

UBC REPORTS

Volume 43, Number 4

February 20, 1997



Gavin Wilson photo

First-year engineering student Van Ly was among the more than 15,000 UBC faculty, staff and students immunized against measles in a recent campus campaign which extended into a second week. More than 125 cases of measles have been reported in B.C. since the first case was identified among students at Simon Fraser University in January.

Shots top 15,000 in measles onslaught

The first measles case at UBC was reported late last week, even as Vancouver Health Board staff sought to control the spread of the disease through a massive UBC vaccination campaign Feb. 11-18.

More than 15,000 UBC students, faculty and staff were vaccinated as campus departments pooled their efforts with Vancouver Health Board staff to organize the vaccination blitz.

"The campus really pulled together in a very short time for what was a huge undertaking," said Byron Hender, executive co-ordinator in the Office of the Vice-President, Student and Academic Services. "Individuals from a range of departments across campus worked hard and fast. It was a real team effort."

Students and faculty volunteers in UBC's School of Nursing were welcomed by public health nurses as they turned

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Library latest legacy of generous spirit

When family, friends and admirers of the late Walter C. Koerner gather at the Museum of Anthropology on March 9 for a memorial service celebrating his life, they will be surrounded by the immense goodwill he bestowed on UBC for more than four decades.

The museum, permanent home of the Koerner Ceramics Gallery, is just one of many examples on campus of Koerner's belief in the university as a compelling investment.

The memorial service for Koerner, who died in July 1995, is one of many around the opening of the most recent of Koerner's legacies, the Walter C. Koerner Library, in early March.

In addition to donating his treasury of ceramics collected over an 80-year span, it was Koerner's gift of Northwest Coast Native art — a collection assembled over many years with his wife Marianne — which initiated the construction of the world-renowned museum.

Subsequent donations included Inuit, Latin American and East Asian materials, as well as the commissioning of Bill Reid's showpiece carving, *Raven and the First Men*.

"Walter Koerner's generosity has enabled all of us who pass through this university to broaden our horizons and seek new ones," says UBC President David Strangway.

"His vision of the individual as a

lifelong learner was supported time and again by his philanthropy, which also provided us with a common ground of understanding and a sense of universal literacy."

Koerner was born in northern Moravia, now part of the Czech Republic, in 1898. He emigrated to Canada in 1938 where he continued the family's centuries-old tradition of working in the forest industry.



Koerner

With his brothers, Koerner founded the Alaska Pine and Cellulose Company, pioneering the use of western hemlock as a lumber product. He retired in 1972 to begin a full-time commitment to public service and philanthropy.

Koerner's association with UBC began in 1955 with a gift supporting the university's Slavonic Studies library collection. A year later he helped found the Friends of the University Library, and in 1958 made a gift that enabled the Main Library to undertake a much needed expansion.

He initiated the UBC Health Sciences Centre project, whose core pavilion is named for him, and chaired the centre from 1971 to 1980.

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See page 3 for Koerner Library opening schedule of events.

Tuition fees to rise for int'l graduate students

Starting next fall, tuition fees for international graduate students will rise to two-and-a-half times that paid by domestic graduate students at UBC.

The Board of Governors voted in favour of the increase at its meeting Feb. 6 despite a Senate motion to have the increase rescinded. The Senate had passed its motion with a vote of 30-25.

"The board decided that it would be in the best interests of all faculties and their students to carry on with the proposed fee changes to help offset provincial grant reductions," said Vice-President, Academic Daniel Birch. He added that government grants are expected to be cut by \$1.6 million next year.

The new tuition fees will be applied to international graduate students admitted on or after Sept. 1 of this year. Tuition will rise to \$7,087, of which \$1,603 is earmarked for student aid. Birch said that most, if not all, faculties will commit an additional \$1,603, ensuring that at least two-thirds of the increase goes to

financial aid for international graduate students.

The existing tuition policy would have resulted in an annual tuition of \$2,835 (\$185 for student aid), a figure significantly below the national average of \$8,800.

UBC currently charges the lowest tuition for international graduate students among Canada's 13 universities with medical schools and a broad range of PhD programs.

Relative to what other universities charge their international graduate students, UBC's new tuition fees will rank it eighth among similar institutions. Ontario's McMaster University tops the list with average tuition fees close to \$17,000.

Birch refused to speculate on what impact the tuition increase might have on enrolment but emphasized that UBC remains committed to recruiting the best international students.

UBC currently has an enrolment of 1,250 international graduate students spread among all faculties.

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Letters

APEC '97 no honour for this university

Editor:

I read with interest your cover story, Leaders come to UBC for APEC '97 (*UBC Reports*, Jan. 23, 1997). I wonder if someone could define for me what "human resources development" is? Does that include treating Filipino women like a commodity, trading them as domestic workers to the highest bidding country? Does it mean incarcerating workers in South Korea for trying to form a union, and then passing repressive labour legislation in the middle of the night? Is murdering the population of East Timor a developmental process?

Perhaps the UBC administration thinks it an honour for our president to host this summit which includes people who are responsible for some of the most repressive living and working conditions in the world. Or perhaps it is an effort to encourage investment in the university. Either way the decision ought to be reconsidered.

Jo Hinchcliffe
Women's Studies Centre

Koerner

Continued from Page 1

A former chair of the Board of Governors, Koerner's wide-ranging support and service to UBC was recognized with an honorary degree in 1973. In 1994, the university announced that its new humanities and social science research library would be named for Walter C. Koerner.

His support for library collections, medicine and other programs at UBC, as well as his generosity toward many other charitable causes in the community, continued throughout Koerner's life.

Members of the campus community are invited to attend the March 9 memorial service and the reception which follows in the foyer of the Koerner Ceramics Gallery. The service begins at 3:30 p.m.

Please fax acceptances to UBC's Ceremonies and Events Office at 822-9060.

Measles

Continued from Page 1

the measles vaccination campaign into an opportunity to gain practical experience in a unique situation.

Assoc. Prof. Elaine Carty said more than 30 students and faculty volunteered their services to help the public health nurses and the Vancouver Health Board deliver measles vaccine.

"The health board and the public health nurses got in touch with us as soon as they heard we were willing to help. They've been great about including people from the school in the campaign," Carty said. "We just shifted some of the clinical experiences students would be having this week to assisting with vaccinations."

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, 310 - 6251 Cecil Green Park Road, Vancouver B.C., V6T 1Z1, by fax to 822-2684 or by e-mail to janet.ansell@ubc.ca.

Child Study Centre's closure shows lack of accountability

Editor:

Students, educators and children from all over British Columbia have benefited from the unprecedented innovations that the Child Study Centre has brought to the educators of young children and to developmentally appropriate curriculum.

We are concerned that the decision to close the centre is short-sighted and has been made precipitously. Teachers, educators, staff and community members were not given the opportunity to challenge the

dean's reasons for the closure or to explore alternative solutions. We feel that the Faculty of Education has failed to be accountable to or serve fair process to the teachers, faculty, parents and children who will be affected by their decision.

We ask the Faculty of Education to revoke its decision to close this centre for excellence for the study of young children, and assert its commitment to early childhood education by supporting this valuable resource.

Hea Sook Kim
Vancouver

Centre's closure judged 'harsh'

Editor:

I am writing to protest the proposed closure of the Child Study Centre. I am surprised and dismayed to think that this excellent observation opportunity is considered superfluous by the Faculty of Education. From its simple beginnings many years ago, to its present optimum design, it has served many institutions as well as UBC faculties. At what point was it realized that its mandate was not being met? Certainly, from a logical and business-like approach, the university must have made periodic evaluations of the viability of the facility, its staff and director. Only with ongoing communication can evaluations reflect needed change. It seems that no warning signals were received by the staff or the many families whose children were benefitting from a beginning education.

Today, the casual observer thinks that day care and preschool are synonymous. There are many similarities, but only in that the programs are ideally geared to the needs of the children in attendance, and to the length of time spent in the centre. Both options are necessary in our society and one cannot adequately replace the other. An eight-hour day of child care is often the only choice for two working parents. The two-and-a-half-hour preschool experience is the choice of many other families. Through the years, the Child Study Centre has fulfilled its societal mandate, has it not? It seems harsh, indeed, to now sever that choice from the menu of both participating families, and from the learners in your own faculty.

Marilyn Campbell
Vancouver



THE UNIVERSITY OF BRITISH COLUMBIA

Public Meeting

for the campus community

on the proposed Liu Centre for International Studies

Thursday, Feb. 27, 1997, 12:30-2 p.m.
Mathematics 100, 1984 Mathematics Rd.

Edwin Jackson

Truth I have no trouble with,
its facts I get all screwed up. Farley Mowat

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4524 West 11th Avenue, phone & drop in,
or by appointment, your place.

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THE UNIVERSITY OF BRITISH COLUMBIA

Centre for Human Settlements Director

A search is underway within the university for candidates for the position of Director of the Centre for Human Settlements (CHS) commencing January 1, 1998. The Centre, a legacy of the 1976 UN Conference on Human Settlements (Habitat), is internationally renowned for its research, training and capacity building. It is a research unit of UBC's School of Community and Regional Planning within the Faculty of Graduate Studies. The Centre's approach to research is multidisciplinary and community-oriented. Specific activities currently relate to: housing, feminist action research, rural-urban linkages, urban growth and change, policies for sustainable development, disaster preparedness, metropolitan governance, community development, and participatory planning. Faculty research associates are from a number of different departments at UBC. Many of these activities involve partnerships with overseas institutes and faculty and research on all five continents.

Applicants should have a senior faculty appointment within the university, significant experience in developing and managing major projects, and the ability to provide leadership for the Centre's diverse research and training programs.

For more information please contact: Prof. William Rees, Director, School of Community and Regional Planning, Room 433, Lasserre Bldg., Zone 2, to whom also applications or nominations should be sent no later than April 1, 1997.

The University of British Columbia welcomes all qualified applicants, especially women, aboriginal people, visible minorities and persons with disabilities.

