



New chair seeks pollution solutions

By GAVIN WILSON

Reducing pollution from pulp and saw mills in the forest industry is the goal of a new industrial chair based in the faculties of Applied Science and Science.

The research is expected to have immediate applications in pollution control in the forest products industry, said William Oldham, head of the Department of Civil Engineering.

The chair — the Natural Sciences and Engineering Research Council Industrial Chair in Forest Products Waste Management — will receive \$2.6 million over five years.

The funding allows for a senior chair, two junior faculty positions, research associates, technicians, graduate students, support staff and new equipment. Oldham said he expected the three academic positions to be filled by September.

Specific research undertaken through the chair could include ways of improving pulp bleaching and reducing the use of chlorine, which could lead to reduced dioxins in mill effluent.

Another research aim is to seek a better understanding about how currently available end-of-pipe wastewater treatment processes can be used to

meet changing effluent requirements.

Other areas of research will include in-house process changes to reduce the production of known pollutants, treat-

ment and cleanup procedures, the development of bacteria cultures that degrade specific impurities and the safe disposal of liquid and solid wastes.

The senior chair will be based in the Environmental Engineering Group within Civil Engineering. The group has become one of the largest and most

complete research programs in waste management in Canada since its founding 23 years ago.

One of the junior chairs will be based in Chemical Engineering, a department that has a long-standing relationship with the pulp and paper industry.

The other junior chair will be in Microbiology, where there is an established interest in applying bacteriology to waste treatment problems.

The microbiologist will use genetic engineering to study enzyme systems that can safely and cost-effectively remove toxic wastes. The aim is to develop micro-organisms that can degrade toxic compounds generated during the pulping process, and those used as wood preservatives, including PCP and others, which risk contaminating the environment with heavy metals and arsenic.

External funding for the chair will be provided by NSERC, the Council of Forest Industries, the provincial Ministry of Environment and the Science Council of B.C. UBC will fund renovations to lab facilities.

Other cooperating agencies are the Wastewater Technology Centre, Environment Canada and PAPRICAN, the Pulp and Paper Research Institute of Canada.



Spring...(?)

Forgotten were record snowfalls that shut the campus down a few short weeks ago, as students and staff basked in unseasonably mild February weather last week. Alas, it was but a brief respite!

Photo by Charles Ker

Profession under scrutiny in study

By CONNIE FILLETTI

A team of UBC researchers is investigating the feasibility, reliability and validity of a quality assurance system for practicing pharmacists in B.C.

The three-year study is a joint venture of UBC's Faculty of Pharmaceutical Sciences and the College of Pharmacists of British Columbia.

"Continuing competence is emerging as one of the more important issues facing health

professionals," said David Fielding, principal investigator of the study.

He indicated that a survey of the literature suggests that there is, at present, a declining confidence in the knowledge and competence of professionals. "The medical mystique is fading as consumers become more sophisticated in their knowledge and expectations of health professionals. There are growing numbers of malpractice suits and increasing public concern about the quality of services."

He added that estimates of the number of licensed health professionals who may be unfit to practice are placed conservatively at five to 10 per cent, and that incompetence is felt to be a contributor to sub-standard performance.

As a result, there is increasing pressure on licensing bodies to implement a system of assuring that the individuals they license maintain a minimal level of competence. Fielding said.

He explained that the overall objective of the project is to determine the possibility of developing instruments and procedures capable of measuring the ongoing competence of all licensed pharmacists in the province.

"We have had a tremendous amount
See OVER on Page 2



Fielding

Inside

PROGRAM GOES DOWN UNDER: A program developed by Computing Services has been sold to a large Australian company. *Page 2*

STUDY GOES UP NORTH: A UBC professor studies hearing problems among northern Native children. *Page 6*

STUDENTS GO DOWN BELOW: Engineering students compete in human powered submarine contest. *Page 8*

EUS holds forum on affirmative action

By GAVIN WILSON

Native Indian culture and traditions must be respected at UBC if First Nations students are to feel welcome, a recent forum on affirmative action was told.

"University can be a foreign, hostile place for native students," said Verna Kirkness, director of UBC's First Nations House of Learning.

Kirkness was speaking at the second of four public debates organized by the Engineering Undergraduate Society on rights and freedoms at

the university.

The forum was organized as part of disciplinary action taken by UBC after an engineering student newsletter published last March was found to be derogatory to First Nations people, women and gays.

About 70 people, mostly engineering students, attended the affirmative action session, held Feb. 15 at the Student Union Building auditorium.

Kirkness said the university must respect the cultural integrity of and increase access for native students, and seek to reduce cultural distances. As

part of that process, she said, the university should recognize oral traditions as well as literate knowledge.

"People who arrive on campus are expected to socialize into the culture of the university at the expense of the culture that they bring with them," she said. "This is a real problem for First Nations students."

Native people are significantly under-represented in the student population, despite the "urgent need" for more native doctors, teachers, lawyers and engineers, she said.

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Highest number in Canada

UBC researchers win fellowships

By GAVIN WILSON

UBC has topped the nation in the first-ever competition for a new international post-doctoral fellowship program.

The university was awarded 10 International Fellowships by the Natural Sciences and Engineering Research Council — more than any other university in Canada.

A total of 83 fellows from 25 countries were awarded from the 787 applications received by Canadian univer-

sities. Fellows took up their awards between Oct. 1, 1990 and Jan. 15, 1991.

Candidates must be foreign nationals who hold a doctoral degree in science or engineering from a recognized university abroad.

International Fellowships aim to create and reinforce links between Canadian and foreign research establishments, enhance Canada's international reputation in research, strengthen the research environment in Canada universities and give young scientists

and engineers from abroad opportunities to advance their research training.

The University of Toronto was awarded eight fellowships, Alberta and McGill won six, Guelph claimed five, Queen's and Waterloo won four, and Saskatchewan, McMaster, Montreal, Dalhousie and Simon Fraser were each awarded three.

Some of the fellowships were declined, including two at UBC, as several candidates took other positions at institutions outside Canada.

Graduate Studies high priority for university

By ABE HEFTER

If John Grace had long sleeves on his shirt, there's little doubt they'd be rolled up.

On this mild spring-like day,

the new dean of Graduate Studies sat in his office in a short-sleeved shirt, discussing his future plans. It wouldn't be difficult to envision Grace rolling up his shirt sleeves in anticipation of the task at hand.

"UBC sees itself as a very research-intensive university," said Grace. "It sees its role as one that will have the greatest impact in terms of advanced training. Certainly there are more and more people in need of continuing education if we're

going to compete as a province and as a country. We have to have people with suitable education and training who can contribute — and that's where this faculty can play a role."

Grace said UBC has declared its graduate programs a major priority in the development of the university. He believes there are real opportunities for the faculty to be involved in new programs and new activities.

"We also have a role to play in encouraging new initiatives," he said. "For example, there are a large number of new programs going through this year, such as a PhD in nursing, a new clinical doctorate in pharmaceutical sciences and a masters program in landscape architecture."

Grace points out that Graduate Studies is unique in that it cuts across all areas of the campus. And that spells diversity.

"It certainly is a challenge," said Grace. "One moment I'm dealing with fine arts, the next moment with forestry or nursing. It's immensely challenging, dealing with a wide range of people and subject areas."

One of the greatest challenges that

UBC thieves foiled again!

Operation Wallet, a program aimed at addressing the wallet theft problem at UBC, has been a success.

"It was our goal to decrease the number of wallets stolen on campus by at least 10 per cent from the previous year," said RCMP Constable Bernie Smandych of the university detachment.

"We ended 1990 with a 17-per-cent decrease, thanks to the cooperation and support received from the campus community."

Operation Wallet was a special program of Campus Safety Awareness Month organized by the RCMP last September.

Smandych said a significant rise in the number of wallet thefts on campus, including purses and backpacks, prompted the need for the awareness campaign. In 1989, 270 wallets were stolen compared to 178 wallet thefts in 1988. The final tally for 1990 was 224 wallets stolen.

The next Campus Safety Awareness Month is scheduled for September, 1991. It will focus on traffic safety.

Grace faces is finding room for all those graduate students, especially since the university several years ago decided to increase the number of graduate students to about 6,000. The



Photo by Media Services

John Grace, dean of Graduate Studies

current number stands at just over 4,800.

"One of my real concerns is the question of space," said Grace. "Space is a terrible problem for many departments and certainly for graduate students as a group. Then there's the whole question of housing and the financial needs of graduate students."

Grace is also concerned about the need for the university to attract the best graduate students.

"To do that, we have to have competitive scholarships. We also have to have good amenities and an excellent overall climate to keep UBC competitive."

One initiative that is currently un-

der way at UBC is Green College, which Grace said presents a significant opportunity to the university at a time when it is striving to increase its emphasis on graduate students and on research.

"Green College will help to attract the most able graduate students from around the world. The selection procedures will assure academic quality and commitment to a spirit of community life."

Grace said the Green College academic plan has been finalized and has now been submitted for Senate approval. Construction could begin early next year.

Grace was a faculty member at McGill University from 1968 to 1979. He was named head of the UBC Chemical Engineering Department in 1979, a position he held until 1987 when he took a break from administrative duties to devote his full attention to teaching and research. He took up his six-year appointment as dean on July 1, 1990. Although his teaching has been interrupted, he intends to continue his research as much as possible.

"I think it's essential, especially in the graduate faculty, where you're having to make decisions on PhD theses and on other academic matters. You have to have somebody with credibility as a scholar making those decisions."

Over 500 pharmacists participate in study

Continued from Page 1

of volunteer participation by the pharmacists of B.C. in this program. To date, over 500 pharmacists have assisted in the development of various aspects of it. We hope to develop a system of assessment to help identify potential or real weaknesses, and address them before they become a serious problem."

There are approximately 2,400 pharmacists licensed with the College of Pharmacists of British Columbia.

