity of the Province.
3. In addition to teaching and research,

the University provides benefits to British Columbians in many ways, e.g. the enhancement of the arts and the transfer of technology.

4. Carrying out the University's special role requires that we maintain the quality of teaching, learning, research and service at UBC. It also requires that every effort be made to provide good facilities including new space and maintenance and renovation of existing space. (The latter is done with provincial minor capital and cyclical maintenance funds.)

5. We plan to maintain the policy in place since 1965 that the student body at UBC should be 28,000 (22,000 undergraduate and 6,000 graduate students).

6. We recognize that the quality of the faculty is key to our mission.

7. We recognize that the quality and efficiency of support staff are key to our mission.

Commitment to Effectiveness, Efficiency and Accountability

1. Effectiveness and efficiency have improved dramatically and are reflected in the awarding of 40% more degrees annually now than ten years ago.

2. The increased retention rate of undergraduate students is the product of an admission process that selects students with the highest academic standards and of a variety of other strategies designed to provide support for personal and academic growth while students are at the University.

3. Graduate students are equally rigorously selected and faculties are working to improve retention and completion rates in graduate programs.

4. Since 1981/82 UBC has absorbed a 27% reduction in the constant dollar value of the provincial grant per weighted student and has accordingly improved its efficiency (or its productivity) dramatically. The effective value of the provincial grant has been reduced even further by the requirement that the University absorb without incremental funding the

costs arising from government legislation and regulation and from mandatory or fixed costs in such areas as Unemployment Insurance, Canada Pension Plan, equity, safety, environment, Workers' Compensation, utility rates, insurance rates, Freedom of Information and Protection of Privacy. We can no longer absorb added fiscal demands without commensurate funding.

5. Major reengineering projects are now under way to seek further efficiencies, e.g. in the appointment and procurement processes. The principles of continuous quality improvement are applied explicitly in a number of departments and in several additional projects.

6. We have raised awareness of the importance of stewardship and have introduced incentives for fiscal responsibility by allowing carry-forward of surpluses and deficits as a first credit or first charge against the following year's budget of a faculty.

7. Both efficiency and accountability are served by the policy of requiring an increasing number of self-funding ancillaries to operate on a break-even basis (including salaries and benefits, capital and space operating costs). Efficiency is monitored in part by benchmarking. Current ancillary enterprises include:

- Bookstore
- Athletics and Sports Services (complete by 95/96)
- Biomedical Communications (complete by 95/96)
- Educational Measurement Research Group
- Computing and Communications (complete by 95/96)
- UBC Press (complete by end of 95/96)
- Media Services
- University Computing Services (complete by 95/96)
- Telecommunications Services (complete by 95/96)
- Food Services
- Housing and Conferences

(note: Any minor remaining subsidies have been identified and will be removed by the end of the 1995/1996 fiscal year.)



UBC TUITION POLICY

8. Many units, sub-units or programs - not referred to as ancillaries - generate their own revenues and do not receive support from general purpose income, i.e. provincial operating grant or credit tuition revenue. They carry forward 100% of any year-end deficit or surplus and cover all their costs including the cost of employee benefits. These principles apply either to the entire budget of the unit or to a designated portion of its functions and its budget. *In the latter case two budgets are provided, one for the GPOF core functions and one for designated or non-core funded functions (including benefit costs).*

- Oyster River Farm
- Medical Student Alumni Centre
- UBC/Ritsumeikan (academic program)
- Library photocopying
- Interlibrary loans
- Student Health Service (designated portion)
- Animal Care Centre (budgeted portion)
- Campus Planning and Development (portion supported from capital funds as part of specific capital projects)
- University Industry Liaison Office (designated portion)
- University Research Forests
- Green College
- Academic Equipment Fund
- Cooperative Education Administration Fund
- Graduate Student Awards Fund
- Oral Medicine Clinic
- Partnership Costs of University College Programs
- Teacher Education Expansion
- Teaching and Learning Enhancement Fund
- Student Aid Fund
- Development Office (portion funded by charges against endowment)
- Pacific Educational Press
- Distance Education Office (Faculty of Education)

9. A number of programs operate now (or will in the near future) with special purpose budgets supported either wholly or largely by endowment income. These programs cover their own costs including the cost of employee benefits. Where a portion is supported from GPOF, two budgets are presented:

