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King Carl XVI Gustaf of Sweden, seen here with UBC President David Strangway, toured the campus March 18. He was accompanied by Queen Silvia on his visit.

# $436 million in KAON spinoffs, study predicts

by Debora Sweeney

Technology spinoffs from a proposed KAON factory at TRIUMF will total $436 million per year, a report prepared for the provincial government says.

TRIUMF and provincial government officials are seeking that amount from the federal government to construct the facility.

The project has a price tag of $571 million. So far, the provincial government has committed $87 million, but plans to go ahead are on hold until the federal government assesses the economic impact.

Support for a KAON factory at TRIUMF from Japan, Europe and the U.S. is expected to reach $150 - $200 million, more than twice the $75 million recommended by a federal review committee.

With the economic impact report in hand, TRIUMF Director Dr. Erich Vogt believes the case for a KAON factory is indisputable.

"The questions put to us by the federal government have now been answered very positively — even more positively than we thought," said Vogt.

Kaons are tiny sub-atomic particles made up of quarks, which are thought to be the most fundamental building blocks of matter. With a KAON factory, physicists could study quarks in a new way, probing more deeply into the nature of matter.

The report states aggressive exploitation of TRIUMF/KAON technology, once up and running, would result in sales of $243 million, in these areas:

Microelectronics. Electronic circuitry 100 - 1,000 times faster than the silicon circuits used by 90% of the world's electronic companies.

Nuclear Physics and Chemistry. Developing pharmaceuticals for use in hospitals.

Measurement Systems. A new generation of PET (Positron Emission Tomograph) scanners, currently used to provide pictures of the human brain at work.

Control Systems. Advanced robotic and artificial intelligence systems which can measure the condition of high tech machinery in one ten-millionth of a second.

Software. Converting information gathered at extreme speed into pictures.

Electromagnetic systems. Developing sophisticated Radio Frequency (RF) technology for use in medical and space research, and for radar systems.

Cryogenics. Producing extremely low temperatures necessary for superconductor research and application.

Anticipating business opportunities, a TRIUMF/KAON Ventures Office has been established, headed by Dr. Richard Johnson. Johnson said there are several industries across the country which will be targeted for technology transfer.

"Technology transfer in the last several years has been recognized as a national need," he said. "A lot of what we do involves scientists and engineers at UBC, cooperating with companies like MacDonald Dettwiler, Microtel and Canadian Astronautics."

The report says in eight years, paybacks to governments will be in excess of $120 million per year by combining potential sales with $161 million in production from the direct operations of a KAON factory.

## *Advanced placement report to Senate*

A report examining UBC's policy on advanced placement and advanced credit for high school students taking enriched academic programs will go before Senate April 13.

The report, prepared by the Senate Admissions Committee, contains feedback from UBC faculties on recommendations made to Senate last November by a presidential Task Force on Liaison, Recruiting and Admissions.

UBC President David Strangway said he welcomes discussion and comment about the task force recommendations (see insert this issue).

*Siddon at ceremony*

# Fisheries lab given to UBC

by Jo Moss

Tom Siddon, the federal minister of Fisheries and Oceans, will visit the campus Friday, March 25 to give the keys of a former government fisheries technology laboratory to UBC.

In a brief ceremony, Siddon will unveil a plaque at the 30-year-old Vancouver Laboratory on the west side of campus, officially turning over the 22,000 square feet of laboratory and office space to the university.

Siddon said he was pleased to be able to support seafood research at a major western university.

"Technological advancement is the key to keeping the Canadian fishing industry competitive," he said.

The Fisheries and Oceans research unit has moved to new facilities in West Vancouver.

The Department of Food Science, which currently operates out of three separate locations on campus, will take over the building.

POWRIE

"For the first time, we will all be under one roof," said William Powrie, department head.

Faculty members in Food Science are currently conducting research in cramped facilities under crowded and unsafe conditions. The new building will provide more laboratory space, Powrie said.

Part of the Vancouver Laboratory building, about 1,500 square feet of non-laboratory space, is occupied by the International North Pacific Fisheries Commission which has had tenancy since the 1950s. Under the university's ownership, INPFC will remain for at least the next ten years.

The acquisition of the Vancouver Laboratory follows closely on the heels of the formation of the new B.C. Food Technology Centre—a collaborative venture between the Food Science Department and the Fisheries and Food Products Branch of B.C. Research, a non-profit research organization which promotes industry research and development.

(B.C. Research is located on the UBC campus, but is not affiliated with the university.)

The partnership provides for cooperative research and development, and transfer of technology to the food industry, including the fish processing sector. The Centre will also provide the public and private sectors with a number of services including assistance in business management and marketing.