Fielding said any assessment of competence should reflect several widely accepted principles such as clearly stating the competence areas to be considered and measuring of ability against defined standards.

He added that the assessment system should also reflect actual practice and, prior to adoption, be studied for relationships to other measures of quality care.

"The focus should be on the ability to provide care," Fielding said. "Our goal is to encourage individuals to pursue educational activities which will maintain competence. The evaluation system and continuing education should work in conjunction with one another."

During the first two years of the project, Fielding and his research associates have been developing and validating a blueprint for the test instru-

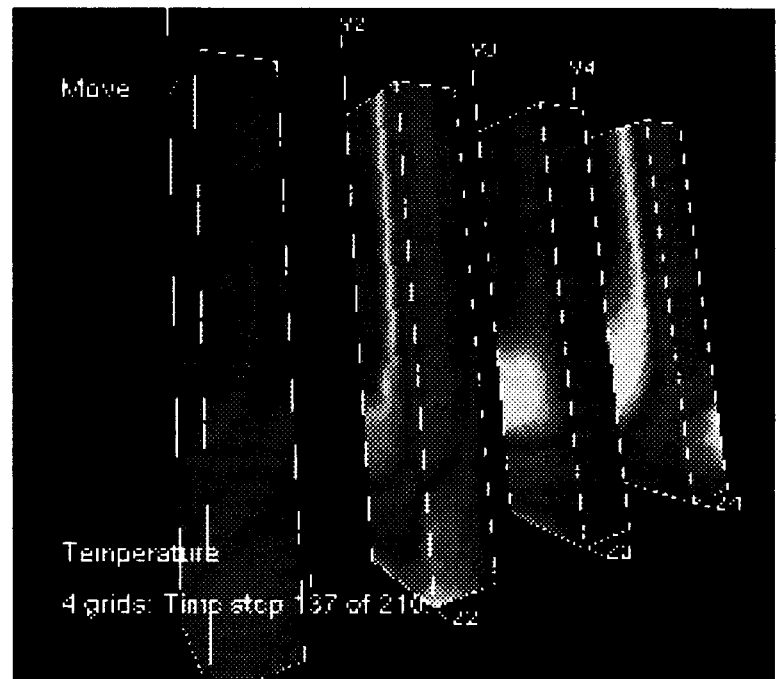
ments, preparing and pre-testing questions to be included in a test of applied knowledge and developing and testing a peer review procedure. The team is exploring the ability of these instruments and procedures to produce reliable and valid results.

The third year of the project will include a random sample of 300 B.C. pharmacists completing the test of applied knowledge. A sub-set of 100 pharmacists from this sample will be chosen to participate in a peer review of their practice skills.

The ability of the knowledge test to predict practice performance will also be assessed. In addition, the ability of various demographic and practice characteristics to predict performance on the knowledge test and the peer reviews will be investigated.

The interdisciplinary team of researchers guiding the project with Fielding are Gordon Page, Faculty of Medicine; Dr. Michael Shulzer, Department of Statistics and the Faculty of Medicine; Todd Rogers, formerly of UBC's Faculty of Education and now at the University of Alberta; and Carol O'Byrne from the College of Pharmacists of British Columbia.

Funding for the study is being provided by the B.C. Health Research Foundation.



Courtesy Steve Cockcroft

Example of graphic image produced by UBC-developed software.

Computing Services software sale a first

By GAVIN WILSON

One of Australia's largest mining corporations has bought a computer software package developed by University Computing Services.

The sale of the package is a first for Computing Services, a campus unit that assists faculty, staff and students with their computing needs.

The software, called DataView, is an interactive, three-dimensional visualization tool that allows researchers to use computer graphics to interpret the results of their work and get a better grasp of vast quantities of data.

"It's the old idea of a picture being worth a thousand words," said Helen Salter, a consultant hired to write an instruction manual and make the program more user-friendly.

"DataView doesn't just produce graphics for use as presentations, it allows you to play with the data as you go."

Using the program, researchers can create and manipulate three dimensional images and animate them through time. This makes it easier to find trends and get a qualitative appreciation of massive amounts of data that might otherwise take up tens of thousands of printed pages, Salter said.

The software was first developed as a tool for researcher Steve Cockcroft, a doctoral student in the Centre for Metallurgical Process Engineering.

Cockcroft's thesis dealt with problems faced by industry in casting ceramic bricks that are used to line glass furnaces. He was modeling thermal stresses that arise in the bricks as they cool. Up to 50 per cent of the bricks can form cracks due to differential cooling.

The sheer volume of information generated by the program — about 50 megabytes, or 50 million separate pieces of information — created severe handling problems.

"It took 10 days to run it on the computer," said Salter.

John Hogg, a senior technical specialist with Computing Services, worked with Cockcroft to develop a program that could display many variables at once. The software allowed the display of four blocks of information side by side, showing temperature plus stress in three directions.

Using the new software, Cockcroft was able to give a physical explanation of why the cracking occurred and recommend another method of manufacture.

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UBC Media Services Photography 822-4775

Library forced to reduce purchases as costs soar

By ABE HEFTER

The proliferation of research publications and staggering increases in the cost of academic journals are threatening the scholarly communication system.

"UBC Library, like all major research libraries today, is not able to keep up with the unending avalanche of publications," said Brenda Peterson, information and orientation librarian. "What has turned this situation into a crisis is the escalating cost of serials."

Peterson said the causes and implications of this crisis, as well as the solutions, go far beyond the library and its budget. The university plans to tackle those concerns at a public symposium at 1 p.m., March 14, in the Henry Angus Building. Sponsored by Dan Birch, vice president, academic, and UBC Librarian Ruth Patrick, the symposium will bring together faculty, librarians and university administrators to discuss possible solutions.

Members of the panel include Dr. Martin Hollenberg, dean of medicine, Peter Lusztig, dean of commerce and business administration, Robert Kubicek, associate dean of arts, and David Measday, associate dean of science.

The keynote address will be delivered by Ann Okerson, director of the office of scientific and academic publishing, Association of Research Libraries, in Washington, D.C.

Peterson said not only are research libraries unable to keep abreast of scholarly publications, they're losing ground.

"University library budgets, despite increases, are able to purchase fewer and fewer publications, resulting in less comprehensive research collections."

Peterson said the main reason for the decrease in buying power is the tremendous rise in the cost of serials, especially technical, medical and sci-

entific journals published abroad.

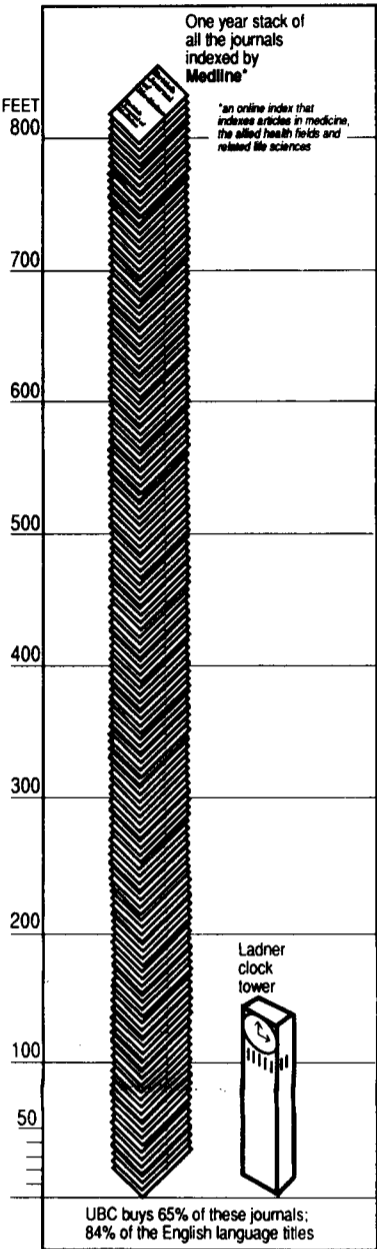
"Over the last 15 years, average serials prices have been going up at twice the consumer price index. The price of foreign publications has been going up much faster."

Since 1976, the UBC library has cut over 2,800 serial subscriptions. Despite these cuts, the library now spends between 60 to 65 per cent of the \$6 million collections budget on serials, compared to 32 per cent, 20 years ago.

UBC library is not alone in cancelling subscriptions. Other major North American research libraries are embarking on massive cancellation projects. The University of California, Berkeley, recently cut \$400,000 U.S. from its serials budget. And the University of Toronto cancelled more than 1,500 serial subscriptions in the last few years.

Here are some examples of price increases over the last seven years: The Journal of Comparative Neurology now goes for more than \$5,000, compared to just over \$1,500 in 1984. And Brain Research will set you back a staggering \$7,858. Seven years ago it cost just under \$3,500.

"With new computer technology, there is some optimism for finding a partial solution to this crisis," said Peterson. "However, as long as commercial publishers maintain copyright control, the costs of using technology for the dissemination of published research could be even higher for universities. The system of scholarly communication must be reformed and this will require the leadership of the faculty and the university administration."



UBC Reports Advertising/Insert Policy

The following outlines the advertising and inserts policy for UBC Reports, effective April 1, 1991. For further information, please call the UBC Community Relations Office at 822-3131.

Classified:

Faculty, Staff and Students — \$12 for 7 lines/issue. \$.75 for each additional word.

Off-Campus — \$14 for 7 lines/issue. \$.80 for each additional word.

The deadline for classified ads is 4 p.m. Monday, one week prior to any edition of UBC Reports. All ads must be paid in advance in cash, by cheque or by internal requisition.

Display Ads:

\$14 per column inch (discount for more than one insertion, paid in advance). The deadline for display ads is 4 p.m. Tuesday, one week prior to any edition of UBC Reports.