- Disability Resource Centre (designated portion)
- Life Skills Motivation Centre including Rick Hansen National Fellow Program
- Graduate Program in Occupational Hygiene (designated portion)
- Peter Wall Institute for Advanced Studies
- Social Science and Humanities Research Fund
- endowed chairs
- endowed professorships
- MAGIC (designated portion)
- Centre for Applied Ethics (designated portion)
- Institute for Asian Research (Centres for Chinese, Japanese, Korean, South Asian and South-east Asian Research)

10. Many units or sub-units have a significant part of their operation supported by outside revenue. As of 1995/1996, year-end shortfalls or excesses in budgeted outside revenue will be carried forward to reward stewardship and enhance accountability. *For each such unit two budgets are presented, one for core GPOF and one for non-core, i.e. those functions (including salaries and related benefits) supported by other sources of revenue. An appropriate business plan accompanies the budgets.*

- Belkin Art Gallery (future)

- Frederic Wood Theatre
- Child Study Centre
- Museum of Anthropology
- Botanical Garden (moving towards self-sufficiency)
- South Campus Farm
- Faculty of Medicine (MSP revenue)
- Chan Shun Centre for the Performing Arts (future)
- Dental Clinic

11. Continuing studies across all faculties and units have been mandated to operate on a self-sufficient basis, i.e. they carry forward year-end deficits or surpluses. The University and the faculties are reimbursed by these units for the cost of services provided through them to students and to the public. *Further growth in summer, evening, diploma and certificate programs can be expected since this uses the campus more effectively and does not draw on core GPOF support.*

12. An aggressive early retirement program has provided both budget reduction and faculty renewal opportunities. It has been a significant factor in our ability to maintain a faculty renewal rate of at least 5% per year. Thus tenure has not been a major barrier to appropriate levels of renewal and change.

13. The costs of operating our physical plant have been kept consistently among the lowest in Canada. *On the other hand we do have significant deferred maintenance costs.*

14. UBC is one of the few universities in Canada to eliminate selected academic programs (and to sever the associated tenured faculty).

15. Major steps have been taken and continue to be taken to reduce the unnecessary usage of utilities - electricity, water, gas, etc.

16. To assess their standing, effectiveness and efficiency we now review every academic and service program periodically (every five to seven years) with appropriate national and international comparisons.

17. The year-round usage of the campus is increasing sharply. Within the next few years, we will have as many students in the two terms of the summer session as in the two terms of the winter session. Some programs are operating formally on a trimester basis, and the rest of the University is operating, in effect, on a trimester basis.

18. In search of greater effectiveness and efficiency, we have embarked on a review of academic organization, including the nature and size of departments and faculties. Already some departments and other units have merged and others have been eliminated.

19. The entire 1994/95 provincial innovation grant equal to one percent of the operating grant has been used to implement an integrated campus plan for the development and use of new media technologies in teaching and learning. We are committed to maintaining the student/faculty ratio as a fundamental element in the quality of education and we are seeking to enhance the quality of the learning environment through the innovative use of technology.

20. We have increased substantially the support of student aid through operating budgets, endowments and part-time work opportunities and this, together with provincial and federal loan programs, means that no student, otherwise admissible, is denied the opportunity to study at UBC for personal financial reasons alone.

Commitment to Maximizing Resources

1. With the participation of the provincial government we have conducted the most successful fundraising campaign in Canadian history to support academic enrichment through buildings and endowments.

2. We have used wisely the Hampton Place income to develop an endowment base to support UBC's mission and to enhance fundraising activities for university priorities by providing matching funds. (There will be more opportunities on the South Campus for similar projects in the future).

3. Based on widely accepted space standards, UBC is short of space and we will continue to seek all possible means to correct this shortfall and to deal with maintenance, and the refurbishment of existing space or its replacement when acceptable standards cannot be achieved through refurbishment.

4. We will be recommending annual graduate student tuition fees to ensure that full tuition is paid as long as graduate students remain enrolled and that fees are based on full or part-time study, clearly defined by the Faculty of Graduate Studies.