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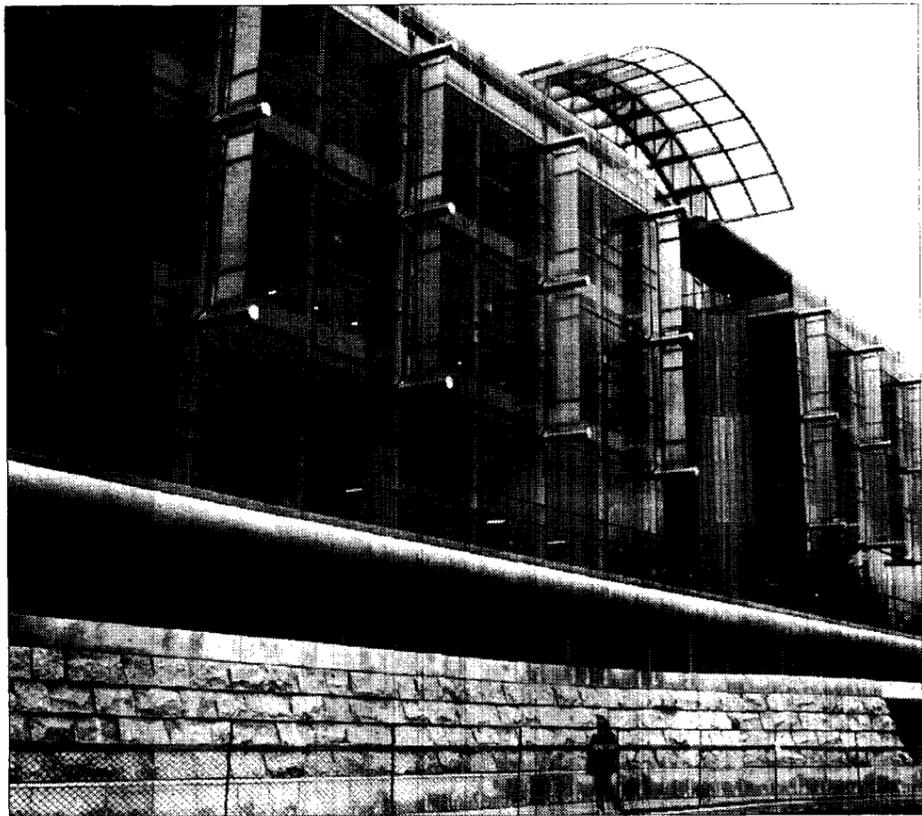
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Alastair Bird photo

Designed by award-winning Aitken Wreglesworth Associates in collaboration with famed Canadian architect Arthur Erickson, the Walter C. Koerner Library is home to more than 800,000 books, an electronic text and multimedia centre, and study spaces wired to the campus network.

Parents give to help build library collection

When UBC student callers contact Parents on behalf of the annual Parents Appeal to support the UBC Library Collection Enrichment Fund, they often find that parents are keen to talk to them about student life at UBC.

Parents Appeal Co-ordinator Jennifer Druce said the students serve as a valuable resource for parents.

"The students spend a lot of time chatting with the parents and answering questions about campus life and the university in general," she said.

"Many of the parents have a host of questions about residence life, classes, the library and what SUB (the Student Union Building) is. There's no question our student callers give parents insight

into the university that they wouldn't necessarily get from their own kids. The contact seems to help build their sense of belonging to the university community as well."

Last year, parents of UBC students contacted by student callers gave the Library a much appreciated boost in the form of more than \$50,000 in donations to the enrichment fund. The fund helps the library buy new books.

Since the Parents Appeal, part of UBC's Annual Fund campaign, began in 1993, donors to the program have more than doubled to 549 last year. The total raised for UBC's Library has reached more than \$150,000, including \$50,000 raised so far this year.

Koerner celebration schedule of events

Six days of events open to the public will be held to celebrate the opening of the new Walter C. Koerner Library on March 10. For more information visit the Koerner Celebration web site at <http://www.library.ubc.ca/koerner/celebration/>

Sunday, March 9

- 3:30-5:00 p.m.: Memorial service for Walter Koerner at the Museum of Anthropology. RSVP to UBC Ceremonies Office via fax to 822-9060.

Monday, March 10

- 3:30-4:15 p.m.: Walter C. Koerner Library Opening Ceremony.

Tuesday, March 11

- 12:00-1:20 p.m.: The Role of the Great Library in the Life of the University Symposium. Speakers include UBC President David Strangway; Prof.

John Gilbert, chair, Senate Library Committee; and Shirley Neuman, dean, Faculty of Arts. Performance and readings from selected books in the Walter C. Koerner Humanities and Social Sciences Library by English Dept. Players. Main Library, Ridington Room.

Thursday, March 13

- Library tours begin every half hour: 10:00 a.m.-12 p.m.; 2:00-4:00p.m.

Friday, March 14

- 12:40 p.m.: Koerner Library Run: 5K run, 3K run, and 1K walk.
- Library tours begin every half hour: 10:00 a.m.-12 p.m.; 2:00 - 4:00 p.m.

Saturday, March 15

- Library tours begin every half hour: 10:00 a.m.-12 p.m.; 2:00-4:00 p.m.



Campus works

Student Information System

Flexibility key to new system's benefits

by Stephen Forgacs

Staff writer

The Registrar's Office has embarked on a major redevelopment of the Student Information System (SIS)—a move that will make life easier for the students, faculty, and staff who rely on the system for information and to do their jobs.

The Student Information System manages virtually all information related to UBC's 32,000 students—from admissions, registration, and course scheduling to recording of grades, degree audit and graduation.

Due to the size and complexity of the SIS, the tight timelines for moving off the current mainframe platform, and the extensive consultation approach planned for the project, it is being redeveloped in two phases.

Phase one, scheduled for completion in November, involves migrating the SIS from the current IDMS/MVS operating system to the new technical platform of Oracle and UNIX.

During the next eight months the entire SIS database and the more than 825 programs that make up the current SIS system will be converted and tested in the new environment. Forecross Corporation, a specialist in using automated processes to convert mainframe databases and programs to new environments, is working with the Registrar's Office on the project.

"One of the major limitations of the current system is the lack of flexible access to the data," says Audrey Lindsay, associate registrar, Systems, and UBC project manager on the SIS redevelopment project. "We have a lot of data in the system, but the ability for faculty and administrators to produce ad hoc and management reports is very limited. Once the data is migrated to the Oracle database, extracting data will be a much simpler and more widely available process."

Concurrent with the migration project, Registrar's Office systems staff, with assistance from Sierra Consulting, are evaluating and establishing the development environment for the second phase of the project—the replacement and redevelopment of specific SIS components.

"We are soliciting input from faculty, staff and students as we prepare for the second phase of the project. Our plans for the next eight months include a series of meetings with representatives from all faculties including all levels of SIS users, potential users and students," Lindsay says.

"This includes meetings with all deans and relevant administrative unit department heads; focus sessions with faculty representatives to discuss issues and priorities; business process improvement sessions to streamline procedures and eliminate unnecessary processes or steps; and facilitated design sessions and hands-on sessions with the prototypes of the emerging system."

The second phase of the project will involve everything from simple enhancements to completely redesigned components and new functions. Although changes visible to faculty, staff and students who use the system will appear gradually, Lindsay says that as the development phase progresses the system will be better able to provide support for work done by faculty and staff and easier access to the system for both data entry and retrieval.

One of the major focuses will be secure access to the system via the Internet for students, faculty and staff. This should make it easier for students to register, add and drop courses, check their grades and do other transactions.

The redevelopment of the SIS is one of the projects included in the replacement of the university's major administrative systems. Others underway include the financial, human resources and alumni/development systems.

Facility to continue to provide child care

UBC's Board of Governors has supported a decision by the dean of the Faculty of Education to close the Child Study Centre (CSC) and referred the question about appropriate future use of the facility for early childhood education or day care to the university's administration.

At its Feb. 6 meeting, the board was asked by a delegation representing parents and teachers to reverse the decision made by Faculty of Education Dean Nancy Sheehan in December, following an external review of the CSC.

"In spite of the high quality of its programs, the Child Study Centre is unable to fulfil adequately the three components of its mandate: research, program demonstration and training, and leadership for the early childhood education field," Sheehan said at the time.

About 150 children aged two to five attend preschool and kindergarten programs at the centre, which was established in 1961 and has nine full- and part-time teachers, with assistance from faculty and graduate students.

Parents were informed about the decision to close the centre in December so that they could begin to consider alternatives for September 1997 and teachers were given the notice required under the agreement between the university and the Faculty Association.

At the January meeting of Senate, a notice of motion was put forward asking Senate to affirm its power to establish and disestablish academic units and suggesting that the CSC be considered an academic unit.

The Senate Agenda Committee has determined, pending advice to the contrary, that the closure is not within the

purview of Senate. Senate, however, does have the right to ask for a report on the academic implications of the closure and Sheehan has offered to provide a report at its March 19 meeting.

The building, which was developed for the use of young children, will continue to be used for that purpose and although the exact nature, organization, and administration of such programs has not yet been determined, children's programs will run out of the centre beginning next September.

"These programs will be expected to provide an environment to facilitate child development and education, and to provide a context hospitable to research and the education of university students (conditions which also apply to the 11 day-care centres operated under Child Care Services)," said President David Strangway in a letter to campus.

"Children currently enrolled in the Child Study Centre will be given priority to any of these programs for which they are eligible."

Staff in Housing and Conferences' Child Care Services have been asked to prepare a proposal for use of the facility beginning next September.

"They will be notifying all interested parties that they are open to advice on the best use of the building for such purposes as kindergarten, pre-school and day care for young children, and on the most effective way of providing these services," Strangway added. "They have offered to meet with concerned parents and teachers to discuss potential programs, and to plan for the transition. A meeting will be scheduled for this purpose in the very near future."

A progress report will be provided to the Board of Governors on March 20.

Calendar

February 23 through March 8

Sunday, Feb. 23

Spirit of Tibet Days
Tibetan Food, Dancers, And Arts And Crafts. MOA, 12-4pm. Call 822-5087.

Green College Fine Arts Speaker Series
The World Of Art Conservation. Cecilia Kelly, Conservator, Okanart Conservation and the Harrison Galleries. Green College, 5:30pm. Call 822-6067.

Green College Performing Arts Group
Piano Recital. Eiko Ogawa. MFA student. Green College, 8pm. Call 822-6067.

Monday, Feb. 24

World History Speaker Series Lecture
Environment And Science. Prof. Mark Elvin, Australian National U. Buchanan A-202, 12:30-1:30pm. Call 822-2561.

Mechanical Engineering Seminar
Attitude Control And Guidance Of Spacecraft With Application To Mass Landing. Henryk Fleshner, U of Southern California. CEME 1204, 3:30-4:30pm. Refreshments. Call 822-3904.

Modern European Studies Colloquium Series
Norbert Elias And The European Civilizing Process. Thomas Salumets, Germanic Studies and Comparative Literature. Buchanan penthouse, 3:30-5pm. Call 822-5969.

Biochemistry/Molecular Biology Discussion Group Seminar
Transcriptional Repression Of Drosophila Homeotic Genes. Jeff Simon, U of Minnesota. IRC#4, 3:45pm. Refreshments at 3:30pm. Call 822-2619.

Astronomy Seminar
Hipparcos Results On Cepheids And Miras: Distance Scales And Pulsation Properties. Michael Feast, U of Cape Town. Hennings 318, 4pm. Refreshments at 3:30pm. Call 822-2802.

Zoology Comparative Physiology Seminar
Gene Regulation By Oxygen Concentration And Light Intensity. Tom Beatty, Microbiology. BioSciences 2449, 4:30pm. Refreshments. Call 822-3372.

Resident Speaker Series
It Ain't Easy Being Green. Bill Smith, Resource Management and Environmental Studies. Green College, 5:30pm. Call 822-6067.