UBC Reports is published twice monthly. It has an on-campus circulation of 8,000 and is circulated to 25,000 homes on Vancouver's west side through the Courier.

Inserts:

The Community Relations Office must be notified at least 14 days in advance of publication date to reserve insert space in UBC Reports. Edited and layout-ready copy must be submitted to the UBC Reports editor, on Microsoft Word or Pagemaker disk, no later than nine days prior to publishing date. Any graphics or photographic material must accompany insert copy.

Insert Rate: \$750 per page.

Racism stems from ignorance, forum told

Continued from Page 1

More native Indian professors and courses on native peoples would help alleviate the problem, she said.

"We need a reciprocal relationship," said Kirkness. "Racism stems from ignorance. When you get to know people from other cultures, these problems diminish."

Other panel members were Dr. William Webber, associate vice-president, academic, Registrar Richard Spencer and Judith Myers, associate dean for the promotion of women in the Faculty of Science.

Panel members discussed hiring and admission practices, methods of increasing the number of women in science and engineering, the fairness to non-English speakers of language re-

quirements for university admission, and other issues.

On Jan. 31, about 100 people attended the first session in the forum series, which focussed on discrimination. A third session, which looks at freedom of expression, was slated for Feb. 28. Scheduled to appear were columnist Stephen Hume, education reporter Frances Bula and art critic Ann Rosenberg, all of the Vancouver Sun, and Mark Keister of the Alma Mater Society council.

The final session, on the topic of discipline on campus, will be held March 14 with EUS newsletter editor Martin Sikes, Linda Shout of the AMS Women's Committee and UBC President David Strangway.

UBC not just for the young

By RON BURKE

Comedian Groucho Marx said: "Youth is such a wonderful thing — too bad it's wasted on the young," or words to that effect.

A similar opinion might be offered regarding education, but at UBC nothing could be further from the truth. As Groucho's agent might have said, adult education is doing boffo box office on campus.

About 85,000 people each year — more than double the annual academic enrolment — come to UBC for non-credit, non-degree programs (otherwise known as adult or continuing education). That's the equivalent of every man, woman and child in the municipality of Delta taking a course.

Why are all these people coming to UBC?

Mary Holmes, director of marketing services for UBC's Centre for Continuing Education (CCE), says people typically take courses to upgrade professional skills or simply for the enjoyment of learning. Upgrading might involve courses in computer skills, studio arts (demand for courses in film making has paralleled the film and

television boom in B.C.) and communication skills (everything from memo writing to — gulp! — public speaking).

Popular general-interest courses include languages and almost anything to do with the environment, from forest ecology to owl-calling.

"One of our real strengths is that we draw on the many different academic disciplines at UBC," said Holmes.

"A good example is a popular new course called The Compleat Naturalist," she explained. "The instructors come from the areas of forest sciences, geological sciences, geophysics and astronomy, oceanography and zoology. That's what I'd call multidisciplinary."

"The public looks to UBC for credible access to information"

The six-part course offers the basics for a broad-based understanding of the environment.

"A course like this lets us break through the artificial boundaries between areas of knowledge," said David Vogt, CCE's science program director. "For example, I'm trained as an astronomer, but

AROUND & ABOUT

if a participant asks me a question about a flower or a bird, I want to be able to give an answer."

Courses on the environment are a strong growth area for CCE.

"Everyone's concerned about the environment, but a lot of people don't know how to interact knowledgeably," said Vogt. "The public looks to UBC for credible access to this information."

Eventually, Vogt hopes to ex-

pand the courses with an environmental focus into a 16-part, certificate program.

Another CCE success story is the Summer Program for Retired People. Last year more than 500 people, from as far away as Calgary, registered for one or more of the various week-long courses offered. The program gives these non-traditional students a taste (or another taste) of student life — right down to living in residence, if desired. (Presumably water fights are optional.)

Program director Marcie Powell thinks many of the 55-and-older participants enjoy the ambience of the program.

"Older adults are a wonderful group with lots of energy."

"It's an opportunity to learn with friends and have the stimulation of the university environment," she said.

Continuing education instructors

typically find older students an enthusiastic bunch.

"The participants are very appreciative of the courses, they've had lots of experiences and they like to offer opinions," said Powell. "They're a wonderful group with lots of energy."

UBC staff members make up another group of loyal CCE participants. Computer courses in particular are popular with staff members, who can use their tuition benefits to waive course fees.

The Centre for Continuing Education is not the only UBC unit offering adult education courses. Many faculties and professional schools, from Agricultural Sciences to the School of Social Work, offer their own continuing education programs.

CCE, along with a number of other campus units, is featured in a colorful storefront display at City Square Mall (12th and Cambie). The display is entitled UBC: More Than Meets the Eye and focuses on publicly accessible programs and facilities at the university.

March 10 – March 23

MONDAY, MAR. 11

Paediatrics Research Seminar

Research Project Presentations By Paediatric Fellows And Residents. Speaker to be announced. University Hospital Shaughnessy Site D308. Call Dr. Josef Skala at 875-2492.

UBC String Chamber Ensembles



Free admission. Music Recital Hall at 12:30pm. Call 228-3113.

Mechanical Engineering Seminars

Experimental Investigation Of The Tolerant Wind Tunnel For Unsteady Airfoil Motion Testing. Lingzhe Kong, M.A.Sc. student, Mechanical Engineering, UBC.; C.A.D. Assisted Milling Process Monitoring And Control. Alan Spence, Ph.D. candidate, Mechanical Engineering, UBC. ChemEngineering 1202 from 3:30-4:30pm. Call 228-6200.

Biochemistry Seminar

Chromatin Structure OF The Transcriptionally Active Histone H5 Gene. Dr. James R. Davie, Biochemistry, U. of Manitoba. IRC #4 at 3:45pm. Call 228-6279.

Astronomy Seminar

Properties Of Supernova Remnants In M33. Dr. Neb Duric, U. of New Mexico. Geophysics/Astronomy 260 at 4pm. Coffee from 3:30pm. Call H. Richer at 228-4134/2267.

TUESDAY, MAR. 12

Medical Genetics Seminar

Detecting Oncogene Activation In Neoplasia: Cytogenetics, Southern Blotting And PCR. Dr. Doug Horsman, Cytogenetics/DNA Diagnostics Laboratory, BC Cancer Agency. IRC #1 at 8:30am. Coffee from 8:15am. Call 228-5311.

Financial Planning Noon-Hour Series



The Importance Of Overall Retirement Income Planning (RRSP'S, Annuities, RRIF'S). Jim Rogers, The James E. Rogers Group Ltd. Henry Angus 104 from 12:30-1:20pm. Registration not required. Call 222-5270.

Neuroscience Discussion Group

Time Resolved Measurements Of CA2+ And Secretion In Single Rat Melanotrophs. Dr. Paul Thomas, Physiology/Biophysics, U. of Washington. University Hospital, UBC Site at 4pm. Call 228-2330.

UBC Reports is the faculty and staff newspaper of the University of British Columbia. It is published every second Thursday by the UBC Community Relations Office, 6328 Memorial Rd., Vancouver, B.C., V6T 1W5. Telephone 822-3131.

Advertising inquiries: 822-4775. Managing Editor: Steve Crombie. Ass't Editor: Paula Martin. Contributors: Ron Burke, Connie Filletti, Abe Hefter, Charles Ker, and Gavin Wilson.



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CALENDAR DEADLINES

For events in the period Mar. 24 to Apr. 6, notices must be submitted by UBC faculty or staff on proper Calendar forms no later than noon on Tuesday, Mar. 12 to the Community Relations Office, 6328 Memorial Rd., Room 207, Old Administration Building. For more information call 822-3131. The next edition of UBC Reports will be published Mar. 21. Notices exceeding 35 words may be edited.

Botany Seminar

L:D Cycles Vs. Continuous Light In Two Species Coccolithophorids. L. Lynne Price, M.Sc. Candidate, Botany, UBC. BioSciences 2000 at 12:30pm. Call 228-2133.

Lectures In Modern Chemistry

New Dimensions In Chemical Measurement/Characterization. Dr. Gary Hieftje, Chemistry, U. of Indiana, Bloomington, IN. Chemistry B250 at 1pm. Call 228-3266

Interfaith Symposium



Tradition And Modernity: Is The Conflict Reconcilable? Rabbi Mordecai Feuerstein. St. Mark's College from 8:30-9pm. Call 224-3311.

WEDNESDAY, MAR. 13

Biomedical Research Seminar

Neutrophil Activation By NAP-1/IL-8 And Other Chemotactic Cytokines. Dr. Marco Baggiolini, Theodor-Kocher Institute, U. of Bern, Switzerland, Biomedical Research Centre Seminar Room at 12:30pm. Call 822-7810.

Microbiology Seminar Series

The Pro-Thr Box Of Endoglucanase A (CenA) Of Cellulomonas Fimi: A Dispensable Linker Between Domains. Hua Shen, Microbiology, UBC. Westbrook 201 from 12:30-1:30pm. Call 228-6648.

Wednesday Noon-Hour Series

Peter Hannan, recorder; Jacqueline Retzlaff, harpsichord/synthesizer. Music Recital Hall at 12:30pm. Admission: \$2 at-the-door. Call 228-3113.

Forestry Seminar

Wood Adhesives In The 1990's. The Glue Holding The Forest Products Industry Together? Dr. Simon Ellis, Harvesting/Wood Science, Forestry, UBC. MacMillan 166 from 12:30-1:30pm. Call 228-2507.

Geography Colloquium

Doubling Salmon Production In The Fraser River: Is this Sustainable Development? Dr. Michael Healey, Director, Westwater Research Centre, UBC. Geography 201 at 3:30pm. Call 228-3268.

Physiology/Zoology Seminar

Permissive And Restrictive Periods For Spinal Cord Regeneration In The Embryonic Chick. Dr. John Steeves, Zoology, UBC. IRC #3 at 3:30pm. Call 228-4224.