With the establishment of the Centre, and increased laboratory space in the new building, the Food Science department will be able to expand its research program in seafood science and other areas.

"Up to now we have been hindered by lack of laboratory facilities," Powrie explained. "The Vancouver Laboratory is perfect for our needs as it was designed and built specifically for food research, with an emphasis on seafood."

The building offers walk-in freezers, a small cannery, a chemical analysis laboratory, and a food analysis laboratory for flavor and texture profiling.

"We'll be able to undertake more innovative research that addresses some of the major problems in the seafood product industry," Powrie said.

Current research activities in seafood science include developing simulated scallops from underutilized fish, and investigating the storability of frozen aquacultured salmon under modified atmosphere packaging.

The new facility will allow expansion of this research and provide for new initiative. One proposed study is to investigate polyunsaturated fatty acids in B.C. fish products and determine their relationship to the prevention of heart disease.

"The building will help foster our collaboration with B.C. Research in the development of all aspects of food technology," Powrie said.

Seafood science research is just one part of the department's broad spectrum of food research, some of which is undertaken in collaboration with industry partners. Food Science researchers have developed new foods from milk by-products, a dairy-free ice cream; and investigated new methods of assessing the nutritional quality of processed food products.

Still in developmental stages is an innovative process for preserving fresh fruits and fish with non-toxic inert gases, increasing their shelf life. Sliced mangoes, for example, can be stored up to 24 weeks. The process will offer enormous economic benefits to Canadian fruit farmers allowing high quality fruit to be shipped to foreign markets.

# *New policy comittee approved by Senate*

by Gavin Wilson

Despite strenuous opposition, the Senate has established an advisory standing committee on academic policy.

Critics of the proposal said the committee was neither necessary nor wanted, however the Senate gave its approval at its March 16 meeting.

Dr. Richard Spencer, who proposed the new committee, said Senate needs such a body to draw up long-term academic goals and give guidance to members who often get bogged down in the details of day-to-day decision-making.

He suggested the committee could look at such issues as enrolment, levels of research funding, liaison with other institutions and the long-term implications of curriculum.

Critics such as Dr. Paul Tennant dubbed the new body a "super committee" that would duplicate the work of existing committees and fundamentally change the way Senate operates.

"I'm worried about the duplication of work and the denigration of existing committees," said Law Dean Peter Burns. "I don't see how this committee would function any better than what we have now."

Science Dean Dr. Robert Miller asked: "What special information or wisdom would this committee have to allow it to usurp the power of existing committees?"

But Spencer said the intent is to create an advisory body with no more power than other Senate committees.

"It's only power would be to report to Senate," he said. "It would give Senate a tool to do its job better. It wouldn't be an alternative to Senate."

Spencer recommended that the committee on academic policy report to Senate "at least annually" and meet with other committees on an ongoing basis.

"As it stands, I don't believe Senate is well-prepared to make decisions on the establishment or discontinuance of new programs. We have no framework to work with, no coherent policy, no plan, no guidelines to use as references," he said.

Dr. Luis De Sobrino agreed, saying that Senate members are often left with their own instincts when making committee decisions. They could use more information about the university's long-term objectives, he said.

Commerce and Business Administration Dean Dr. Peter Lusztig suggested that the new committee would conflict with the powers of faculties to establish academic policy. Faculty recommendations on academic matters are taken to Senate for approval.

Spencer said the work of the committee would not interfere with the academic leadership of the President's office or the autonomy of faculties and departments.

He recommended that the committee's first task be to produce detailed terms of reference for itself.

# Use of oxygen by Natives in Andes subject of study

**by Gavin Wilson.**

UBC researchers are off to the Andes Mountains next month in a quest to understand how the human body manages to adapt to low levels of oxygen.

High in the mountains of Peru, the researchers will examine six volunteer Quechua Indians. Their exercise performance capacities and metabolisms will be tested both in the Andes and then later at lower elevations in Canada.

The Quechua are able to perform strenuous work at 16,000 feet. At that altitude there is almost fifty per cent less oxygen than at sea level and low-landers gasp for breath with the slightest exertion.

The research could have a number of applications, said Dr. Gordon Matheson, a member of the research team. Some tests will provide hard evidence on whether electrical stimulation of muscles is beneficial for rehabilitation. It is a popular therapy, although controversy surrounds its effectiveness.

The research could also offer a model for the study of muscle diseases, such as muscular dystrophy, Matheson said.