Tuesday, Feb. 25

Earth and Ocean Sciences Seminar
The Coast Shear Zone: The Root Of A Late Cretaceous Major Strike-Slip Fault System? Lincoln S. Hollister, Princeton U. Geological Sciences 330-A, 12:30pm. Call 822-3466/822-2267.

Centre for Chinese Research Seminar
Economy, Environment And Science In China Over The Last Thousand Years - An Informal Discussion. Prof. Mark D. Elvin, Australian National U. CK Choi 120, 12:30-2pm. Call 822-2629.

Botany Department Seminar
Ultra-High Resolution Studies From The Laminated Sediments

Of Saanich Inlet: Changes In The Diatom Community Over Time Scales Of Seasons, Years And Centuries. Melissa McQuoid, Centre for Earth and Ocean Research, U of Victoria. BioSciences 2000, 12:30-1:30pm. Call 822-2133.

John F. McCreary Lecture
Narratives In Health Care: How We Practise, Teach, And Do Research. Dr. Jan Marta, Psychiatry, Mount Sinai Hospital; Joint Centre for Bioethics, U of Toronto. IRC#5, 12:30-1:30pm. Call 822-3737.

Animal Science Seminar Series
Are Cows Following The Code? Beef Cattle Behaviour And Habitat Use On A Forested Range Unit. Lavona Liggins, MSc candidate. MacMillan 158, 12:30pm. Refreshments. Call 822-4593.

Lectures in Modern Chemistry
Iron Triad M(CO)₄ (Eta-2-Alkyne) Complexes: Versatile Building Blocks In Organometallic Synthesis. Prof. Josef Takats, U of Alberta. Chemistry B-250 (south wing), 1pm. Refreshments from 12:40pm. Call 822-3266.

Earth and Ocean Sciences - Oceanography Seminar
Ocean Colour - Satellites And Buoys. Jim Gower, Institute of Ocean Sciences. BioSciences 1465, 3:30pm. Call 822-1465.

Statistics Seminar
An Information Criterion For Likelihood Selection. Ao Yuan, Statistics. CSCI 301, 4-5:30pm. Refreshments. Call 822-0570.

World History Speaker Series Seminar
Crombie's Approach To The History Of Science As Applied To China. Prof. Mark Elvin, Australian National U. Buchanan Tower 1206-07, 4:30-6pm. Reception to follow in Buchanan Penthouse. Call 822-2561.

Distinguished Lecture - IEEE Industry Applications Society
Holonic Systems For Intelligent Manufacturing. Prof. William Gruver, SFU. CEME 2204, 5-6pm. Refreshments at 4:45pm. Call 822-6291.

Green College Speaker Series
Voice, Mode, And Time: Narrative Structurings And Interdisciplinarity. Jan Marta, Psychiatry, U of Toronto. Green College, 5:30pm. Reception in Graham House 4:45-5:30pm. Call 822-6067.

The Interdisciplinary Seminar
Interdisciplinary Attitudes To Science. John Gilbert, Health Sciences Co-ordinator. Don Brooks, Pathology. David Measday, Physics. Green College, 5pm. Call 822-6067.

Tibetan Film Screenings
Compassion In Exile. MOA, 7-9pm. Call 822-5087.

Continuing Studies Lecture
The Revolutionary Century: The Mexican, Russian, Chinese and Cuban Revolutions. Various Speakers. Lasserre 107, 7:30-9pm. \$45, seniors \$35. Call 822-1450.

Wednesday, Feb. 26

Surgery Grand Rounds Lecture
Treatment Of Vascular Intimal Hyperplasia - From Bench To Bedside. Dr. Joseph Mills, Vascular Surgery, U of Arizona. GF Strong Auditorium, 7am. Call 875-4136.

Faculty Financial Planning Lecture Series
Tax Aspects Of Investing. David

Christian, Thorsteinssons, Barristers and Solicitors. Angus 104, 12:30-1:20pm. Call 822-1433.

Noon Hour Concert
William Davis, bassoon, June Davis, organ and piano. Music Recital Hall, 12:30pm. \$3 at the door. Call 822-5574.

Poetry Reading
Poetry Reading By Governor-General's Award Nominee Crispin Elsted. Buchanan Penthouse, 12:30-1:20pm. Call 822-5122.

Centre for Japanese Research Seminar
Gendered Meaning In Sumo And Shinto: A New Look At Hidden Symbolism In The Traditions And Popular Culture Of Japan. Louisa Cameron, Cultural Anthropology, Columbia U. CK Choi 120, 12:30-2pm. Call 822-2629.

Ecology and Centre for Biodiversity Research Seminar
1997 Chitty Lecture. Sex And The Single Squirrel: Sexual Differences In Behavioural And Physiological Ecology Of Richardson's Ground Squirrels. Gail Michener, U of Lethbridge. Family/Nutritional Sciences 60, 4:30pm. Refreshments. Hut B-8 at 4:10pm. Call 822-3957.

Respiratory Research Seminar
Effects Of Cytokines On Responses Of Cultured Human Airway Smooth Muscle To Bronchodilator Agents. Dr. Stephanie Shore, Harvard School of Public Health. Vancouver Hospital/HSC, 2775 Heather St., 3rd floor conference room, 5-6pm. Call 875-5653.

19th Century Studies / French
The Queen Of Decadence: Salomé's Many Heads. Prof. Charles Bernheimer, U of Pennsylvania and author. Green College, 8pm. Call 822-6067.

Thursday, Feb. 27

Counselling Psychology Workshop
Manage Your Stress. Patrick Psaila, MEd candidate; Ellen Connell, MA candidate. Scarfe 1118, 10am-12pm. Continues March 6, 13, 20. To register, call 822-0140.

Law and Society Lunch-Time Seminar
The Sociologist As Lawyer: The Case Of Max Weber. Joan Brockman, Criminology, SFU. Green College, 12pm. Call 822-6067.

Human Kinetics Seminar
Adaptive Responses To Weight Training At Different Stages Of Life. Michael Houston, Human Kinetics. War Memorial Gym 100, 12:30-1:30pm. Refreshments. Call 822-3913.

Anthropology and Sociology Colloquium Series
Mind/Body: The Psyche In Society. Michael Pollex, Jim Overboe, Doug Aoki, Rob McLeod. ANSO 205, 12:30-1:30pm. Call 822-2878.

Earth and Ocean Sciences Seminar
Is The Inner Core Spinning Faster Than The Mantle? Kean Creager, U of Washington. GeoSciences 330-A, 12:30pm. Call 822-3466/822-2267.

Philosophy Colloquium
Killing, Deprivation, And The Morality Of Abortion. Doran Smolkin. Buchanan D-202, 1-2:30pm. Call 822-3292.

Wood Science Seminar
Applications Of Advanced Manufacturing Technologies In Forest Products. Jim McBeth, Director, NRC. MacLeod 214, 1:30pm. Call 822-1833.

Environmental Engineering Seminar
Vicki Husband, Sierra Club. CEME 1215, 3:30-4:30pm. Refreshments. Call 822-2637.

Invited Speaker Seminar Series
Lattice-Based Cryptography. Cynthia Dwork, IBM Almaden Research Centre. CICS/CS 208, 4-5:30pm. Refreshments. Call 822-0557.

Kaspar Naegele Lecture in Sociology
The Coasts Of Bohemia: Prague As A Vantage Point On European Modernity. Prof. Derek Sayer, U of Alberta. MOA theatre gallery, 4pm. Call 822-2878.

Issues in Post-Secondary Education
New Realities, New Directions, New Institutions - The Changing Higher Education System In British Columbia. John Dennison, Educational Studies. Green College, 4:30pm. Call 822-6067.

Genetics Graduate Program Seminar
Genetic Analysis Of Quantitative Traits In Natural Populations. Kermit Ritland, Forest Sciences. Wesbrook 201, 4:30pm. Refreshments at 4:15pm. Call 822-8764.

Friday, Feb. 28

Health Care and Epidemiology Rounds
The Epidemiology Of Skiing And Skate Board Injuries. Dr. Andrew McNab, Pediatrics. Mather 253, 9-10am. Call 822-2772.

Pediatrics Grand Rounds
What's New In Pediatric Rheumatology? Dr. Peter Malleson, Pediatrics. GF Strong Auditorium, 9am. Call 875-2307.

Pharmaceutical Sciences Seminar
The Regulation And Modulation Of Intraocular pH. Dr. John Church, Anatomy. Cunningham 160, 12:30-1:30pm. Call 822-4645.

Occupational Hygiene Program Seminar
Pilot Exposure Assessment For An Epidemiological Study Of Aluminum Potroom Asthma. Marty Cohen, Industrial Hygiene Research Manager, and Mike Cotey, Industrial Hygienist. Vancouver Hospital/HSC. Koerner Pavilion G-279, 12:30-1:30pm. Call 822-9595.

Centre for Japanese Research Seminar
A Transition Or Two Traditions: Basho/Buson And Shiga/Akutagawa. Prof. Hitoshi Oshima, Fukuoka U. Asian Centre 604, 1-2:30pm. Call 822-2629.

Kaspar Naegele Seminar in Sociology
What Might A Post-Structuralist History Look Like? Prof. Derek Sayer, Sociology, U of Alberta. ANSO 205, 2pm. Call 822-6683/822-2878.

Political Science Seminar
Engineering Transitions? Reflections On Peacebuilding And Political Science. Rex Brynen, McGill U. Grad Studies 201, 3-4:30pm. Call 822-5456.

Mathematics Colloquium
Another Look At Hoefsmits Representations. Arun Ram, Princeton U. Mathematics 104, 3:30pm. Refreshments at 3:15pm in Math Annex, room 1115. Call 822-2666.

Chemical Engineering Seminar
Enzymatic Hydrolysis Of Cellulose In Aqueous And Non-Aqueous Environment. Ana May, grad student. ChemEng 206, 3:30pm. Call 822-3238.

Theoretical Chemistry Seminar
Time Dependent Selective Solvation. T. Day, Chemistry. Chemistry D-402 (centre block), 4pm. Call 822-3266.

Saturday, Mar. 1

Continuing Studies Forum
Politics, Ethics And The Canadian Media. Michael Harcourt, Angus Reid, Stan Persky and Patricia Graham, panelists. Curtis 101, 9am-4pm. Call 822-1450.

Pianist in Recital
Vadim Monastyrsky, Jerusalem Academy of Music. Music Recital Hall, 7pm. \$25 adults. \$20 students/seniors. Call 325-0797.

The Vancouver Institute Lecture
How To Get Rid Of Nuclear Weapons. Dr. Joseph Rotblat, 1995 Nobel Peace Prize Recipient. IRC#2, 8:15pm. Call 822-4636.

Sunday, Mar. 2

Spirit of Tibet Days
Tibetan Food, Dancers, And Arts And Crafts. MOA, 12-4pm. Call 822-5087.