5. For some new and redeveloped graduate programs in professional fields, tuition fees are being established at a level which will recover all or most of the program operating costs, both direct and indirect, e.g. Pharm.D. and MBA

6. Endowment and operating funds are being sought for new programs, particularly in fields which serve specific needs of industry and society, e.g. advanced wood products processing, fire protection engineering, vocational rehabilitation counseling.

7. We are developing the policy framework to enable faculties to plan for full cost tuition for international students up to ten percent of enrolment in undergraduate and professional graduate programs. This ten percent which would not displace any Canadian students and would be in addition to the approximately five percent international students faculties are now encouraged to include within their undergraduate enrolment. Research-oriented graduate programs will be excluded from this plan.

8. We are maximizing the return to UBC and to the creators of intellectual property developed in the University, through royalties on patents, through licences and through the creation of companies in which the University takes equity as appropriate.

9. We are now recovering part of the cost to UBC for a number of services provided on a fee-for-service basis:

- processing of applications
- issuing of transcripts
- administration of ancillaries
- overhead costs of conducting contract research

10. The judicious use of campus facilities for academic conferences has generated sufficient revenue to facilitate the building of student residences and thereby enabled us to exceed our goal of accommodating on campus 25% of full-time, daytime, winter session students. Further construction of residences will be aimed at refurbishing or replacing some of the older residences and addressing requirements for a change in the mix, e.g. meeting the need for family housing for older students, students with children, single parents.

11. The building of faculty and staff rental accommodation has been a significant factor in enabling us to recruit outstanding faculty. Further rental housing for this purpose can be developed if and as required since no core budget assistance is required.

UBC TUITION POLICY OUTLINE OF CONSULTATION

August 5, 1994

Issue raised by Board and discussed extensively at Board Retreat

September

"Toward a Tuition Policy" 1st draft prepared for comment by VPs

October 11

2nd draft circulated to VPs and Deans for comment

October 26

3rd draft prepared for comment by Deans, Heads and Directors

October

Discussed with Senate Budget Committee

November 18

4th draft prepared for consideration by Board

November 24

Discussed by Finance Committee of the Board

December 1

Discussed further by the Board

December 30

Revised and reformatted 5th draft prepared for consultation

January 12, 1995

Discussed by Finance Committee of the Board

January 16, 17

Extensively reviewed at Executive Retreat (P, VPs, AVPs, Deans)

January 16

Circulated to Deans for Discussion within faculties and comment

January 23

Discussed with Minister Miller and Deputy Minister Wouters

January 25

Circulated to Deans, Heads and Directors for comment

January 25

Published in *UBC Reports* for campus comment

January 26

Approved by Board as the basis for further consultation

February

Responses from Board members, deans, heads and directors

February 15

Request for comment from Senate Budget Committee

February 14, 24

Discussion with AMS re process for consultation

March 2

6th draft prepared incorporating results of consultation

March 6

Circulated to Deans, Heads and Directors for comment

March 9

On the agenda for the Board Finance Committee

March 16

On the agenda of the Board for approval in principle

March 22

On the agenda of the Senate Budget Committee

March 23

Published in *UBC Reports* for campus comment

March 30

On the agenda for the Deans, Heads and Directors

26th annual UBC Faculty and Staff Golf Tournament
 May 4 at the Surrey Golf and Country Club
 The tournament is open to all golfers.
 Call Doug Quinville at 822-6090 or Ed Auld at 822-6746.

The University of British Columbia
GREEN COLLEGE
Application for Non-Resident Faculty Membership

Green College invites applications from UBC faculty who wish to be non-resident members of the College. The term of membership is two years from September 1, 1995. Selection is based on academic distinction, interdisciplinary interests and receptiveness, commitment to participate in College life, and a balance in membership in terms of discipline, rank and gender. Please send a letter of interest and a curriculum vitae to:

The Membership Committee
 Green College
 6201 Cecil Green Park Road
 Vancouver, B.C. V6T 1Z1
 Tel: 822-8660

The deadline for applications is May 31, 1995.

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The deadline for the April 6, 1995 issue of UBC Reports is noon, March 28.