Biotechnology Seminar



Fluid-Mechanical Effects On Animal Cells In Bioreactors. Dr. E. Terry Papoutsakis, Chemical Engineering, Northwestern U., Evanston, IL. IRC #5 at 4pm. Call Dr. J. Piret 228-5835.

Resource Ecology Seminar

Food, Competition, Predation And The Distribution Of Sparrows. Dick Repasky, UBC. BioSciences 2449 at 4:30pm. Call 228-4329.

Christianity/World Conflict Discussion

Religious Complexities Behind The Gulf War. Dr. Hanna Kassis, Professor, Religious Studies. Buchanan D306 at 4:30pm. Call 224-1410/3722.

Economics Departmental Seminar



An Exact Unbiased Estimator Of A First-Order Autoregressive Unit Root Model. Don Andrews, Yale U./Cowles Foundation.

Host: Professor James Nason. Brock Hall 351 from 4-5:30pm. Call 228-2876.

Applied Mathematics Seminar

Time-Dependent Nucleation; Application Of WKB Methods. Dr. Bernard Shizgal, Chemistry, UBC. Mathematics 229 at 3:45pm. Call 228-4584.

THURSDAY, MAR. 14

Physics Colloquium

High Accuracy Measurements On Cold Neutrons. Geoffrey Green, National Institute Of Standards And Technology, Gaithersburg, MD. Hennings 201 at 4pm. Call 228-3853.

Pharmacology Seminar

Diabetes-Induced Changes In Cholinergic And Adrenergic Nerve Terminals. Dr. Neil Hartman, Pharmaceutical Sciences, UBC. IRC #1 from 11:30am-12:30pm. Call 228-2575.

Collegium Musicum



John Sawyer, director. Admission free. Music Recital Hall at 12:30pm. Call 228-3113.

Obstetrics/Gynaecology Research Seminar

Ovulation Failure. Dr. Basil Ho Yuen, Professor, Obstetrics/Gynaecology, UBC. Grace Hospital 2N35 from 1:30-2:30pm. Call 875-2334.

Zoology Lecture

Semiochemicals: The Essence Of Integrated Management Of The Mountain Pine Beetle. Professor John H. Borden, Biological Sciences, Simon Fraser U. BioSciences 2000 at 4:30pm. Call 228-3168.

Distinguished Artists Series

Douglas Finch, piano. Music Recital Hall at 8pm. Prelude lecture 7:15pm. Admission: Students/Seniors \$7. Others \$12. Call 228-3113.

First Annual Symposium On Library Issues

Scholarly Communication Systems In Jeopardy? Ann Okerson, Director, Office of Scientific/Academic Publishing, Association of Research Libraries, Washington, DC. Panel: Dr. M.J. Hollenberg, Dean, Medicine; Dr. R.V. Kubicek, Associate Dean, Arts; Dr. P.A. Lusztig, Dean, Commerce; Dr. D.F. Measday, Associate Dean, Science; Dr. R.J. Patrick, U. Librarian; Dr. J.L. Wisenthal, English. Henry Angus 110 from 1-2:30pm. Call 228-2076.

FRIDAY, MAR. 15

Paediatrics Grand Rounds



Basic Fibroblast Growth Factor Induces Retinal Regeneration In Vivo. Dr. Martin J. Hollenberg, Dean, Medicine, UBC. University Hospital, Shaughnessy Site D308 at 9am. Call 875-2118.

Economics Departmental Seminar

Manipulating Futures Markets By Corner And Squeeze. R. Glenn Donaldson, Princeton U. Host: Professor W. Craig Riddell. Brock Hall 351 from 4-5:30pm. Call 228-2876.

Chemical Engineering Seminar

A Perspective On Solar Hydrogen And Its Utilization In Saudi Arabia. Dr. A. Zahed, Chemical Engineering, UBC. ChemEngineering 206 at 3:30pm. Call 228-3238.

Asian Centre Indonesia Day

Presentation On Bali (The Last Paradise), Indonesian Film And Food, Gamelan Music Performance And Exhibition Of Wayang Puppets. Asian Centre Auditorium from 12:30-10pm. Call 228-3814.

Biochemistry Seminar

Biological Consequences Of Alteration Of The Physical Properties Of Membranes. Dr. Myer Bloom, Physics, UBC. IRC #4 at 2:30pm. Call 228-5925.

Fisheries/Aquatic Science Seminar

Distributions Of Water Properties, Fish/Fishermen Off SW Vancouver Island. Mike Healey, UBC. Biosciences 2361 at 3:30pm. Call 228-4329.

Collegium Musicum

John Sawyer, director. Admission free. Music Recital Hall at 8pm. Call 228-3113.

Leon/Thea Koerner Lecture

The Spiritual Aspects Of Islam. Professor Dr. Annemarie Schimmel, Harvard U./U. of Bonn, Near East Languages/Civilization. Only female recipient of the King Faisal Gold Medal in Islamic Studies. Buchanan A202 at 12:30pm. Call 228-6523.

Faculty Development Program

The Art Of Teaching Science Brown-Bag Seminar. How to create an exciting and positive learning climate in science. Walter Boldt, Education. Hebb 12 from 12:30-1:20pm. Call 222-5243.

SATURDAY, MAR. 16

Vancouver Institute Lecture

Sexual Assault: Issues Which Won't go Away. Christine Boyle, Visitor, Law, UBC. IRC #2 at 8:15pm. Call 228-5675.

UBC Doctoral Recital

Brandon Konoval, piano. Admission free. Music Recital Hall at 8pm. Call 228-3113.

Children's Story Hour at MOA

Ananse Stories. The Spider Man Stories told by Mary Love May. Children under 6 must be accompanied by an adult. Free with Museum admission. Gallery 9 at 11am. Call 228-5087.

MONDAY, MAR. 18

Economics Departmental Seminar

Stock Prices And Volume. George Tauchen, Duke U. Host: Professor Harry J. Paarsch. Brock Hall 351 from 4-5:30pm. Call 228-2876.

Applied Mathematics Seminar

Positive Solutions Of A Nonlinear Elliptic Equation. Dr. W.R. Derrick, Mathematics, U. of Montana, Missoula, MT. Mathematics 229 at 3:34pm. Call 228-4584.

UBC Chamber Wind Ensembles

Admission free. Music Recital Hall at 12:30pm. Call 228-3113.

Biotechnology Lab Seminar



Signaling Systems For Inducible Proteinase Inhibitor Genes In Plants. Dr. Clarence Ryan, Institute of Biological Chemistry, Washington State U. IRC #1 at 2:30pm. Call Dr. J. Kronstad at 228-4732.

Mechanical Engineering Seminar

The Nature And Effect Of Tensioning Band Saw Blades. John Taylor, Ph.D. student, Mechanical Engineering, UBC. ChemEngineering 1202. Call 228-6200.

Mechanical Engineering Seminar

Computer Aided Design Of Developable Surfaces. Brian Konesky, M.A.Sc. student, Mechanical Engineering, UBC. ChemEngineering 1202 from 3:30-4:30pm. Call 228-6200.

Astronomy Seminar

Early Results With The Hubble Space Telescope Wide-Field Camera. Dr. William Baum, U. of Washington. Geophysics/Astronomy 260 at 4pm. Coffee from 3:30pm. Call H. Richer at 228-4134/2267.

Cecil/Ida Green Visiting Professor Lecture

Biochemical Seminar. B-Lactam Biosynthesis: B-Lactams-63 and Still Going Strong. Dr. Arnold L. Demain, Professor, Industrial Microbiology, Massachusetts Institute of Technology. IRC #4 at 3:45pm. Call 228-5675.

Faculty Development Program Seminar

Team Learning Brown-Bag Lunch: Using The Idea of Groups of Students Working To Learn Parts of The Curriculum With The Instructor as Facilitator. Jim Forbes, Commerce/Business Administration. BioSciences 2449 from 12:30-1:20pm. Call 222-5243.

TUESDAY, MAR. 19

Medical Genetics Seminar



Gene Transfer To Primitive Hematopoietic Cells. Dr. Keith Humphries, Associate Professor, Terry Fox Laboratory, Medicine, UBC. IRC #1 at 8:30am. Coffee from 8:15am. Call 228-5311.

Economics Departmental Seminar

Hierarchy, Loss Of Control And The Theory Of State Ownership In A Socialist Economy. Ying Yi Qian, Stanford U. Host: Professor W. Craig Riddell. Brock Hall 351 from 4-5:30pm. Call 228-2876.

Neuroscience Discussion Group

Hippocampal Synaptic Plasticity: What's Good Can Be Bad. Dr. Michel Baudry, Biological Sciences, U. of Southern California. University Hospital, UBC Site G279 at 4pm. Call 228-2330.

Botany Seminar

Distribution Of Organelles In Wound-Healing In *Vaucheria longicaulis* Var. *Macounii*. Laurie Tornbom, M.Sc. candidate, Botany, UBC. BioSciences 2000 at 12:30pm. Call 228-2133.

Financial Planning Noon-Hour Series

Will And Estate Planning For Those Of All Ages (Note: Tax Planning Not Covered). Keith Farquhar, Law, UBC. Henry Angus 104 from 12:30-1:20pm. Registration not required. Call 222-5270.

March 10 – March 23

History Public Lecture

Memory And Culture In Early Modern England. Professor Daniel Wolf, History, Dalhousie U. Buchanan B324 from 12:30-1:30. Call 228-2561.

3M Lectures In Modern Chemistry



Synthesis/Applications Of Functionalized Polyacetylenes. Dr. Robert H. Grubbs, Chemistry, California Institute of Technology, Pasadena, CA. Chemistry B250 at 1pm. Refreshments from 12:40pm. Call 228-3266.