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, 310-6251 Cecil Green Park Road, Vancouver B.C., V6T 1Z1. Phone: 822-3131. Fax: 822-2684. An electronic form is available on the UBC Reports Web page at <http://www.ubc.ca> under 'News.' Please limit to 35 words. Submissions for the Calendar's Notices section may be limited due to space.

Deadline for the March 6 issue of UBC Reports — which covers the period March 9 to March 22 — is noon, February 25.

Calendar

February 23 through March 8

Green College Performing Arts Group
Vivaldi's The Four Seasons. UBC String Ensemble. Green College, 2pm. Call 822-6067.

Monday, Mar. 3

Continuing Education Engineering and Architecture
How To Read Blueprints (In Cantonese). David Sze. CEME 1202, 9am-5pm. \$100. Lunch not included. Call 822-3347.

Mechanical Engineering Seminar
The Automobile And The Environment. Robert Evans. Mechanical Engineering, CEME 1204, 3:30-4:30pm. Refreshments. Call 822-3904.

Biochemistry/Molecular Biology Discussion Group Seminar
Denitrification By Copper Proteins; How Does Nitrite Bind To Nitrite Reductase? Michael Murphy. Computer Science, IRC#4, 3:45pm. Refreshments at 3:30pm. Call 822-2792.

Zoology Seminar
Evolutionary Implications Of Mitochondrial DNA Introgression Assessed By Physiological Performance. Helene Glemet, U Québec. BioSciences 2449, 4:30pm. Refreshments. Call 822-9152.

Resident Speaker Series Planning For The Big One: The Philosophy Of Earthquake Resistant Design Of Buildings. David Moses. Civil Engineering. Green College, 5:30pm. Call 822-6067.

Continuing Studies Lecture
The Ancient Maya And Their Ancestors. Various Speakers. Lasserre 107, 7:30-9pm. \$35, seniors \$30. Call 822-1450.

Tuesday, Mar. 4

Counselling Psychology Workshop
Speak Up! A Public Speaking Workshop. Shannon Goepel, MEd candidate. Continues March 11, 18, 25. Scarfe 1118, 10am-noon. Call 261-1873.

Centre for Chinese Research Seminar
The New Rich In China: The Party State And Capitalist Revolution. David Goodman, U of Technology and Science, Sydney. CK Choi 120, 12:30-2pm. Call 822-2629.

Animal Science Seminar
Novel Applications Of NIRS In Predicting The Nutrient Quality Of Western Canadian Cereal Grains. Mary-Lou Swift, post doctoral student. MacMillan 158, 12:30. Refreshments. Call 822-4593.

Botany Seminar
The North Pacific Arc And Moss Distribution. W.B. Schofield. Botany. BioSciences 2000, 12:30-1:30pm. Call 822-2133.

Lectures In Modern Chemistry
Surface Chemistry And Catalysis On The Nanometer Scale. Prof. Gabor A. Somorjai. Chemistry, U of California—Berkeley. Chemistry B-250 (south wing), 1pm. Refreshments from 12:40pm. Call 822-3266.

Earth and Ocean Sciences Oceanography Seminar
Into The New Millennium - International Marine Science And The Global Ocean Ecosystem Dynam-

ics Program. Ian Perry, Pacific Biological Station. BioSciences 1465, 3:30pm. Call 822-1814.

Statistics Seminar
Likelihood Ratio Tests In Mixtures And The Volumes Of Tubes. Prof. Bruce Lindsay, Statistics, Penn State U. CSCU 301, 4-5:30pm. Refreshments. Call 822-0570.

Medical Genetics Seminar
Towards A Mouse Model For Huntington's Disease. Graeme Hodgson, post doctoral student. Phenotypic Variability In NF1. Jacek Szudec, grad student. Wesbrook 201, 4:30-5:30pm. Refreshments at 4pm. Call 822-5312.

Green College Speaker Series
Violence In Art: The Case Of Hagiotography. Sheila Delany, English, SFU. Green College, 5:30pm. Reception in Graham House, 4:45-5:30pm. Call 822-6067.

Tibetan Film Screenings
Missing In Tibet And Another Selection. MOA, 6:30-9pm. Call 822-5087.

Wednesday, Mar. 5

Noon Hour Concert
Gordon Cherry, trombone; John Rudolph, percussion. Music Recital Hall, 12:30pm. \$3 at the door. Call 822-5574.

Opera Panel Discussion
Puccini's Turandot. Maria Eng, English. Nicholas Selman, Vancouver Opera. Floyd St. Clair, French. Buchanan penthouse, 12:30-1:30pm. Call 822-4060.

Centre for Japanese Research Seminar
Globalization Process Of Japanese Automobile Production: Some Evidence From Southern Ontario. Kenkichi Nagao, Geography, Osaka City University. CK Choi 120, 12:30-2pm. Call 822-2629.

Faculty Financial Planning Lecture
Uses Of Trusts In Estate Planning. Sandra Ballance, Douglas Symes & Brissenden. Angus 104, 12:30-1:20pm. Call 822-1433.

Modern European Studies Colloquium Series
How Democratic Are European Post-Communist Countries. Alan Siaroff, Political Science. Buchanan Penthouse, 3:30-5pm. Call 822-5969.

Ecology and Centre for Biodiversity Research Seminar
Why More Productivity Results In More Species: A Test Of Theory Using Treehole Communities. Diane Srivastava, post doctoral student. Family/Nutritional Sciences 60, 4:30pm. Refreshments Hut B-8, 4:10pm. Call 822-3957.

The Interdisciplinary Seminar
Hermeneutics And Knowledge Today. James C. Risser, Philosophy. Seattle U. Green College, 5pm. Call 822-6067.

Respiratory Research Seminar
Redistribution Of Pulmonary Blood Flow Under Increased Gravity. Dr. Michael Hlastala, Physiology and Biophysics, U of Washington. Vancouver Hospital/HSC, 2775 Heather St., 3rd floor conference room, 5-6pm. Call 875-5653.

Burgess-Lane Memorial Lecture/Forestry Research Evening
Plant Fibers In Composite Materials: A View Of Technical Challenges And Opportunities From A

Heretic. James Bolton. Director, BioComposites Centre, U of Wales. MacMillan 166, 5:30pm. Refreshments. Call 822-1833.

The Great University Library: Discover A World Of Knowledge
Scholarly Communication in the Next Millennium Conference. Speakers from UBC, SFU, AUCC, CARL and others. SFU Harbour Centre. See <http://www.sfu.ca/scom/> for registration information, call 822-3310.

Thursday, Mar. 6

Science First! Lecture Series
Statistics: A Guide To The Unknown. Prof. Emeritus Ned Glick, Statistics and Health Care/Epidemiology. IRC#6, 12:30-1:30pm. Refreshments. Discussion to follow. Call 822-5552.

Pharmaceutical Sciences Seminar
Corticosteroids In Meningitis. Zahra Esmail, post doctoral student. Cunningham 160, 12:30-1:30pm. Call 822-4645.

Earth and Ocean Sciences Seminar
Magma, Metals And Mineral Exploration. John Thompson, Earth and Ocean Sciences. GeoSciences 330-A, 12:30pm. Call 822-3466/822-2267.

Anthropology and Sociology Colloquium Series
How To Blow One's Nose: Norbert Elias And The Paradox Of Postmodernism. Thomas Salumets. ANSO 205, 12:30-1:30pm. Call 822-2878.

Pharmaceutical Sciences Seminar
Dexrazone: A Cardioprotective Agent For Anthracycline Chemotherapy. Dana Cole, post doctoral student. Cunningham 160, 1-1:30pm. Call 822-4645.

Wood Science Seminar
Designing A Future Out Of Wood: Industrial Design In The Wood Industry. Tom Becher, Associate Dean, Emily Carr School of Design. MacLeod 214, 1:30pm. Call 822-1833.

Medieval and Renaissance Studies
Considering The Place Between Violence And Its Representation. Marvin Cohodas, Fine Arts. Daniela Hempen, Germanic Studies. Sheila Delany, English, SFU. Green College, 3:30pm. Call 822-6067.

Next calendar deadline:
noon, Feb. 25

Notices

Continuing Education in the Health Sciences Conference
Breast Cancer: Myths and Realities. March 7 and 8, 1987. Waterfront Centre Hotel, Vancouver, BC. Registration 7:30am. Presentation 8:30am. Registration before Feb. 17 is \$150. After Feb. 17 is \$175. One day registration available. For further information call (604)822-2626. Fax: (604)822-4835.

10th Annual B.C. HIV/AIDS Conference
HIV In Canada Today. Learning From Each Other. October 26-28, 1997. At the Westin Bayshore Hotel, 1601 West Georgia Street, Vancouver. Designed as a skills

Environmental Engineering Seminar
High Temperature Biological Removal Of Air Pollutants, Organics And Odours From Bleach Kraft Mill Condensates. Pierre Bérubé, post doctoral candidate. CEME 1215, 3:30-4:30pm. Refreshments. Call 822-2637.

Genetics Graduate Program Seminar
The Bisecting N-Acetylglucosamine Of N-Glycans Appears Dispensable For Mouse Development And Reproduction. John Priatel, post doctoral candidate. Wesbrook 201, 4:30pm. Refreshments at 4:15pm. Call 822-8764.

Workshop for Women
Women's Life Stories. Rosalind Guest, Sally Halliday, Claudia Psaila. Continues March 13, 20, 27. Womens Resources Centre, 1144 Robson St., 7-9pm. To register call 822-0140.

Green College Speaker Series
Audrey Thomas, writer. Green College, 8pm. Call 822-6067.

Friday, Mar. 7

Pediatrics Grand Rounds
The Emerging Role Of Epilepsy Surgery In Children. Dr. Mary Connolly, Neurology, BCCH. Dr. John Kestle, Neurosurgery, BCCH. GF Strong Auditorium, 8:30am. Call 875-2307.

Health Care and Epidemiology Rounds
Molecular Epidemiology Of TB. Dr. Mark Fitzgerald, Consultant, Provincial TB Control Program. Mather 253, 9-10am. Call 822-2772.

Random Acts of Poetry
Open Mike Poetry Session. Bookstore, 12:30-1:30pm. Poets may pre-register by calling 822-2665.

Graduate Student Conference
Histories, Herstories, Heterologies: Cultural Narratives In A (Post) Modern Present. Green College, 1-9pm. Continues March 8, 9am-5pm and March 9, 9am-2pm. \$10 entrance fee payable on March 7 at Anthropology and Sociology. Call 822-6067.

Women and Spirituality Dialogue '97
Every Woman's Journey: Called And Gifted. Vancouver School of Theology, 6000 Iona Drive, 5-9:30pm. Continues March 8, 8am-4pm. For registration and fees call 822-9815. Fax 822-9212.

Occupational Hygiene Program Seminar
Reproductive Effects Of Exposure To Chlorophenates: Male Fertility

building format for individuals from a variety of backgrounds concerned about HIV and AIDS. Sponsored by Continuing Education in the Health Sciences. UBC. For further information call (604) 822-4965 or fax (604) 822-4835 or e-mail: elaine@cehs.ubc.ca.