But the focus of study is to find the trigger that shifts the gears of the human body from an aerobic metabolism, in which oxygen is used to create energy, to the anaerobic metabolism, which doesn't require oxygen to create energy but leads to rapid muscle fatigue.

The differences in the metabolisms can be illustrated by looking at two types of runners. A marathoner needs a steady supply of energy over a long distance; a sprinter uses energy stored in the body in a quick burst that can't be maintained over time.

Researchers will compare the Quechua's use of oxygen, glucose and fatty acids to provide energy with endurance athletes such as marathon runners, short-burst power performers such as hockey players and unfit, sedentary people.

"The study will try to determine whether or not oxygen limitation is the prime stimulus for the onset of anaerobic metabolism," Matheson said. "Everyone has always assumed it has been, but our early data suggests that it is not the case."

It is commonly thought that the anaerobic metabolism takes over from its aerobic counterpart when the demands for energy is greater than that which can be supplied by inhaled oxygen.

Matheson says some recent experiments show that other factors, such as the work rate of the heart, may be more important in making the shift.

The study may also shed some light on the ability of the human body to adapt to life at high altitudes. Much is already known about this, but there are theories yet to be tested, Matheson said.

"Very few of the studies have been done on individuals whose genetics and upbringing are altitude-adapted for generation after generation — and who are then brought down to a low altitude," he said.

The study is supported by a Natural Sciences and Engineering Research Council grant to zoologist Dr. Peter Hochachka, whose earlier work on similar problems in high altitude adopted animals — llamas, alpacas, and deer — set the stage for these experiments.

The interdisciplinary study also involves other sub-programs and a collaborative group of scientists which include Dr. Don McKenzie, Sports Medicine, Dr. Wade Parkhouse, a post-doctoral fellow, and Dr. Peter Allen, head of clinical Nuclear Magnetic Resonance unit at the University of Alberta. The NMR unit will be used to test the Quechua' muscle metabolism.

More tests will also be done as the Peruvians adapt to lower elevations.

"Every week we're going to repeat a number of tests: heart function, aerobic and anaerobic capacities, hemoglobin counts, lung function," said Matheson.

Regional blood flow will be examined to see if they have a greater surface area in their lungs for the exchange of oxygen. The Peruvians may also have hearts that pump greater volumes of blood per contraction than other people, he said.

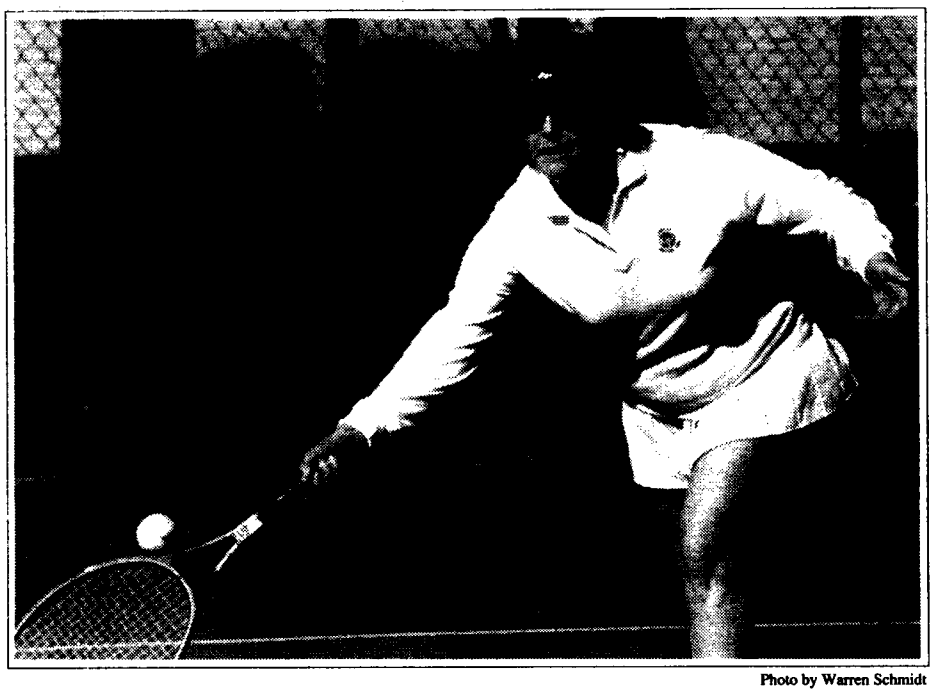

Photo by Warren Schmidt

Heather Campbell's game is in tip top shape and so is her leg after laser treatment cleared an artery

# Lasers zap clogged arteries in leg

**by Debora Sweeney**

For the first time in Canada two UBC surgeons are using a laser to dissolve blockages in clogged leg arteries, reducing the need for arterial bypass surgery.