Interfaith Symposium

Healing Their Wounds: Psychotherapy With Holocaust Survivors And Their Children. Robert Krell. St. Mark's College from 7:30-9pm. Call 224-3311.

Cecil/Ida Green Visiting Professor Lecture

Secondary Metabolism In Microorganisms: Secondary Metabolites-Who Needs Them? Dr. Arnold L. Demain, Professor, Industrial Microbiology, Massachusetts Institute of Technology. Woodward IRC #1. Call 228-5675.

WEDNESDAY, MAR. 20

Wednesday Noon-Hour Series

Kathleen Rudolph, flute; Eric Wilson, violoncello; Frederick Schipizky, contrabass; John Rudolph, percussion. Music Recital Hall at 12:30pm. Admission: \$2 at-the-door. Call 228-3113.

Microbiology Seminar Series



Plant Phenylpropanoid Genes And Metabolites: Stress And Developmental Regulation. Dr. Carl Douglas, Botany, UBC. Wesbrook 201 from 12:30-1:30pm. Call 228-6648.

Forestry Seminar

Environmental Ethics And New Forestry. Mr. Richard L. Dalon, Deputy Minister, BC Department of Environment. MacMillan 166 from 12:30-1:30pm. Admission free. Call 228-2507.

Physiology/Zoology Seminar

Role Of Substance P In The Medication Or Modulation Of Nociceptive Information At The Spinal Level. Dr. Ruth Cridland, Physiology, UBC. IRC #3 at 3:30pm. Call 228-4224.

Geography Colloquium

African Conservation And The Confused Ideology Of Sustainable Development. Dr. Bill Adams, Geography, Cambridge U. Geography 201 at 3:30pm. Call 228-3268.

Christianity/World Conflict Discussion

The Gulf War And The Sustainability Debate. Dr. Olav Slaymaker, Head, Geography, UBC. Buchanan D306 at 4:30pm. Call 224-1410/3722.

Health Sciences

The Medical Research Council Of Canada's University-Industry Program. Dr. Isabelle Schmid, Industrial Scientific Officer, University-Industry Program, MRC of Canada. IRC #4: 12:30pm; Woodward and BC Children's Hospital: 5pm. Call 822-2577.

THURSDAY, MAR. 21

Thursday Botanical Garden Tours



Introduction To The UBC Botanical Garden. Tour leaders are Friends of the Garden. Meet at entrance to David C. Lam Asian Garden at 10:30am. Free with admission. Call 228-4208.

Physics Colloquium

Parity Violation In Nuclear Physics. Shelly Page, Physics, U. of Manitoba. Hennings 201 at 4pm. Call 228-3853.

University Singers

Eric Hannan, director. Music Recital Hall at 12:30pm. Free admission. Call 228-3113.

Pharmacology Seminar

Allopurinol And Myocardial Infarction. Dr. David V. Godin, Pharmacology/Therapeutics, Medicine, UBC. IRC #1 from 11:30-12:30pm. Call 228-2575.

Obstetrics/Gynaecology Seminar

Fluctuations In Bioactivities Of Gonadotropin Preparations. Dr. Bettina Zharadka, Clinical Fellow, OB/GYN, UBC. Grace Hospital 2N35 from 1:30-2:30pm. Call 875-2334.

Institute Of Health Promotion Research Seminar



Health Promotion Research And The Aging Population. Dr. Gloria Gutman, Director, Gerontology Research Center, Simon Fraser U. James Mather Annex #1 at 3:30pm. Call 228-2258.

Biotechnology Laboratory Seminar

Separation Of Protein Mixtures By Extraction: Elucidation And Quantification Of The Physico-Chemical Properties Governing Bioseparation Systems. Dr. Charles A. Haynes, Chemical Engineering, U. of California, Berkeley. IRC #3 at 4pm. Call Dr. Michael Smith at 228-4838.

Faculty Development Program



Assembling Your Teaching Portfolio For Tenure/Promotion Committees. Assemble all support materials for department heads for the purpose of tenure/promotion committees. Don Knowles, Psychological Foundations in Education, U. of Victoria. BioSciences 2449 from 3:30-5pm. Call 222-5243.

Psychology Colloquium

Depression In The Family Context: Social, Cognitive And Stress Predictors Of Children's Risk. Dr. Constance Hammen, UCLA. Kenny 2510 at 4pm. Call 228-3005.

FRIDAY, MAR. 22

UBC Contemporary Players



Stephen Chatman/Geoffrey Michaels, directors. Admission free. Music Recital Hall at 12:30pm. Call 228-3113.

Germanic Studies Lecture

The King's Love: An Aristocratic Sensibility And Its Social Structure. Stephen Jaeger, Professor, Germanics, U. of Washington. Buchanan Penthouse at 12:30pm. Call 228-5119.

Chemical Engineering Weekly Seminar

Computer Simulation Of Microvascular Exchange In Humans. Ms. S.-L. Xue, Chemical Engineering, UBC. ChemEngineering 206 at 3:30pm. Call 228-3238.

Fisheries/Aquatic Science Seminar

Dynamics And Stability Of Freshwater Predator-Prey Systems. Ed McCauley, U. of Calgary. BioSciences 2361 at 3:30pm. Call 228-4329.

University Singers

Eric Hannan, director. Admission free. Music Recital Hall at 8pm. Call 228-3113.

Classics/Classics Club



The Martyrdom Of Perpetua: An Historical Perspective. Professor Brent Shaw, U. of Lethbridge. Canada's highly regarded Roman Social historian and a former pupil of Professor M.I. Finley. Buchanan Block Penthouse at 8pm. Admission free. Call 228-2889.

Classics Lecture

Robbery, Theft, And Rapine: Brigandage In The Roman World. Professor Brent Shaw, U. of Lethbridge. Buchanan Block A202 at 12:30pm. Call 228-2889.

Paediatrics Grand Rounds

Advances In Hemophilia Care And Diagnosis. Dr. Louis Aledort, Associate Dean, Mt. Sinai School of Medicine, New York, director, New York Regional Hemophilia Program. University Hospital, Shaughnessy Site D308 at 9am. Call 875-2118.

SATURDAY, MAR. 23

Vancouver Institute Lecture



Cecil/Ida Green Visiting Professor. Biotechnology: Blotting/Dotting; Bubbling/Boiling. Arnold Demain, Professor, Industrial Microbiology, Biology, Massachusetts Institute of Technology, Cambridge. Call 228-5675.

UBC Child Study Centre Lectures/Workshops

Teachers/Children As Partners In Planning And Exploring Meaningful Projects. Chava Rubenson, Margot Filipenko, Nancy Duggan, Charlene Bergmann. UBC Child Study Centre Activity Room, 2881 Acadia Rd., from 9:30am-12pm. Registration \$20. at-the-door. For reservations all Tara Fisher at 228-2013.

Ballroom Dancing

29th Annual Gala Ball hosting the BC open amateur ballroom championships and featuring the 1988 world exhibition champions. Vancouver Trade/Convention Centre Exhib. Hall A from 10am-1am. Call 228-3248.

MOA Children's Story Hour



Village Of Round And Square Houses. Ann Frilaloni story presented by Roberta Kremer, Curator Education, Museum of Anthropology, UBC. Children under six must be accompanied by an adult. Free with Museum admission. Gallery 9 at 11am. Call 228-5087.

NOTICES

Fulbright Scholarships Available

Fulbright Awards application packages for Canadian scholars seeking visiting appointments to the U.S. for the 1991/92 academic year, are now available from The UBC Research Services/Industrial Liaison Office. Submissions must be received by the Foundation for Educational Exchange in Ottawa by Feb. 28. Call 228-8595.

Carpool Matching

Send both your home and work addresses and both telephone numbers; your working hours; whether you have a car and if you smoke while driving, to Karen Pope, Dean's Office, Applied Science. When a carpool match is found, the information will be sent to you. Call 228-0870.

UBC Speakers Bureau

Would your group like to know more about topics ranging Medieval and Moorish Spain to Genetic Engineering? More than 500 topics to choose from; most speakers are available free of charge. Call 228-6167, Mon., Tue., Fri., 8:30am-12noon.

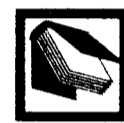
Museum of Anthropology

Exhibition extended: Portraits of BC Native leaders, chiefs, chief counsellors and elders by Kwagwilt photographer David Neel. Now open in the new West Wing: The Koerner Ceramics Gallery. Closed Monday. Call 228-5087.

1991 Medical/Scientific Equipment Trade Show

Medical/scientific equipment suppliers of UBC. Admission free. SUB ballroom from 10-4pm. Call 228-3456.

37th Annual Meeting Of The Society For French Historical Studies



125 papers will be delivered in 48 sessions over a two-day period. Hotel Vancouver Conference Floor March 21-23 from 8am-6pm. Registration: \$50, students: \$12. Call 228-6480/2561.

Executive Programmes

One/two-day business seminars. March 10-23 series includes: Self-Managing Work Teams, \$775. Networking PCs, \$895. Executive Information Systems, \$395. Grievance Handling, \$695. Marketing Management/Non-Marketing Managers, \$550. Dealing with Troubled Employees, \$495. Call 224-8400.

English Language Institute

Professional Development Series for Language Teacher. March/April workshops: Culture in the Second Language Class; Music in the Language Class; Current Events and the Language Class. Tuesday evenings from 7-9pm. Call 222-5208.

Reading Writing/Study Skills Centre

More courses starting early March: Writing Business Letters/Memos for Results; Media Interview Techniques; Robert's Rules of Order—Demystified; The Artful Business of Freelance Writing; ECT Mini-Workshops. Call 228-5245.

Programmes In Comparative Literature

Travel Discourse and the Pacific Rim. Speakers from Depts. of: English, French, Anthropology/Sociology, Asian Studies, History, Fine Arts at UBC, SFU, UVIC, U. of Alberta, U. of Calgary. March 22, SFU Harbor Centre Labatt Hall at 7pm; March 23, Asian Centre Auditorium at UBC from 9am-6pm. Call 228-5157.