India And South Asia Research Colloquium
The South Asia Colloquium of the Pacific Northwest (SACPAN) takes place at the Faculty Club, University of Washington, Seattle. Reception evening of Feb. 28. Colloquium March 1, 9am. For information call 822-5734. Fax: 822-8937. E-mail: lpreston@unixg.ubc.ca.

And Childhood Cancer. Helen Heacock, post doctoral student. Vancouver Hospital/HSC. Koerner Pavilion G-279, 12:30-1:30pm. Call 822-9595.

Weekly Seminar
Thermodynamics Of Na-Al-Silicate Formation In The Recovery Cycle Of Kraft Pulp Mills. Hyeon Park, grad student. ChemEng 206, 3:30pm. Call 822-3238.

Theoretical Chemistry Seminar
Equal Reaction Rates For Different Pathways For Recombination Reactions. S. Alavi, Chemistry. Chemistry D-402 (centre block), 4pm. Call 822-3266.

International Women's Day Special Event
Celebrate International Womens Day. Sheila Norgate, Vancouver Visual Artist. Social Work main floor, 4-6pm. Refreshments. Tickets \$5. Call 822-9171.

The Cross Cultural Literary Studies In Asia Group Conference

The World My Mother Gave Me: Asian Women's Intergenerational Perspectives And Perceptions In Literature. Himani Banerji, York U; Joshua Mostow; Tineke Hellwig; Catherine Swatek; Keum Sook Kang, CK Choi 120, 5-9pm. Reception and refreshments 5-6pm. Dinner and movie 6-9pm. \$15 for dinner. Continues March 8, 9am-4pm. Students, \$8. Faculty/others, \$15. Lunch included. Call 822-2629.

Saturday, Mar. 8

20th Annual Physics Olympics
An All Day Event For High School Teams Involving Hands-On Physics. Spectators Are Welcome. Organized by Physics and Curriculum Studies (Mathematics & Science Education). Hennings and Hebb, 9am-4pm. Call 822-6286.

Continuing Studies Forum
Better Times: Exploring The Idea Of A Shorter Work Week. Bruce O'Hara and Tom Walker. Curtis 101, 10am-2pm. \$15. Bring lunch. Call 822-1450.

Vancouver Institute Lecture
The Origin Of Blood Cells: A Matter Of Life And Death. Dr. Connie Eaves, Deputy Director, Terry Fox Laboratory, Vancouver. IRC#2, 8:15pm. Call 822-4636.

Children's Burn Awareness Program
Photographic exhibition in the SUB art gallery. Exhibit hours: Feb. 24 - March 1, Monday-Friday 10am-2pm. Saturday 10am-4pm. For information call 266-7678.

Freedom to Read Week
An Eye-Catching Display Of Banned And Challenged Books - Don't Take Freedom To Read For Granted! Feb. 24- March 8. Bookstore, weekdays, 9am-5pm; Saturday, 10am-5pm. Call 822-2665.

Italian Cultural Festival
School of Music and Old Auditorium at various times. Feb. 24-27. Call 688-0809.

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THE UNIVERSITY OF BRITISH COLUMBIA

ENVIRONMENTAL PROGRAMS 1996 ANNUAL REPORT
Health, Safety and Environment Dept.

Key accomplishments in 1996:

- **External Environmental Management System Review**
- **Identification of Hazardous Material Storage Tanks Which Will Facilitate Monitoring and Management Activities**
- **Earthquake Preparedness Brochure**
- **Draft Protocol for Site Assessment Procedures**
- **Follow Up Pilot Environmental Compliance Audits**
- **Pollution Prevention Workshop Development**
- **Upgrade of Computerized Waste Tracking System**

Environmental Programs consists of environmental compliance, hazardous waste management, and emergency preparedness programs. The group is responsible for developing and implementing environmental controls on campus required for compliance with regulations and policy. Its mandate includes developing and implementing:

- The UBC environmental management systems and reporting structures. This includes regular reporting to the Board of Governors Occupational Health, Safety and Environment Committee, and the UBC community at large.
- Environmental compliance auditing and regulatory liaison.
- Hazardous waste reduction initiatives including solvent recovery and chemical exchange.
- Training and awareness programs.
- The safe collection, storage and disposal of chemical and biohazardous waste from all teaching, research, and operational activities.

Environmental Awareness Initiatives

Substance Assessment Fact Sheets

The Department of Health, Safety and Environment continued in 1996 to produce "Substance Assessment Fact Sheets". These fact sheets contain information summarized from Environment Canada reports and examine the environmental and human health effects of many widely used substances. In 1996, the list of fact sheets included:

- polycyclic aromatic hydrocarbons
- 1,2 dichloroethane
- ozone depleting substances and
- chromium

Environmental Newsletter (Waste Watchers)

Four issues of the environmental newsletter - Waste Watchers were produced and distributed in 1996. Articles included:

- A Waste Minimization Contest (won by Jennifer Kong from the Department of Medicine for the recycling and housing of radioactive orthophosphate)
- Recycled Paper
- Recovery Program Updates
- Re-Use of Construction Waste
- Alternatives for Waste Containing Heavy Metal Ions
- Recycling of Radioactive Cell Labels
- Earthquake Preparation for Laboratory Personnel
- Information on the Internet
- UBC's New Paper Recycling System

- Alternatives to Ethidium Bromide Waste Disposal
- New Biomedical Waste Procedures
- Re-Use of Gel Destain Solutions
- Environmental Initiatives by the UBC Food Group
- Treatment Methods For Oxalic Acid and its Salts
- Pollution Prevention Questionnaire
- Transport of Hazardous Goods

Seminars And Training

During 1996, members of the Environmental Programs group presented course modules on hazardous waste management, minimization, and emergency preparedness. These were presented as part of the Chemical-Safety, Radiation Safety and Bio-Safety courses in addition to various departmental training seminars. The section on hazardous waste management was completely revised and updated.

The Environmental Seminar Series in 1996 had two speakers.

"Reducing Auto-Dependency in Vancouver"

Gavin Davidson, co-director of Better Environmentally Sound Transportation.

"Where on Earth is the Lower Mainland Anyways?"

Dr. William Rees, School of Community and Regional Planning

Informal training and valuable job experience was provided to three work study students and one "Greening the Campus" fourth year undergraduate through several initiatives at the Environmental Services Facility.

Earthquake Information Brochure

During 1996 the Earthquake Information Brochure produced by the Department of Health, Safety & Environment was revised and re-designed. The brochure contains information on

- Ten steps to take at work to prepare for an earthquake
- Steps to take in a laboratory to prepare for an earthquake
- What to do during an earthquake
- What to do after an earthquake
- What happens in an earthquake
- Emergency phone numbers
- Emergency survival kits

These brochures were distributed to departments on campus. Additional copies can be obtained from the department of Health, Safety & Environment.

Pollution Prevention Workshop Development

BC Environment have funded the Environment Youth Team program which provides funding for young people to work on environmental projects. Environmental Programs has sponsored a position to develop a pollution prevention workshop for use at UBC. The majority of the work conducted in 1996 consisted of researching ways to reduce hazardous waste and involved literature searches, Internet searches and interviews with numerous staff. The information is to be collected in a binder format and a 3 hour workshop on pollution prevention is planned for 1997.

Environmental Management System

The Environmental Programs Group contributed to the development of the University Environmental Management

System in several areas in 1996. These included; participating in the External Environmental Management System Review; drafting a Protocol For Site Assessment Procedures on campus and assisting with policy development for Sustainable Development and Chemical Waste Disposal. The Director of Health, Safety and Environment is a member of the steering committee of the Greening of the Campus which operates through the Sustainable Development Research Institute.

External Environmental Management System Review

Deloitte and Touche were contracted by the University to conduct a review of the Environmental Management System at UBC. Since 1993 the University has developed several elements of an Environmental Management System in line with both Canadian and international recognized systems.

The objectives were to:

- review the current UBC Environmental Management System against due diligence and other criteria
- identify areas for improvement over the next three years.

The project was conducted by Deloitte and Touche with assistance from Environmental Programs staff. This group reported to a project Steering Committee consisting of:

- Mr. Dennis Pavlich, Chair (VP Academic & Provost)
- Prof. Jim Atwater (Civil Engineering)
- Mr. Wolfgang Felix (Faculty of Medicine)
- Dr. Wayne Greene (Health, Safety & Environment)
- Mr. Rodger Morris (Campus Planning & Development)
- Mr. Chuck Rooney (Plant Operations)
- Dr. Rick Spratley (Research Services)
- Dr. Iain Taylor (Botany)

The review highlighted many areas where UBC had successfully implemented programs and elements which are associated with internationally recognized systems and suggested areas for improvement and development. These recommendations are being reviewed and an implementation plan developed.

Draft Site Assessment Protocol

In July 1995 the Provincial Government amended the Waste Management Act to include "Criteria For Managing Contaminated Sites In British Columbia". Regulations come into force on April 1, 1997.

In order to comply with the proposed regulations Environmental Programs worked together with:

- Jim Carruthers (Campus Planning & Development)
- Brian Smallridge (Financial Services)
- Mark Betteridge (UBC Real Estate)
- Tony Fogarassy (UBC Legal Counsel)

to draft a protocol for use at the University.

The protocol is designed to ensure that the University consistently meets and exceeds the legislated requirements and minimizes its environmental liabilities. Activities impacted include:

- planning, design and construction phases of all projects
- University property leased to individuals or corporations, including termination or expiration of leases

- property leased by the University
- property purchased or acquired by the University
- property sold or relinquished by the University

The draft document is being presented to the Environmental Programs Advisory Committee for review in early 1997.

Policy Development

Environmental Programs staff assisted in the development of the draft policy on Sustainable Development and in the draft revisions to policy #9 - Chemical Waste Management.

Environmental Services Facility (ESF)

The major focuses of the Facility in 1996 were,

- responding to regulatory requirements affecting the pathological incinerator
- continuing the expansion of programs that reduce the amount of hazardous waste which requires disposal
- upgrading of waste tracking software

The department of Health, Safety and Environment was also subject to a departmental review in 1996. The comments from the review committee concerning waste management issues were as follows.

"The Review Committee is pleased to commend HSE for its forward-looking initiatives in handling special (hazardous) waste streams from the University. The solvent recovery and chemical recycling operations are especially notable. Even though the costs for these operations significantly exceed the cost recoveries, the leadership provided and non-monetary benefits are beneficial to the University at large."

Regulatory Requirements Affecting the Incinerator

All biomedical waste incinerators in the Province were required to comply with a Report endorsed by BC Environment concerning a Biomedical Waste Strategy for the Province.¹

In response to the report UBC,

- characterized biomedical waste streams generated
- forwarded a proposal to the Greater Vancouver Regional District (GVRD)
- set up new procedures to segregate these wastes (see below)
- investigated alternative disposal routes
- contracted Stericycle of BC to dispose of these wastes.