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<p>INCOME TAX RETURNS prepared for as low as \$40. Electronic filing now available, refunds as quickly as 10 working days. Pick up and delivery from UBC. Professionally prepared. Phone 940-9180, Len.</p>	<p>GAGE COURT HOTEL offers year-round accommodation in one-bedroom suites with kitchenettes. Ideal for visiting professors and seminar groups. Located on campus, across from the Student Union Building. Daily rate is \$69/suite. For reservations call (604) 822-1010.</p>	<p>PROFESSIONAL COUPLE with 3 children and 1 small dog seek house or condo for rent or sublet commencing May 31, 95. Require minimum 4 months. 222-3496.</p>
<p>INCOME TAX PREPARATION Edwin Jackson. 224-3540.</p>	<p>GULF ISLAND SABBATICAL Furnished 3 bedrm modern home on Mayne Island, walking distance to ferry, w/w carpeting, all appliances, fireplace, 2 bathrooms, TV(dish), \$750/mo. lease, references, Available May. 321 Wood Dale Dr. Ph. 272-4930 evenings or 539-5888 weekends.</p>	<p>YOUNG ENGLISH research scholar with family requires to sublet/housesit 3 bedrm pleasant house/apartment, accessible children's hospital. Coming to Canada June 19 to end August '95. Call Dr. MacNab 263-5030 to discuss.</p>
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<p>'78 VW BUS Semi-camperized, great body, great engine (2-litre fuel inj.), great character, new brakes, battery, heater, exhaust, upholstery. All records. Great buy! Call Charlie or leave message at 822-3213.</p>	<p>COZY CEDAR GUEST COTTAGE UBC endowment lands. Minutes to UBC/beaches. Offers Vancouver visitors a peaceful alternative. Furnished, fully equipped 2 bedroom on beautiful one-acre natural forest setting. Monthly bookings available July onward. 222-0060.</p>	<p>SEATING SYMPOSIUM 12th International Seating Symposium, March 7-9, '96. Vancouver, BC. Call for Submissions, Deadline: June 1, 1995. Sponsored by: Sunny Hill Health Centre for Children; UBC, Division of Continuing Education in the Health Sciences; University of Pittsburgh, School of Health and Rehabilitation Sciences; RESNA. For further information, contact: 12th International Seating Symposium, Continuing Education in Health Sciences, The University of British Columbia, Rm. 105 - 2194 Health Sciences Mall, Vancouver, BC, Canada V6T 1Z3. Tel: (604)822-4965 or Fax: (604)822-4835.</p>
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Research centre named for supporter Maurice Young

by Abe Heffer
Staff writer

The Entrepreneurship and Venture Capital Research Centre has been named the W. Maurice Young Entrepreneurship and Venture Capital Research Centre.

"As a result of Maury Young's guidance, insight, sup-



Maurice Young

port and encouragement, we were able to turn the dream of developing the centre into a reality," said Raffi Amit, Peter Wall Distinguished Professor in the Faculty of Commerce and Business Administration and director of the centre.

Established in 1992, the centre's core activity is the

Entrepreneurship Research Alliance (ERA). The ERA involves more than 40 researchers and graduate students from across Canada and around the world who are dedicated to obtaining a deeper understanding of the issues that relate to the success and failure of new ventures.

Complementing a wide range of courses at the undergraduate and graduate levels is the Entrepreneurship Experience Program, which provides students with hands-on experience and training in a wide range of entrepreneurial ventures throughout the Lower Mainland.

Commerce Dean Michael Goldberg said Young's financial sponsorship allowed the centre to commence activities and develop both short- and long-term research plans and, in the process, map out a comprehensive approach to research, policy and community outreach.

"His strategic insights and direction were absolutely central in helping launch the centre," Goldberg said.

"In addition, Maury's ability to obtain support from the business community was a key element in the centre's receiving a \$2.125-million Major Collaborative Research Grant from the Social Sciences and Humanities Research Council."

The centre's research is made available through undergraduate and MBA entrepreneurship courses, continuing education and training, workshops and seminars.

People

by staff writers

Two UBC graduates and former faculty members are being honoured by the provincial government for their outstanding contribution to expanding knowledge and awareness of B.C.'s past.

Historians **Philip and Helen Akrigg** are the co-recipients of the first annual B.C. Heritage Award, a \$10,000 endowment which will be invested in a heritage-related, non-profit organization of their choice.

Philip Akrigg received an honours BA and a master's degree from UBC before embarking on studies at the University of California at Berkeley and a research fellowship at the Folger Shakespeare Library in Washington, D.C.