Psychology Step-Families Study



Married couples who have at least one child from a previous union living with them, are invited to participate in a study of stress and coping in step-families. Call Jennifer Campbell at 228-3805.

Adult Child Separation/Divorce Study

Volunteers needed. The study will explore how mothers cope with their adult child's separation/divorce. Participants will be required to anonymously complete a mailed questionnaire. Call Allison Krause, Counselling Psychology, at 946-7803.

Sports Medicine Study



Volunteers, female, age 18-35 needed to participate in study on Exercise and the Menstrual Cycle. Fit, healthy, having normal menstrual cycles and not currently on oral contraceptives. Physiological testing provided. Allan McGavin Sports Med. Centre, John Owen Pavilion, UBC. Call Dr. Connie Lebrun 228-4045 or 980-6355.

School of Nursing Study

Volunteers needed for study of couples/family adjustment to a breast cancer diagnosis. Women and partners. Involves interviews/response to questionnaire. Call Dr. Ann Hilton at 228-7498.

School of Nursing Study



Couples are needed who are both in paid employment (over 20 hrs/wk.) and have at least one child under eighteen months of age. Involves filling out a questionnaire twice (10 minutes each time). Call Wendy Hall at 228-7447.

Psychiatry Depression Study

Participants needed for research study using new antidepressant medication. Depression sufferers, 18-65 years. Call Doug Keller at 228-7318.

Psychiatry Personality Questionnaire Study

Volunteers needed to complete two 90-minute sessions. Stipend, \$20. Call Janice at 228-7895/7057.

Counselling Psychology Retirement Preparation

Women concerned about planning their retirement needed for an 8-week retirement preparation seminar. Call Sara Cornish at 228-5345.

Diabetic Clinical Study



Diabetics who have painful neuropathy affecting the legs needed to volunteer for 14-week trial of an investigational new drug. Call Dr. Donald Studney, Medicine, University Hospital, UBC Site at 228-7142.

Daily Rhythms Study

Volunteers needed to keep a daily journal (average 5 min. daily) for 4 months, noting patterns in physical/social experiences. Call Jessica McFarlane at 228-5121.

Psychiatry PMS Study

University Hospital, Shaughnessy site. Volunteers needed for a study of an investigational medication to treat Pre Menstrual Syndrome. Call Dr. D. Carter at 228-7318.

Hypertension in Pregnancy Study

Pregnant women, concerned about their blood pressure, are invited to participate. The study compares relaxation training with standard medical treatment (own physician). Call Dr. Wolfgang Linden at 228-4156.

Post Polio Study



Persons with polio needed for functional assessment and possible training programs. Call Elizabeth Dean, Ph.D., School of Rehabilitation Medicine, 228-7392.

Multiple Sclerosis Study

Persons with mild to moderately severe MS needed for study on exercise responses. Call Elizabeth Dean, Ph.D., School of Rehab. Medicine, 228-7392.

Exercise In Asthma Study

Volunteers with exercise-induced asthma needed for 2-part study (30 min. each). No medications or injections. Call Dr. Phil Robinson at Pulmonary Research laboratory, St. Paul's Hospital at 682-2344, extension 2259.

Asthma Research Study

Volunteers 12-70 years with mild to moderate asthma needed to participate in 16 week research project involving "pulmicort" a commonly used inhaled steroid taken once daily. Call Brian Anderson at University Hospital, UBC Site at 228-7719 between 9am-1pm.

Memory For Places

Study on memory for places (shopping mall) requires volunteers age 65 years and older for 1.5 hour. Please call Bob Uttl, Psychology, UBC at 228-2140.

Continued on page 6

Tough challenges ahead for education

By ABE HEFTER

The Corporate-Higher Education Forum (C-HEF) has called for increased co-operation at the elementary and secondary school levels to meet Canada's education challenges for the future.

C-HEF, a private organization made up of leaders of Canada's business and university communities, recently released an advisory report which features three principal recommendations. The report, entitled "To Be Our Best: Learning For The Future," calls for the creation of common educational goals across the country and ways to monitor progress. It also recommends that teachers be fully prepared to meet their teaching responsibilities in a climate of rapid technological and social change. And it advocates the creation of public awareness of the importance of learning in an information society, while building support for educators.

UBC President David Strangway, a member of C-HEF's board of directors, said the forum is dedicated to promoting understanding and cooperation between Canada's academic and business communities.

"In recent years, technology has had an accelerating impact on society and the workplace," said Strangway.

"Every aspect of human endeavor has been affected. The forum is dedicated to examining the challenges facing education, research and development brought on by this unremitting pace of change."

C-HEF President John Dinsmore said the aim of the advisory report is to inform, to encourage and to promote a catalyst for change.

The report suggests ways in which the business sector and the academic community can each supply their practical experience and expertise to support those who best know the learning process — professional educators, said Dinsmore.

A major initiative that is forthcoming is the Third International Mathematics and Science Study. The international coordinating centre for the study will be located at UBC and directed by Professor David Robitaille, head of the Mathematics and Science Education Department.

"Forty countries are expected to take part in this study to compare what is happening in elementary and secondary school mathematics and science around the world," said Robitaille. "C-HEF is interested in Canada's competitive stance in the world economy and education is viewed as an important component in that stance."



Perry Leslie and research assistants take ski-plane to remote areas for their study on Native children.

Hearing loss problem evident among Native children: study

By CHARLES KER

Studies of Native children in Canada's north show an alarming number suffer from hearing loss.

But it's the effects of the problem and how they might be remedied which is the focus of a UBC study currently under way.

"Many non-Native researchers have studied Indian populations before," said UBC Professor Perry Leslie. "However, they just arrived, started their project and left without giving the local group a whole lot of information. We'd like to provide some answers."

In July, Leslie and Doug Willms, both professors in UBC's Faculty of Education, started a two-year study of children in the Carrier-Sekani Tribal Council in northern B.C. Funded by a \$138,000-grant from the Social Sciences and Humanities Research Council, the project will examine the effects of hearing loss on student education.

The professors suspect that as much as 30 per cent of the council's student population in Kindergarten to Grade 12 may suffer from some form of hearing impairment. This percentage would be close to double that of non-Native students suffering from hearing impairment in other parts of Canada.

"Just knowing about the problem isn't enough," said Leslie. "We've got to find out how big a deterrent the impairment is in a student's ability to perform, and then provide appropriate service."

Leslie said most cases will involve middle-ear infections often brought on by colds caused by extreme temperature change. The infection often results in mild to moderate hearing loss of up to 60 decibels.

Leslie cautioned that even mild hearing impairment can lead to significant trouble later in a child's development. If the impairment isn't treated, Leslie said the problem may worsen and become cyclical.

"The problem is not easily diagnosed because the hearing loss comes and goes on a regular basis," said Leslie. "Teachers start thinking students are inattentive or have behavioral problems, when really there is a physical explanation. They simply can't hear what's being taught during periods of infection."

Leslie first recognized the extent of the problem in 1986 while supervising student teachers at a school for the deaf, in another province. Even though half of the student population at the

school was Native, there were no provisions made in the curriculum for cultural differences.

"It seemed unfortunate that these Native students had to leave their homes and move to a residential school many miles away," said Leslie. "That's when I decided to study students in their home environments."

Leslie's first task in the study will be to test the hearing of 1,100 students. This includes screening approximately

metres and interviewed close to 700 students. Earlier this month, he made a fourth attempt at flying into Fort Ware, located 400 kilometres north of Prince George. Bad weather forced the small, eight-passenger plane to turn back on three other occasions.

Once the screening is completed in mid-March, a comparison will be done on a random sample of 150 hearing and 150 hearing-impaired Native students. Differences between the two

groups in their academic achievement will be related to the extent of hearing loss and the delays in diagnosis, medical attention and special education

services. In addition, revised methods of testing the intelligence of Native students will also be investigated.

Leslie said the study could have far-reaching implications if hearing impairment in the Carrier-Sekani population proves greater than in non-Native populations. Given the current push for more Native self-government, Leslie said the study could lead to a national study of the medical and educational services for Native people in northern communities.

Calendar

continued from page 5

March 10 –
March 23

Study on Memory

Old wine; old memories. To study whether some memories improve with age (like some wine) we need volunteers 60 years of age and older for 1.5 hours. Please call Paul Schmidt/Gloria Lam at 228-2140.

Herpes Research Studies

Participants needed for treatment studies of shingles (herpes zoster) and first herpes simplex infections with new antiviral agents. Also ongoing study for males 18-45 years with recurrent herpes simplex. Dr. Stephen Sacks, Sponsoring Physician. Call the Herpes clinic at 228-7565 or leave your name/number at 687-7711, page 2887.

High Blood Pressure Study

Volunteers, 18-70 years with mild to moderate hypertension (treated or untreated), needed before March 31. Call Nancy Ruedy/Dr. J. Wright at 228-7134.

Gastrointestinal Study

Volunteers required for pre-clinical trials of a new gastrointestinal ultrasound contrast agent. Volunteers (18-30 years) in good health with no history of ulcers or other gastrointestinal ailments. Call Dr. Colin Tilcock, Radiology, University Hospital, UBC Site at 228-3717.

Statistical Consulting and Research Laboratory

SCARL is operated by the Department of Statistics to provide statistical advice to faculty and graduate students working on research problems. Forms for appointments available in 210. Ponderosa Annex C-210. Call 228-4037.

Surplus Equipment Recycling Facility

All surplus items. Every Wednesday, 12-3pm. Task Force Bldg., 2352 Health Sciences Mall. Call 228-2813.