The incinerator again passed the annual compliance emission testing required under the GVRD permit to operate.

Waste Tracking Software

The computerized hazardous waste tracking system which was initially designed and developed in 1994, was upgraded in 1996. The new version drastically reduces the time required to enter data and is more user friendly. Nearly 300 generators of hazardous waste on campus are registered. The system allows wastes to be tracked when they enter the facility and in addition to ensuring regulatory compliance the system allows staff to identify potential wastes which could be reduced, re-used or recovered.

¹ Shared Responsibilities - A British Columbia Biomedical Waste Action Plan. Waste Reduction Commission, April 1994.



THE UNIVERSITY OF BRITISH COLUMBIA

Environmental Programs 1996 Annual Report

Category	UBC	UVic	SFU	Other	Total (Kg)
Pathological	19845	97	1802	3232	24975
Infectious	17592	16		5577	23185
Sharps/Needles	660	481	126	30	1297
De-listed Radioactive	2146		638	638	3422
Segregated Biomedical	499				499
Other	2871	716	700	700	4988
Total	43613	1310	3266	10177	58367

Table 1: Biohazardous Waste Disposal in 1996.

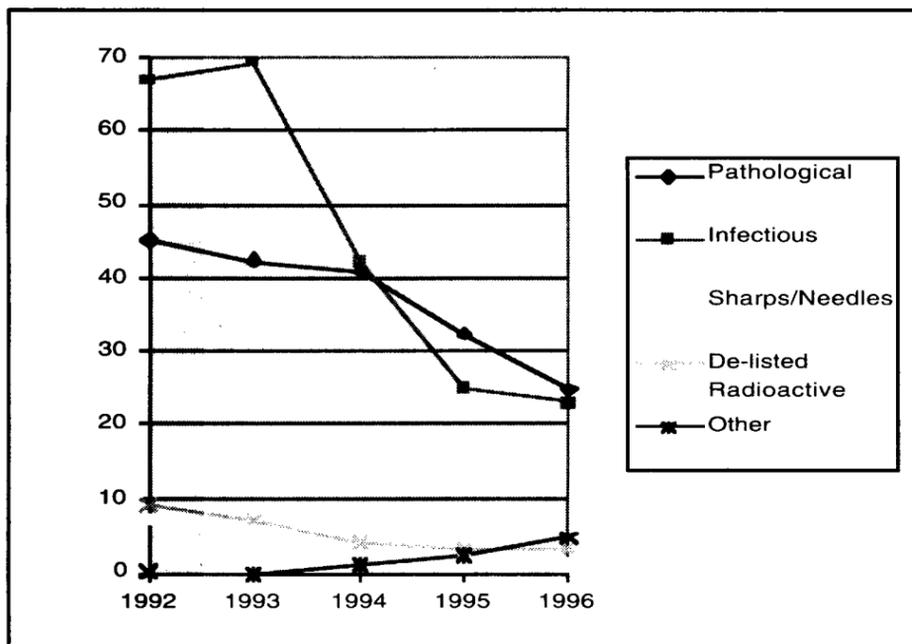


Figure 1: Trend in the amount of Biohazardous Waste processed since 1992.

New Waste Disposal Procedures

In response to regulatory requirements new procedures were implemented for the disposal of:

- human anatomical, human blood and body fluid waste
- primate contaminated waste
- ethidium bromide wastes.

These procedures were distributed to university departments and copies can be obtained from the department of Health, Safety & Environment.

Biohazardous Waste Disposal

The amount of biohazardous waste handled by the Facility in 1996 is shown in table 1. The total amount processed decreased by approximately 10% over 1995 figures. The trend since 1992 in biohazardous waste processed by the incinerator is shown in figure 1. The department receives full cost recovery from non-UBC sources.

The large reduction in volume between 1993 and 1995 is largely due to the removal of waste generated by the University Hospital. The Hospital currently contracts out the disposal of their waste. In addition to this reduction there has been an additional 10% reduction in 1995 and 1996. This reduction is due to the development by Environmental Programs staff of procedures to treat certain portions of the waste stream in alternative ways. An example would include the distribution of treatment and disposal procedures to generators of liquids contaminated with ethidium bromide wastes.

All materials listed below were incinerated on site except for the segregated biomedical waste which was sent to Stericycle of BC for disposal.

Solvent Waste Disposal

The amount of waste solvent received at the Facility in 1996 is shown in table 2. The amount received in 1996 shows a 3% decrease over the 1995 total. This

modest decrease may be due to changes in research projects conducted on campus involving solvents.

Solvent wastes sent for disposal were handled by Laidlaw Environmental Services.

Waste Chemical Neutralization

Specific hazardous wastes are segregated for neutralization at the Facility. These wastes are simple acids/bases and various low toxicity inorganic salts. In 1996, 1,938 L of liquid waste and 118 Kg of solid waste was neutralized. This increase of approximately 18% over 1995, is due to extra emphasis being placed on identifying wastes which can be handled on site. After neutralization, these materials were safely released into the sewer system.

Lab-Packed Chemicals

In 1996, 1,356 Kg of lab-packed chemicals were sent off campus for disposal by the Facility. This increase of approximately 28% over 1995 is due to the consolidation of some waste streams which were being handled individually by a department. This consolidation resulted in overall reduced disposal costs for the University.

These materials were sent to Laidlaw Environmental Services for disposal.

Waste Oil

Three thousand four hundred liters of waste oil, not contaminated with PCB's, was sent off-site to Mohawk Oil for recycling. While this is an increase over 1995 this amount is more typical of normal volumes.

Batteries

Approximately 1.1 tonnes of batteries were sent to Nu Life Industries for recycling in 1996.

Potentially Explosive Materials

No removals of potentially explosive materials were conducted in 1996.

	UBC	Other*	Total
Chlorinated solvent (L)	5625	4368	9993
Non-Chlorinated solvent (L)	15215	1305	16520
Total (L)	20840	5673	26513
Percentage solvent recovered	11%	18%	16%

* Includes off-campus UBC sites as well as St. Paul's and Children's Hospitals, the University of Victoria and Simon Fraser University.

Table 2: Solvent Waste Received at the Environmental Services Facility in 1996.

	1991	1992	1993	1994	1995	1996	Total
Transformers/other (Kg)	2,172	0	160	81	0	500	2,913
Oil (liters)	1,050	320	0	81	0	300	1,751
Light ballasts (Kg)	1,691	1,294	3,577	3,436	4,526	6,920	21,444
PCB contaminated material stored prior to 1991 (Kg)							5,135
Total PCB contaminated material stored on site (Kg)							31,243

Table 3: PCB Contaminated Waste Stored at the Environmental Services Facility.

PCB Contaminated Materials

Table 3 illustrates the amount of PCB contaminated material stored at the Environmental Services Facility. The total amount of PCB contaminated material stored on-site is 31.2 tonnes.

The University stores these materials in a permitted area at the Environmental Services Facility. Currently only one disposal option exists within Canada for the destruction of PCB wastes and that is incineration at the Swan Hills Facility in Alberta. The majority of the waste consists of electrical light ballast's which are packaged inside special containment drums. The drums are packed with absorbent material in case of any leaks. These drums are located inside specially adapted shipping containers which provide secondary containment.

In addition to the amount accumulated in 1996, 135 L of PCB contaminated oil was sent to BC Hydro for decontamination and re-use. The BC Hydro process can decontaminate some wastes which have a low concentration of PCB's.

Recovery Programs

The recovery of certain hazardous wastes generated from the University can be divided into three main areas; recovery of organic solvents, recovery of silver and treatment of photographic waste solutions and the exchange of un-used chemicals. Each area expanded in 1996.

Recovery of Organic Solvents

The amount of solvent processed in 1996 was 4,255 liters. This is an increase of 32% on 1995 and is a result of continued expansion of the program. The largest increase was in the area involving waste dichloromethane where research was conducted by Facility staff and a 4th year undergraduate student. The recovered product has a purity of 97% dichloromethane and efforts are currently focused on trying to expand the customer base for this material.

A breakdown of the solvents recovered in 1996 is shown in figure 2 and the departments participating in the program are listed below.

- Academic Pathology
- Anatomical Pathology
- Anatomy
- Botany
- Biomedical Research Center
- Chemistry
- Dentistry
- Oceanography
- Pharmaceutical Science
- Plant Science
- Soil Science

Treatment of Photographic Waste

The Facility continued offering its

service to collect, treat and neutralize for safe sewer disposal waste photographic fixer and developer solutions.

The process involves precipitating out silver in the solutions which is regulated by the Greater Vancouver Regional District, prior to neutralization. The silver is collected and sent to a refinery for re-use. The program has been very successful and collects and treats 4,600 - 4,700 L of photographic waste per year.

Twenty seven departments, listed below, utilized this service in 1996.

- Academic Pathology
- Anatomy
- BC Research
- Biochemistry
- Biomedical Communication
- Biotechnology
- BMC-St. Paul's
- Botany
- BRC
- Chemistry
- Electrical Engineering
- Forestry
- Geography
- Media Services
- Medical Genetics
- Metal & Materials
- Microbiology
- Oral Biology
- NCE
- PhotoSoc
- Physiology
- Plant Science
- Psychiatry
- St. Paul's Hospital
- Ubysses
- University Hospital
- Zoology

Pilot Chemical Exchange Program

The pilot chemical exchange program which was implemented in 1995 continued to expand in 1996. Over 1,200 Kg of materials were exchanged, an increase of approximately 70%. These materials were re-distributed on campus free of charge.

Departments participating in the program in 1996 included;

- Biochemistry
- Botany
- Chemical Engineering
- Chemistry
- Civil Engineering
- Health, Safety & Environment
- Faculty of Science - Youth Science Program
- Mining and Mineral Processing
- Pharmacy
- Plant Operations
- Pulp and Paper Research Institute
- Soil Science



THE UNIVERSITY OF BRITISH COLUMBIA

Environmental Programs 1996 Annual Report

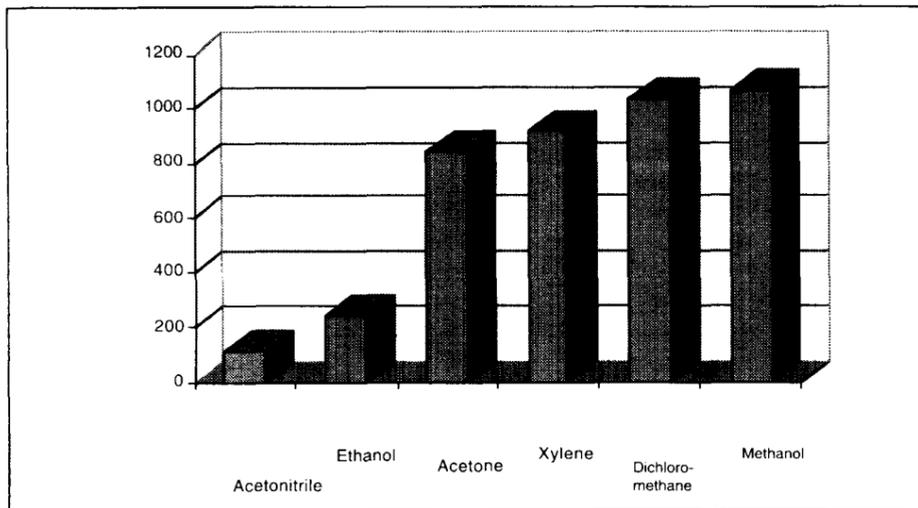


Figure 2: Solvents Recovered at the Environmental Services Facility in 1996.