He returned to UBC where he served as a professor of English until his retirement.

Helen Akrigg, who also graduated from UBC with an honours BA and a master's degree, worked in the Dept. of Geography and taught at Vancouver City College.

The Akriggs have collaborated on several books which preserve and present intricate details of B.C.'s history including *British Columbia Place Names*, *British Columbia Chronicles* and *The H.M.S. Virago on the Pacific Coast*.

• • • •

Vancouver lawyer **Meg Gaily** has joined UBC as a Personal Security Co-ordinator in the Dept. of Health, Safety and Environment.

Among her responsibilities are co-ordinating and promoting personal security programs for the university with a focus on safety awareness and training; developing fact-finding and reporting mechanisms for personal security concerns; and collecting information and data about incidents on campus.

Gaily, whose areas of legal expertise include human rights law, has worked with students and other university groups in the area of safety issues during her tenure as a foot patrol co-ordinator at the University of Western Ontario.



Gaily

• • • •

Pearl Wierenga is UBC's new Health Education Co-ordinator.

Based in the Student Resources Centre, Wierenga is responsible for identifying critical health issues affecting university students and designing, implementing and delivering appropriate programs to address these issues.

A graduate of the BScN program at the University of Alberta, her previous experience includes serving as a public health nurse for the city of Edmonton and establishing Alberta Health's sexual health program in the Jasper National Park Health Unit.

Wierenga also served as a human sexuality education consultant with Correctional Services Canada in Bowden, Alta., developing and co-facilitating a human sexuality education program for male sex offenders.

Most recently, she was responsible for planning and implementing school-based prevention programs for the B.C. Ministry of Health's, alcohol and drug services branch in Revelstoke.



Wierenga

The Cecil H. and Ida Green Visiting Professorships of Green College at UBC

PHILIP TETLOCK

Director, Institute of Personality & Social Research
UNIVERSITY OF CALIFORNIA, BERKELEY

Alternative Metaphors for Judgment and Choice: The Psychologist, the Economist, the Politician and the Theologian

Tuesday, March 28 at 4:00 PM

Kenny Building, Room 2510 Peter Suedfeld Lounge

Political or Politicized Psychology:

Is the Road to Scientific Hell Paved with Good Intentions?

Wednesday, March 29 at 7:30 PM

Hotel Georgia, 801 West Georgia Co-sponsored by UBC Continuing Studies

How Politicized has Political Psychology Become?:

Examining the Debates over the New Racism and the End of the Cold War

Thursday, March 30 at 12:30 PM

Buchanan A-106

Good Judgment in World Politics: Who Gets What Right, When and Why

Friday, March 31 at 3:30 PM

Buchanan A-104

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Profile

At the Peak

*While far below men crawl in clay and clod,
Sublimely I shall stand alone with God.*

*- Mary Sinton Leitch
The Summit, Mount Everest*

by Gavin Wilson

Staff writer

There is something about mountain-climbing that brings out the philosopher in people.

Maybe it's the solitude. Or feeling insignificant before the mighty, impassive rock faces. Or knowing that death could be around a corner, waiting.

The philosopher in David McClung comes out when he starts talking about mountain climbing, avalanche research and life, topics that are inseparable for him.

In the past 25 years, the professor of Geography and Civil Engineering has climbed nearly 200 peaks and routes in the Pacific Northwest and taken part in six major expeditions to the Himalaya, Andes and Alaska.

Quoting a fellow climber, he says, "Life without risk is not really worth too much.

"The way I see it," he adds, continuing in his own words, "the things that are worthwhile are those that are really challenging — physically and mentally. I don't like taking the easiest path in life.

"We live in the age of convenience. Everything has to be convenient and easy," he says with real distaste. "I prefer things that are a bit risky."

McClung was born and raised in the Great Plains of the United States, but his affinity for the mountains dates from childhood and family vacations in the Rockies.

That is what drew him to the Pacific Northwest and, ultimately, to his field of research — avalanches.

After completing two physics degrees, McClung shifted to geophysics at the University of Washington, where he did his PhD on the study of avalanches. Since then he has opened new areas of research in this still relatively new, very specialized field.

His research has taken him from the mountains of western Norway to Rogers Pass with the National Research Council, Canmore, Alberta with Environment Canada and, in 1991, to UBC.