Sexual Harassment Office

Two advisors are available to discuss questions and concerns on the subject. They are prepared to help any member of the UBC community who

is being sexually harassed to find a satisfactory resolution. Call Margaretha Hoek or Jon Shapiro at 228-6353.

Hamlet by William Shakespeare

Directed by Gordon McCall from March 6-16, holdover March 21-23. Tickets: Students/Seniors \$7; Adults \$10. Reservations recommended. Call 228-2678.

Volunteering

To find an interesting and challenging volunteer job, get in touch with Volunteer Connections, Student Counselling and Resources Centre, Brock 200. Call 228-3811.

Narcotics Anonymous Meetings

Every Tuesday (including holidays) from 12:30-2pm, University Hospital, UBC Site, Room 311 (through Lab Medicine from Main Entrance). Call 873-1018 (24-hour Help Line).

Duplicate Bridge

Informal game. All welcome. Admission \$2 per person (includes coffee/snacks). Faculty Club every Wednesday at 7pm. Call 228-4865.

Fitness Appraisal

Physical Education and Recreation through the John M. Buchanan Fitness and Research Centre, administers a physical fitness assessment program. Students \$25, others \$30. Call 228-4356.

Neville Scarfe Children's Garden

Located west of the Education Building. Free admission. Open year round. Families interested in planting, weeding or watering the garden, call Gary Pennington at 228-6386 or Jo-Anne Naslund at 434-1081.

Botanical Garden/Nitobe Garden

March 17-31, 10am-5pm daily. Free admission. Call 228-3928.

AMS & UBC present the

'91 **SCIENTIFIC EQUIPMENT** trade show

March 20 & 21, 1991
Wednesday & Thursday
10:00 AM - 5:00 PM

Student Union Building,
University of B.C.
6138 SUB Boulevard



Don't miss this opportunity to view the latest equipment from UBC's suppliers.



Important hormone for treatment of osteoporosis not approved in Canada

By CONNIE FILLETTI

A hormone discovered by a physiologist at UBC, widely used throughout Europe and Japan for the treatment of osteoporosis and other painful bone diseases, has yet to be approved in Canada.

"It's a typical Canadian attitude not to believe that anything good can come out of Canadian endeavor," said Dr. Harold Copp, professor emeritus of physiology, who discovered calcitonin in 1961.

"Canada is backward in its approach to the treatment of osteoporosis. We really aren't doing much about it when positive things can be done to reduce the incidence and prevent fractures."

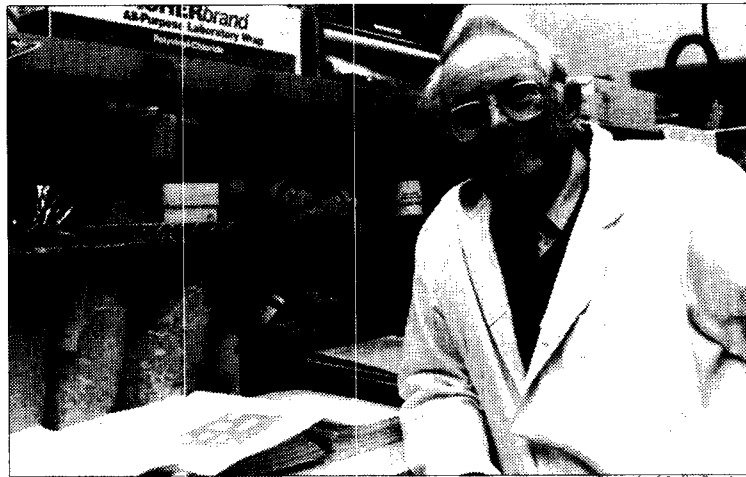
A non-addictive pain killer, 30 times more powerful than morphine, calcitonin regulates the tone of calcium in the blood and suppresses bone loss. As a hormonal therapy, calcitonin ranks second to insulin.

"It has been estimated that osteopo-

rosis costs the Canadian health care system close to a billion dollars a year, in addition to the untold suffering it causes our senior citizens," said Copp.

He added that osteoporosis affects one-in-four women over 50 and leads to hip fractures with a 20-per-cent mortality rate within six months. Incapacitation requiring extended care occurs in about 40 per cent of those who survive.

In general use in Europe since 1975, calcitonin was approved by the U.S. Food and Drug Administration a decade later. It is now one of the most widely used therapeutic agents for treating osteoporosis and



Dr. Harold Copp of UBC discovered calcitonin in 1961.

Photo by Media Services

other bone diseases. It is also being used to relieve pain in terminal cancer patients.

But Canada is one of a few countries in the Western world which has not yet approved the hormone for the treatment of osteoporosis. Canadian sales of calcitonin are less than 0.5 per

cent of those in Italy or Japan, while world sales in 1990 approached \$1 billion U.S.

While injectable calcitonin has been marketed in Canada under the trade name Calcimar since 1976, it is only used for the treatment of Paget's Disease—a skeletal disease of the elderly with chronic inflammation of bones—and hypercalcemia due to cancer and other metabolic complications.

Copp said calcitonin is a remarkably safe therapeutic agent, with occasional minor side effects such as flushing and nausea. However, both are substantially reduced if the hormone is taken in a nasal spray form available in

Europe since 1986.

But Perrin Beatty, minister of National Health and Welfare, said the intra-nasal solution of calcitonin is still considered to be an "investigational drug."

In a recent letter to Copp, Beatty also stated that, to date, no manufacturer has filed an acceptable submission for the marketing of an intra-nasal calcitonin product in the treatment of osteoporosis.

The international pharmaceutical company Rhone-Poulenc Rorer, which acquired the manufacturing rights to calcitonin five years ago, is currently preparing a submission to the Health Protection Branch for approval of calcitonin.

An international symposium—Calcitonin Past, Present and Future, A Celebration of the 30th Anniversary of Its Discovery at UBC—will be held on campus Aug. 29 and 30, 1991. It will be attended by leading scientists in the field of osteoporosis worldwide.

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Study links UIC to distortions in US/Canada employment figures

By ABE HEFTER

As Canadians struggle to hang on to their jobs during these tough economic times, the Department of Economics is shedding new light on an employment trend that emerged following the last recession.

Economics Professors Craig Riddell, of UBC, and David Card, of Princeton, recently completed "A Comparative Analysis of Unemployment in Canada and the United States." The study was undertaken to help understand the levels of higher unemployment experienced in Canada during the 1980s. The results could have significant implications for Canada's unemployment insurance scheme.

From 1953 through 1982, unemployment rates in Canada and the U.S. were very similar. Prior to the 1982-83 downturn, the unemployment rate in each country stood at around 7.5 per cent. When the recession hit, the U.S. rate increased to 9.5 per cent, while the rate in Canada skyrocketed to 12 per cent.

Since then, the Canadian unemployment rate has remained two to three percentage points above that in the U.S. Economists have struggled to determine why the gap emerged and why it still exists. Although Riddell and Card say questions still remain to be answered, one key observation has already emerged from their research.

"The amount of time Canadians and Americans spend working in a year is remarkably similar — whether one looks at youths, adults, females or males," said Riddell. "However, Canadians who are not employed are more likely to be looking for work, while non-employed Americans are less likely to report that they are seeking work."

The result: higher unemployment figures in Canada.

Riddell said the difference between the unemployment insurance systems in Canada and the U.S. may be behind this phenomenon.

"There's a greater economic incentive in Canada to remain attached to the labor force," Riddell said. "Although being available for work is a requirement for receiving unemployment insurance benefits in both countries, Canadians are able to receive benefits after 10 to 14 weeks of work. On the other hand, during the 1980s,

the differences between the two countries, in the area of low-level work experience (people who work less than 26 weeks per year), account for two-thirds of the unemployment gap.

"Critics of Canada's unemployment insurance program will probably find our results appealing," said Riddell.

"However, it is important to recognize that our findings clearly indicate that Canada's relatively higher unemployment during the 1980s is not associ-

American have generally required at least 20 weeks of work experience to receive benefits."

Riddell said there are a number of differences between the two unemployment insurance systems — differences which became more pronounced during the 1980s.

Riddell and Card found that, on average, an unemployed worker in Canada is more than three times as likely to receive unemployment insurance benefits than an unemployed American. They also discovered that

ated with lower levels of employment than in the U.S., as is often assumed to be the case. Rather, the gap is associated with the different ways Canadians and Americans spend their non-working time."

Riddell said they also found that the burden of unemployment is more evenly distributed in Canada than in the U.S.

"This may also be associated with the differences in the two countries' unemployment insurance programs," he added.

"On average, an unemployed worker in Canada is more than 3 times as likely to receive unemployment insurance benefits than an unemployed American."

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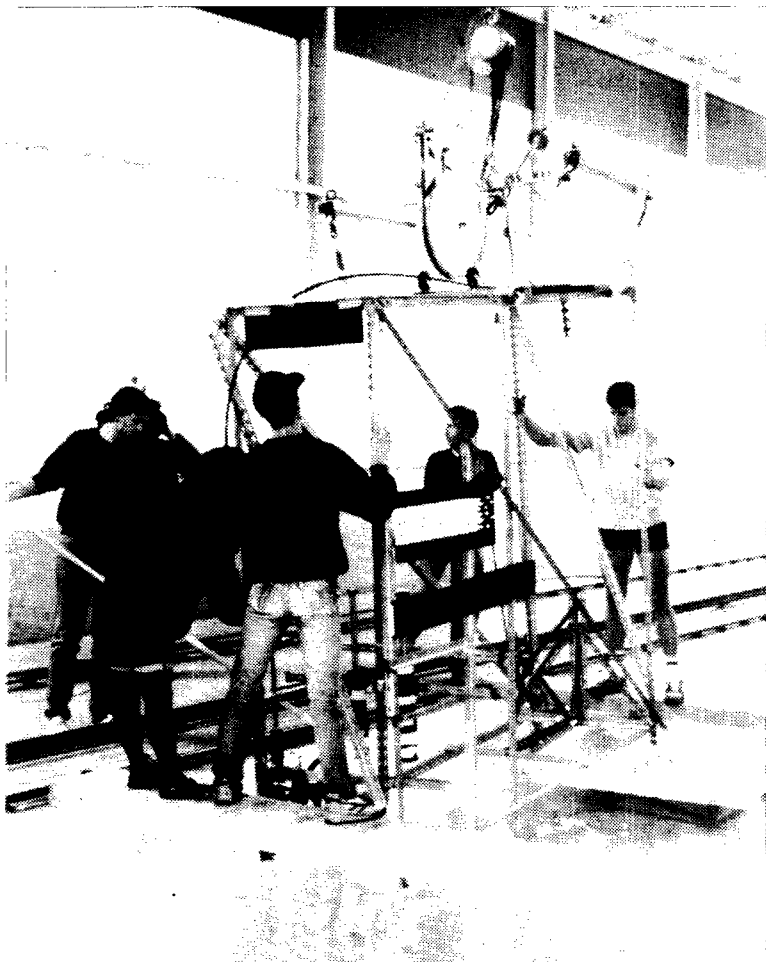
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CHECK IT OUT!