Initiative	Money Generated	Disposal Cost Saved	Total
Solvent Recovery	\$1,800	\$4,260	\$6,060
Photowaste Treatment	\$1,100	\$4,600	\$5,700
Chemical Exchange		\$4,000	\$4,000
Chemicals Neutralized		\$1,400	\$1,400
Total	\$2,900	\$14,255	\$17,160

Table 4: Estimated Cost Savings to the University, 1996.

Financial Initiatives

Many of the hazardous waste reduction, treatment and recovery programs were established from initial capital funding from the Ministry of Advanced Education in 1993. Operating funds for these programs come from University budgets. While the primary goal of these programs is to minimize the environmental impact of the University, the economic viability of them is also important.

Table 4 illustrates the financial benefits resulting from some of these programs. The money generated is that received from selling recovered solvent or for charges to non university departments on campus for treatment/recovery services.

It is estimated that approximately 40% of the additional costs associated with running these programs is being recovered by the university through these measures.

Pilot Environmental Compliance Audits

The environmental compliance audit program is currently in a pilot stage.

The focus in 1996 was directed on two areas.

Inventory of Permanent Hazardous Materials Containment Sites

Federal and Provincial Regulations require that permanent containment systems for hazardous materials meet specific design criteria and are monitored for leaks which must be reported. The University of British Columbia has many hazardous materials containment systems which have not been identified, catalogued or assessed for physical integrity. A preliminary inventory of one hundred and thirty nine campus locations has indicated the presence of sixty nine hazardous materials containment sites. The project is close to two thirds complete. This initial review is based on current Campus Planning and Development architectural/engineering drawings as well as information provided by on-site personnel. It does not include information of an historic nature.

As well as contributing to the process of due diligence, the database will be useful on an operational level for:

- Campus Planning and Development

- Plant Operations
- Fire and Emergency Response

In addition, legislation coming into force on April 1, 1997 require that storage tank locations be identified in site profiles required by regulators prior to the commencement of certain development projects.

Once the database has been completed the storage tanks will be prioritized in terms of potential environmental concerns. Management plans, which may involve monitoring, or remediation, will then be developed with departmental units.

An assistant has been hired on a term contract to assist in the initial identification process.

Follow Up to Initial Pilot Compliance Audits

In 1995, a pilot environmental audit program was initiated at a number of UBC sites. The purpose of the pilot project was to develop a workable model for performing environmental compliance audits at all of the diverse University worksites. These initial audits were summarized in six individual reports in which specific recommendations were made relating to potential and existing environmental hazards at those sites. In 1996, these shortcomings were pursued by audit personnel. As a result, management staff responsible for administration of these sites have confirmed that the report recommendations have been successfully addressed. In 1996 areas which were successfully completed included;

- Wood Science
- Environmental Services Facility
- Plant Operations Warehouse
- Plant Operations Transfer Station
- MacDonald Research Wing
- General Services Administration Building
- SERF

The audit model continues to be developed to ensure that all types of worksite types are included. A proposal to accelerate the environmental audit program was developed in 1996 and presented to the Vice President of Research by the Environmental Programs Advisory Committee.

Emergency Scenario

In June of 1996, the Department of Health, Safety and Environment (HSE)

conducted an emergency scenario on the UBC campus. A primary purpose of any scenario is to determine deficiencies that may arise during an emergency response. These findings provide the basis for upgrading and fine tuning the process and are essential to developing an efficient emergency response system. This was the fourth year that such a scenario was conducted by the University.

As in previous years, a primary objective of the exercise was to evaluate inter-agency emergency communication capabilities at UBC. A second function was to examine the on-campus hazardous materials response provided by the recently amalgamated University Endowment Lands Fire Department and Vancouver Fire and Rescue Services.

The scenario involved representation from several internal and external agencies. The internal agencies involved included;

- HSE
- Parking and Security (PASS)
- UBC Public Affairs.

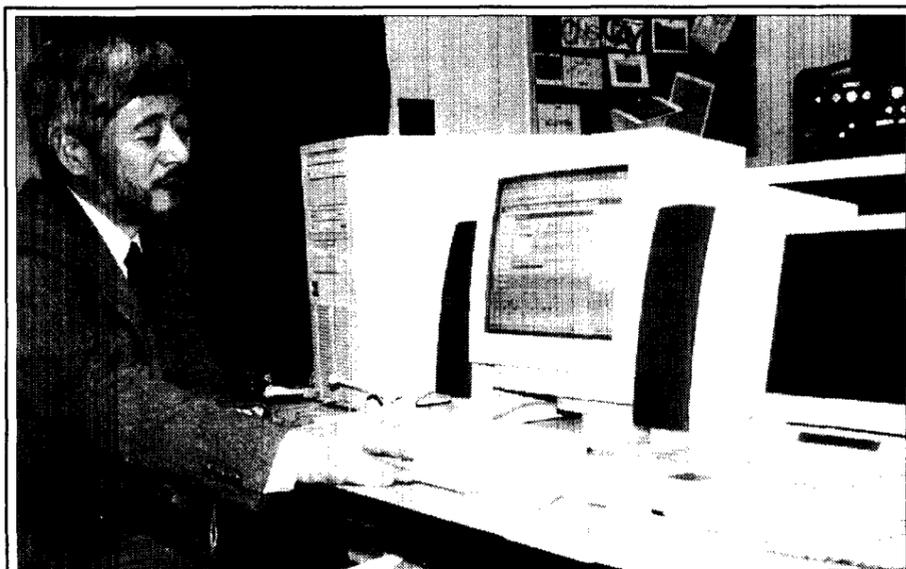
The external agencies involved included;

- BC Ambulance Service (BCAS)
- RCMP
- Paprican
- Vancouver Hospital Services & Health Sciences - UBC Pavilion
- Vancouver Fire and Rescue Services (VFRS).

The exercise was evaluated by more than 15 pre-designated observers from participating university departments and external agencies. The observers were placed at specific view points to document the chain of events. Areas of difficulty and concern that arose during the scenario were determined and discussed during a debriefing session held later that day. Feedback from all participants was positive and interest was stated for involvement in future annual emergency response exercises.

Reportable Spills

The University is required to report spills of hazardous materials over certain specified limits to BC Environment and the Provincial Emergency Program. In 1996 there were no spills of sufficient quantity which required reporting. In 1995 there were 3 reportable spills.



Stephen Forgacs photo

Talking Bookmarks

Hiroshi Kawamura of Tokyo University visited the Crane Resource Centre earlier this month to install the Daisy/Plectalk, a revolutionary talking book indexing system which gives the visually impaired access to recorded text that is equal or better than that enjoyed by print readers.

Scholarship pays tribute to geologist Spence

A graduate scholarship endowment is being established in memory of Colin Spence, a geologist and member of the board of advisers for UBC's Mineral Deposit Research Unit, who was killed last June while surveying a mine site in the Philippines for an Australian mining company.

The Colin D. Spence Memorial Scholarship in Geology is being established by his friends, industry colleagues and with the support of Rio Algom, the mining company for whom he worked for 40 years. The endowment will fund in perpetuity a \$6,000 scholarship available annually to a master's student in geological sciences, geological engineering or geophysics. Recipients may be eligible to renew the scholarship for a

second year.

While Spence was with Rio Algom he was closely involved in establishing the Rio Algom scholarships at UBC funded by a capital endowment of \$200,000 through the World of Opportunity campaign.

Born in Kenya, Spence graduated from London's Royal School of Mines in 1955 before joining Consolidated Zinc Corporation of Canada. He joined Rio Algom in 1964 and was the company's exploration manager in Western Canada until his retirement in early 1996. He is survived by his wife and son.

For further information about the scholarship fund contact Elizabeth Ko in UBC's Development Office at 822-3846.

News Digest

Pollster Angus Reid, former B.C. Premier Mike Harcourt and *Vancouver Sun* editor Patricia Graham will take part in a free public forum March 1 at UBC titled "Politics, Ethics and the Canadian Media."

The event is sponsored by UBC Continuing Studies in cooperation with the Political Science Students Association (PSSA).

"Panelists each have a different take on what the role of the media is in today's political process," says Adrienne Nash, president of the PSSA. "These differing perspectives should spark some lively debate, especially with a federal election seemingly around the corner."

Kate Morrison from National Media Archives and Joanna Everitt with UBC's Dept. of Political Science will join Reid and Harcourt at the forum. Harcourt is an adjunct professor at UBC's Institute of Asian Research as well as a senior associate with the Sustainable Development Research Institute.

Nash says each panelist will have 20 minutes to present his or her ideas after which there will be a question and answer session. The forum starts at 9 a.m. in Room 101 of the Curtis building which houses UBC's Faculty of Law.

A second panel will feature Graham, CKNW reporter Bruce Claggett, political commentator Stan Persky and Donald Gutstein, Communications professor at Simon Fraser University.

For more information about the forum call 822-1460.

•••••

The Science Council of B.C. is accepting nominations for its 1997 awards program.

This year's B.C. Science and Technology Award winners will be recognized in nine categories: new frontiers in research; solutions through research; business and education partnerships; young innovator; volunteer of the year; industrial innovation; entrepreneurial science; career achievement; and science communication.

Deadline for nominations is March 31. Nomination forms are available from the council at Suite 800, 4710 Kingsway, Burnaby, B.C. V5H 4M2.

For more information on the awards program call 438-2752.

•••••

Women on campus are invited to participate in a two-day event designed to unite them in an exploration of their spirituality and provide inspiration and companionship.

Women & Spirituality Dialogue '97 takes place March 7 and 8 at the Vancouver School of Theology located on campus at 6000 Iona Drive.

The fifth annual event will feature sessions on spirituality, creativity and vitality and the keynote address will be delivered by Keri Wehlander, author of *Joy is Our Banquet: Resources for Everyday Worship*.

Registration is required by Feb. 21. For more information, call 822-4671 or fax 822-4714.

•••••

The Museum of Anthropology is hosting a series of events that reflect the Tibetan community's continuing efforts to increase the public's understanding of the rich history and culture of Tibet.

The Spirit of Tibet, which runs Feb. 16 through March 4, is held in conjunction with the Tibetan Cultural Society, the Canada Tibet Committee and Women Working for a Free Tibet.