Ninety per cent of Canada's avalanches occur in B.C. Although most are in untracked wilderness, they are still a major concern for railways, the ski industry and the Ministry of Highways, which each winter must guard 66 high-risk areas.

"Every winter in Western Canada we have 300,000 large avalanches, and I mean large ones, greater than 1,000 metric tonnes of snow," he



Gavin Wilson photo

avalanche expert Prof. David McClung, above, displays the tools of his trade: a shovel, a collapsible probe pole and a transceiver. Inset at left, ice coats McClung's whiskers at the peak of 7,817-metre Nanda Devi, the highest peak in the central Himalaya. Background, the Rogers Pass section of the Trans-Canada illustrates B.C.'s avalanche problems. It is criss-crossed by several avalanche paths and kept open through the winter only with snow sheds built over the roadway and controlled avalanches.

says. "They are more common than rock slides or debris flows."

Avalanches can get bigger than that. Much bigger. Some involve immense slabs of snow weighing 100,000 or even 500,000 tonnes, the equivalent of 10,000 locomotives hurtling down the mountain at 200 kilometres an hour.

Although most pose no threat to people, the growing popularity of heli-skiing and other backcountry recreational pursuits has increased the chances of death and injury.

In 1991 an avalanche killed nine skiers in south-eastern B.C.'s Purcell Range, and in January two young men were killed while hiking near Prince George.

Closer to home, Blackcomb has 270 avalanche paths around its ski areas, and Whistler 100 more within the boundaries it controls.

McClung heads the UBC Avalanche Research Group, which is based in both the Geography and Civil Engineering departments. Their research deals with five areas: snow mechanics, avalanche dynamics, land use planning, avalanche prediction and the forces put on structures in deep snow cover.

A numerical forecasting model he has developed has undergone rigorous testing for the past three winters, proving 80 per cent accurate.

Based on a complex series of calculations including past occurrences, snow and weather parameters, it is the first new advance in B.C. for qualitative avalanche forecasting in 40 years. The Ministry of Highways, principal sponsor of the research, plans to use the new forecasting model throughout the province.

"We live in the age of convenience. Everything has to be convenient and easy. I prefer things that are a bit risky."

- David McClung

It is important to McClung that his research be put to practical use. That's one reason he wrote the *Avalanche Handbook*, a technical but accessible guide used in training schools and universities across North America. Published in 1993, 6,000 copies were sold the first year and it is being translated into Italian.

His insistence on utility may partly stem from his own experiences in the mountains, as a cross-country skier and mountaineer.

McClung himself has been swept up in avalanches, "but only in small ones. I'm pretty conservative," he says.

Many of his friends and acquaintances have not been so lucky. Several have died over the years.

In 1982 McClung and some friends were attempting to climb an 8,000-metre peak in Pakistan's Karakoram range. As they hunkered down in their base camp, it snowed every day for three weeks.

"I went home, but others stayed behind. One of my colleagues died in an avalanche after I left."

Fortunately, other expeditions were more successful.

In 1978 McClung scaled Nanda Devi, the highest peak in the central Himalaya at 7,817 metres. (By comparison, Mt. Baker is a mere 3,285 metres.)

In 1987 he was part of a team climbing 8,200-metre Cho Oyu, the world's sixth highest mountain, 30 kilometres west of Everest. Two in his party reached the peak.

"My feeling is that on a big mountain like that, it's the mountain that decides who gets to the peak," McClung said. "You must stay healthy, work hard and stay positive despite the cold, high altitude, personality conflicts and boredom."

These expeditions push the limits of mental and physical endurance. A Himalayan climb means 55 days living in a tent, a 160-kilometre hike just to get to a base camp, and much hard work.

There are rewards, of course. McClung mentions the solitude, scenic beauty, companionship and challenge.

"It's so wonderful to go through an experience like that. On the mountain for 55 days with no telephones, no fax, no internal combustion engines. All you have to worry about is moving from A to B, eating, sleeping and doing your work.

"To get up in the morning and look out over Tibet... it's magnificent."

And reaching a peak? "It's the greatest feeling you can imagine."

McClung leans back in his chair and offers some more philosophy.

"It's been said that mountaineering is a game of patience and endurance. I believe that's true. Perhaps, so is life. If you're patient, a lot of things follow."