UBC students holding their breath over submarine race



Members of SUBC team lower early version of submarine into test pool.

By GAVIN WILSON

Tell most students you're going to the submarine races and you'll get a nudge and a wink. But to Geoffrey Liggins and Ronan Oger, it's no joke.

The pair of third-year Mechanical Engineering students are leading the only Canadian university entry in the second Human Powered Submarine Race at Riviera Beach, Florida, June 15-22.

SUBC, as they've dubbed the project, will join 35 other competitors at the event, sponsored by the Florida Atlantic University Engineering Department and the H.A. Perry

Foundation.

The design guidelines require that the sub's compartment be flooded, with the two-person crew wearing scuba gear. Power must be provided by one diver, the steering and navigation by the other.

"It's not like the type of submarine you see in movies like *The Abyss*," said Oger.

The UBC sub will be more than four metres long and about one metre in diameter. The mold for the hull, which will be cast in a fiberglass and vinyl ester composite, is being made at International Submarine Research in

Port Coquitlam.

During the competition, the submarine must stay upright in 10 metres of water and be highly manoeuvrable over a one-kilometre oval track. The sub is also tested for top speed over a 100-metre straightaway. Entries are also evaluated on engineering innovation, cost effectiveness, appearance and crew participation.

Because the crew is working underwater, the design must also meet tough safety standards.

"If we have any difficulties with the sub, the canopy and safety harnesses restraining the crew must release so they can escape within 30 seconds," said Oger.

The UBC team hopes to gain an edge on the competition with an innovative hull design and a novel propulsion system that begins with a crew member pedaling a stationary bike.

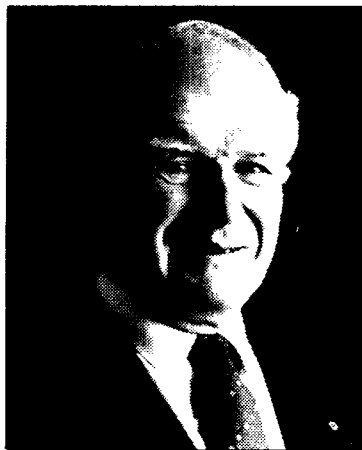
The UBC team faces some stiff competition. Vying for the \$5,000 first prize are teams from across the U.S., Canada and Britain, representing universities and companies such as MIT, Lougheed, Cal Tech and winners of the first race, the U.S. Naval Academy of Annapolis, Maryland.

About 20 students from Mechanical Engineering, Civil Engineering, Engineering Physics, Commerce and Arts make up the UBC team, whose faculty advisor is Mechanical Engineering Professor Sander Calisal.

Sponsors include the Department of Mechanical Engineering, International Submarine Engineering, Divers' World and Kerrisdale Lumber. B.C. Research has provided facilities for some of the pre-competition testing, but SUBC is still seeking additional support to cover the costs of sending an eight-student crew to Florida.

Oger and Liggins estimate they will need to raise more than \$20,000 to allow them to take part in the competition. For more information contact the SUBC project at 228-2648.

Business bullish on research



Mustard

By GAVIN WILSON

It was a scene that may have surprised some academics, but not the outspoken president of the Canadian Institute for Advanced Research, Fraser Mustard.

At a recent reception, senior business executives crowded around a noted cosmologist, peppering him with questions about the origins of the universe.

To Mustard, it was further proof that the corporate world is interested in scientific research in pursuit of excellence, not just the bottom line.

"The private sector is not a homo-

geneous entity at all, it's a mosaic of people," he said.

Since he helped found the institute in 1982, Mustard has been devoted to boosting research and development in Canada by bringing together government, business and universities.

The CIAR is a private sector institute supported by a partnership of the private sector, provincial governments and the government of Canada.

"As a private sector initiative, the institute has the freedom to move in the directions we sense are right, rather than being caught up in the bureaucratic process," said Mustard.

The fellowship that supports the research of UBC cosmologist William Unruh, for example, is supported by Peter Allen, the head of Lac Minerals.

"He recognizes the high quality of the program, and the fellow, and takes pride in supporting their achievements," explains Mustard.

UBC receives more CIAR funding and support than any other university in Canada. Faculty members participate in each of the institute's five established programs, conducting high-

level research into superconductors, cosmology, population health, evolutionary biology and artificial intelligence and robotics.

Sixteen of the institute's 86 Canadian members are based at UBC, including the heads of two programs (Unruh of cosmology and Robert Evans of population health). They receive more than \$1 million in CIAR

funding each year.

UBC's connection to the CIAR has been further strengthened by the appointment of Patricia Baird, professor of medical genetics, as one of its three vice-presidents. Baird is a member of the institute's research council and of the population health program.

"Patricia has a strong commitment to and understanding of what our institute is," said Mustard, noting her strong network of contacts throughout the private sector, government and academic community.

Mustard, who is constantly crisscrossing the country spreading the gospel of advanced research, was in B.C. recently to deliver the Imperial Oil Lecture at the University of

UBC phone numbers change effective March 4

Effective March 4, 1991, UBC is adopting a new prefix for most of its on campus telephone numbers. It will be "822" (or "UBC" if you use the letters on your telephone's dialer.)

If your current number is in one of the following blocks:

222 - 8600 to 8699

- 8900 to 8999

224 - 8100 to 8599

228 - 2000 to 7999

your new number for off campus callers will be 822-xxxx (or UBC-xxxx) or for on campus callers 2-xxxx.

If your current number is not in one of the above blocks, your telephone number will remain as it is.

If you currently use a PBX local, your four digit local number will be from one of the following blocks:

0000 to 1099

1200 to 1999

8700 to 8899

and it will be reached from on campus by dialing 3-xxxx.

Conversion of UBC's telephones to five-digit local dialing and to the new exchange 822 was completed on March 4. Calls from one campus phone to another are now made by dialing five digits, with the first number being either 2 or 3 and the last four digits being the current number. Phone numbers that can be dialed directly from off campus begin with 2. Those numbers that cannot be dialed from off campus begin with 3. The old exchange numbers will continue to work until October, 1991 and either the old number or 822, when dialed from off campus, will reach the correct telephone.

Symposium features 16th century maps

By CHARLES KER

Ancient footbinding in China and contemporary tourism in Japan will be just two of the topics discussed at a travel writing symposium held at the Asian Centre later this month.

Thirteen scholars from UBC, Simon Fraser University and the universities of Victoria, Calgary and Alberta will be on hand for the March 23 gathering called Travel Discourse and the Pacific Rim.

"Travel literature is a field that has long been considered marginal even though it has been an important medium used for hundreds of years," said Eva-Marie Kroller, chair of UBC's Comparative Literature Program. "It was devoured by the public because it was full of strange and exotic tales at a time when travel was very difficult."

Ian MacLaren, of the University of Alberta, will open the talks March 22 at SFU's Harbour Centre with a discussion of travel literature and the evolution of the author.

Tale tellers and their topics at the Asian Centre will include: Iain Higgins, UBC English, medieval Europeans on the Far East; Millie Creighton, UBC Sociology, the marketing of tradition and nostalgia in contemporary Japanese tourism, Luc Nagtegaal; UBC

Asian Research Institute, Indonesia through foreign eyes; Tama Copithorne, with SFU's David Lam Centre for International Communication, a sociological analysis of the Japanese practice of gift-giving as it relates to travel; and Killam Doctoral Fellow Philip Holden of the UBC English Department will talk about British novelists' depictions of East and Southeast Asia.

Kroller organized the event with help from Allan Smith of UBC's History Department and Robert Kramer and Joshua Mostow from the Asian Studies Department. The Special Collections Division of the library will be contributing a display of Japanese travel maps and guide books dating back to 1600 at the Asian Centre during the symposium.

Special Collections recently received a \$40,000 grant from the Social Sciences and Humanities Research Council to bolster its travel writing section. The money will go towards purchasing 18th and 19th century travel accounts of voyages by westerners to countries of the Pacific Rim.

Kroller added that a graduate course in travel writing will be offered next year as part of UBC's English program.

Victoria.

His topic was Canada's uncertain future. It's a theme that is close to his heart.

Mustard believes that Canada is on the road to economic ruin.

"By my standards, we've been in a relative economic decline since 1975. All we've done is alleviate the effects of it by running up a massive national debt."

The only way out from under this ever-increasing debt load, he believes,

is dramatically increased levels of research and development, and the subsequent conversion of our economy from a resource base to one that is knowledge-based and innovation-driven.

"We have the worst industrial research and development base in the developed world," Mustard said. "With our resource base, we haven't had to think about how to create wealth with knowledge. But unless we do, we'll just go further into debt."