On three consecutive Sundays, MOA will host day-long celebrations of Tibet's traditions, history and culture with food and weaving demonstrations, dance performances and video screenings.

The events will be held from 12 noon to 4 p.m., Feb. 16, 23 and March 2.

MOA will also host three evenings of films: Tibetan Book of the Dead, Part 1, a documentary exploring Tibetan teaching on dying and rebirth, on Feb. 18; Compassion in Exile, a portrait of the Dalai Lama, on Feb. 25; and Missing in Tibet, the story of Fulbright scholar and musician Ngawang Choephel, who was arrested and "disappeared" while working to preserve the traditional music and dance of his culture, on March 4.

All films are free to the public and begin at 7 p.m.

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The deadline for the March 6, 1997 issue of *UBC Reports* is noon, February 25.

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Arts, science students win top AMS executive posts

The Students for Students slate will dominate student council this year, filling four of the five executive offices.

Fourth-year science student Ryan Davies moves from the director of finance post to top spot. He began a one-year term as AMS president on Feb. 14.



Davies

Running mate Ruta Fluxgold, a fourth-year arts student, will fill the vice-president's job. Fluxgold was a member of the Student Administrative Commission

which oversees AMS clubs and the Student Union Building, and recently served as vice-chair of the University Commission.



Fluxgold

Shirin Foroutan, third-year arts, who becomes co-ordinator of external affairs; and Vivian Hoffman, first-year arts, who assumes the duties of director of finance. Hoffman ran as an Ac-

tion Now candidate in this year's elections.

Outgoing AMS President David Borins, first-year law, has been elected to serve a one-year term as student representative to the Board of Governors. In 1995/96, he was coordinator of external affairs.

Student council has requested a recount for the second student position to the Board of Governors race where a margin of 10 votes separated two candidates.

In Senate elections, five student candidates for senator-at-large have been confirmed as well as nine student representatives from individual faculties. There were no Senate nominations for the faculties of Agricultural Sciences, Education and Forestry.



Garvin Wilson photo

Rhythm Masters

The driving Latin rhythms of the UBC Percussion Ensemble were a featured part of the Artistry in Percussion series during ArtsFest — the annual celebration of student talent in the literary, performing and fine arts at UBC held earlier this month. Shown here are Anthony Hall (front) and (rear, l-r) Jonathan Bernard, Kim Holland, and Cynthia Yeh. Not shown are Dominique Brunchmann, Nicolas Coulter, Joel Batch and director Salvador Ferreras.

Festival showcases contemporary composers

UBC's School of Music and the Istituto Italiano di Cultura in Vancouver present a week-long homage to Italian and Canadian composers Feb. 24 to March 1.

The Festival of Italian Contemporary Music will feature a series of concerts, master classes, seminars and discussions organized in co-operation with some of Vancouver's major music organizations and institutions including SFU's School for the Contemporary Arts, the Vancouver Academy of Music and the Canadian Music Centre.

"Such a generous and creative project supports, enhances and stimulates our musical lives in a most unique way," said Jesse Read, director of UBC's School of Music.

Highlighting the festival is the world premiere of the contemporary opera *Mal'akhim - Angels* at St. Andrew's Wesley Church on Friday, Feb. 28 at 8 p.m. Composer Riccardo Piacentini will be in attendance.

Another highlight of the festival occurs Thursday, Feb. 27 at 8 p.m. in the Recital Hall at the School of Music. A concert of Italian and Canadian contempo-

rary music will be performed by Marc Destrubé on violin, Lori Freedman playing bass clarinet, flutist Brenda Fedoruk and Bliss Johnston at the piano.

Maestro Giacomo Manzoni, considered among the most eminent Italian composers of our time, will lead master classes for composers during the six-day event.

Admission is free to all events except *Mal'akhim - Angels*. For more information, call UBC's School of Music at 822-3113 or the Istituto di Italiano di Cultura at 688-0809.

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ESPRESSO ON THE GO at Pacific Spirit Place	7:00 am - 3:00 pm
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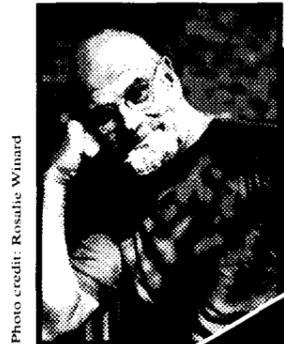


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An Evening with OLIVER SACKS

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Part travel essayist, part medical explorer, Oliver Sacks shares his journey in search of neurological wonders - this time to two exotic Pacific islands. He delves into two isolated disorders: congenital colorblindness on the island of Pingelap, and a puzzling neurodegenerative disease in Guam. Dr. Sacks involves us in his wondrous voyage of discovery every step of the way. He shows us how patients who are truly isolated by a disease still have adaptive powers, still have their human dignity. Dr. Sacks will talk about and read from his latest work as well as briefly answer questions. A book signing will follow.

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Profile

Channel changer

Prof. Terry Snutch turns the channel on calcium



Charles Ker photo

by Charles Ker

Staff writer

Hunched over a rack of tiny test tubes, Ellie Mathews clones a calcium channel as Sting croons I'm So Happy through an overhead speaker. Life is good in Biological Sciences Lab 3459.

Mathews, a die-hard Montreal Canadiens (Habs) fan, wears a Habs hat, shirt and carries 3-D hockey cards of Saku Koivu and other Canadiens stars in her back pocket. She is a dedicated young scientist and a walking torment to mentor Terry Snutch.

"I was born in Ontario and my father was a devoted Leafs fan," says Snutch, whose office lies directly across from Mathews' workstation. "Even though I've been in Vancouver all these years, the Toronto Maple Leafs seem part of my genetic makeup."

It seems also that Snutch, a professor in UBC's Biotechnology Laboratory, is genetically predisposed to ground-breaking science.

Mathews is one of two graduate students, six post doctoral fellows, two undergraduates and two technicians currently following Snutch on his quest for, and an understanding of, calcium channels in the human body.

Essentially, Snutch investigates how calcium gets in and out of the brain's 100 billion nerve cells, or neurons, and triggers electrical and chemical signals en route. Calcium acts as the messenger between neurons that control skeletal, heart and smooth muscle contraction, hormone secretion and all electrical signaling in the central nervous system. That's the good news.

The bad news is that too much calcium entering a cell, through so-called calcium channels, can be toxic.

Snutch's research during the last seven years has led to some startling breakthroughs.

"When we first started this work, people didn't know how many calcium channels were in neurons," says Snutch, who has cross-appointments in the departments of Zoology and Psychiatry. "They knew if you poked an electrode into a cell you could detect channels opening and closing but nobody knew how many channels there were or how they worked."

Snutch has since identified and cloned five genes encoding the proteins

Prof. Terry Snutch has won acclaim for his work studying the role of calcium channels in the transmission, reception and storage of information in the central nervous system. Part of this work involves the deadly geography cone snail whose toxic venom blocks the ability to conduct electrical signals in the body.

(channels) that regulate calcium entry into brain cells. It turns out that some of these genes are also turned on in the heart. In fact, Snutch believes that there may be as many as a dozen types of calcium channels, controlling different functions, in different parts of neurons and in different types of cells.

His discovery has opened up a huge new field for pharmaceutical companies, which, with the help of Natalie Dakers and others in UBC's Industry Liaison Office, have beat a path to the molecular neurobiologist's door.

Two of the channels cloned by Snutch are the target of drugs currently given to treat cardiovascular disorders including hypertension, angina and certain arrhythmias. Migraine headaches and some forms of epilepsy are two other disorders shown to involve calcium entry into cells.

Snutch says approximately 50,000 Canadians suffer from strokes each year, 15,000 of whom die. The remainder, he adds, are left with varying degrees of disability as cells are killed by a flood of calcium in the stroke's aftermath.

"If you want to design a drug that will block calcium coming into cells to prevent injury from stroke, then you want to block a specific type of channel," says Snutch. "Similarly, if you want a drug that is going to interact with channels involved in migraines, you don't want a drug that will effect other channels that are busy controlling important functions elsewhere."

Snutch's challenge was to simplify the process whereby each of the

brain's 100 billion neurons simultaneously transmit thousands of electrical signals in tens of milliseconds.

Unfertilized eggs from the South African clawed toad provided the simplified model he needed to study calcium channels individually outside the body.

One floor up in Snutch's second lab, post doctoral fellow Kathy Sutton

oversees what appears to be a most delicate operation. Two electrodes — looking like needles dentists use to freeze gums — are trained on a small tray under a microscope. A glance through the lens shows that the electrodes are stuck into a single frog cell which has

been injected with the gene for a particular calcium channel.

Sutton explains that after the frog cell is injected with the cloned DNA, it is left for five days to manufacture the protein in its own membrane. "Then," says Sutton, "we shock the membrane, the protein opens and we have a functioning calcium channel. The frog eggs don't know that they are not a nerve cell, and we get them to act like one."

The next step is to introduce potentially useful drugs or different serums from patients with particular diseases that are thought to effect calcium channels and see what happens to the calcium current.

Snutch's pioneering process enables scientists to study channels and all their properties outside the brain and use this information to design or look for drugs that can either block or excite certain channels by themselves

without risk of effecting other channels.

Back in room 3459, Snutch hauls out a shoebox filled with cone snail shells and holds up a *Conus* geographus specimen. He warns that handling a live specimen on a beach in its native home of Micronesia would result in certain death within two hours.

One of 500 species of hunting cone snails, the geography cone snail paralyzes its prey by injecting a toxic venom that blocks one of the channels Snutch has cloned. The channel in question is required for electrical signaling in all nerve cells. Disrupting calcium flow through it leads to suffocation.

Snutch also discovered that the snail toxin blocks other channels involved in strokes and pain transmission. A drug company in the U.S. has taken this information and is developing a pain reliever reported to be a thousand times more sensitive than morphine.

Snutch says the drug may eventually help ease chronic pain among AIDS and terminally ill cancer patients.

Since his arrival at UBC in 1989, Snutch has accepted a steady stream of provincial, national and international research awards. These include: Killam Research Prize (1991); Alfred Sloan Research Fellowship (1991-93); International Research Scholar, Howard Hughes Medical Institute (1991-96); Outstanding Academic Alumni Award, Simon Fraser University (1994); Medical Research Council of Canada Scientist Award (1995-2000); and the 1996 International Albrecht Fleckenstein Award.

When he isn't doing award-winning research, Snutch does confess to having another obsession.

For three years he's been trying to catch and spay the den mother of a burgeoning cat population living under a hut behind the Biological Sciences building. The blue russian has managed so far to evade Snutch and the three-metre-long extension net he keeps in the corner of his office.

"She's up to two litters a year and the campus is being overrun," says Snutch, who has already adopted three of her kittens.

And then, of course, there are his beloved Toronto Maple Leafs, currently last in their division. On this matter, Snutch says, "all my channels are firmly closed."