Since June, Dr. Peter Fry and Dr. Lynn Doyle have performed the laser procedure on 25 patients at UBC Health Sciences Centre Hospital. The success rate is between 60 and 70 per cent.

"Our policy is to tell patients they have a blockage in their arteries where we would normally advocate bypass," said Fry, "but in some cases, we can do it with the laser, without surgery, cutting their hospital stay and the risk factors associated with surgery."

Arterial disease is common in middle aged and elderly people, especially among heavy smokers, said Fry. Often, people discover they can no longer enjoy exercise or walking because of tightness and cramping in their legs.

Heather Campbell, a Vancouver teacher, suffered more than a year of agonizing pain before she underwent the laser treatment.

"I got a cramp I thought was a tennis cramp, but it never got better," said Campbell. "In '86, I walked for miles at Expo, but in the last year, I couldn't walk more than two blocks without severe pain."

Teaching elementary school added to Campbell's problems. "I was on my feet a lot. I used to swallow an aspirin or two and continue on with the pain."

Dr. Fry performed the laser treatment on Campbell, zapping two large blockages from her thigh.

By inserting a tube in the artery, he passed the laser through until it reached the blockage. Then, he activated the hot laser tip, generating heat of 400 degrees centigrade to dissolve the build-up of calcium, cholesterol and tissue clogging the artery.

After cutting through the blockage, he introduced a balloon catheter to stretch out the artery, widening the passage.

"From the minute he did the procedure, my leg hasn't hurt," said Campbell, who is enjoying her tennis game once again.

Fry, too, is delighted with the results. But, he added the treatment is still in its infancy — so far his is the first hospital to perform it in Canada.

"This is not going to replace vascular surgeons and it's not going to replace the need for bypasses," he said, "but for some patients, it offers an alternative form of treatment. From the patient's point of view, it saves the amount of time he or she has to spend in hospital."

# Urinary tract disease studied in women at UBC

**by Debora Sweeney**

UBC's Division of Infectious Diseases has begun an examination of recent evidence that links urinary tract infection in women with the use of contraceptives.

According to previous studies, women who use the diaphragm might be more likely to have a history of bladder infections.

"If you mention urinary tract infection to any group of young women, most can relate because they or their friends have been exposed to the problem," said Dr. Anthony Chow, who heads the division. "The majority of women develop this as an acute problem with severe symptoms and it has the potential of developing into a more serious infection of the kidneys."

Several factors have prompted researchers to look more closely at devices women use including: the discovery of pelvic inflammatory disease; the banning of certain intrauterine devices like the Dalkon Shield; and the association of tampon use with toxic shock syndrome.

Collaborating with UBC Student Health Services, Chow's research team is looking for volunteers to take part in the study, funded by Health and Welfare Canada.

The team will analyze four comparison groups — women who use the diaphragm, the cervical cap, oral contraceptives, and those who have had tubal ligations — to link a particular type of contraceptive practice to urinary tract infection.

Chow is particularly interested in volunteers who are starting a new method of contraception or who recently have had a tubal ligation.

Volunteers can contact Carole Cole at 875-4588.

# *Chair funded for research in nickel alloy*

**by Jo Moss**

The Natural Sciences and Engineering Research Council and the Nickel Development Institute are funding a research chair at UBC to explore new market applications for nickel alloys.

"We'll be investigating non-traditional applications of nickel alloys, in high temperature environments, for example," said Alec Mitchell, a professor in the Department of Metals and Materials Engineering who will be filling the research position.

The NSERC/Industrial Research Chair in Nickel Alloy Development is the second such chair in the Metals and Materials department.

The department has played a large part in developing Canadian nickel alloy technology, said Mitchell, who joined UBC in 1966.

"We've been responsible for a lot of changes in the nickel industry. Every aircraft engine flying today has parts that were made by processes developed at UBC."

Canada is one of the world's major producers of nickel and UBC's research under the new chair will help to broaden the global market for Canadian products, Mitchell said.

The Nickel Development Institute is an international association of nickel-producing companies, including Canadian companies such as Falconbridge, INCO Alloys International and Sherritt Gordon Mines, which sponsors research and development in the nickel industry.

Under terms of the research agreement, NDI will contribute $45,000 annually in cash and in-kind contributions. NSERC will $41,100 annually for five years to support the chair.

Nickel alloys are characterized by resistance to corrosion as well as strength. Conventionally used in pipe manufacturing and other construction materials, they are also found in electronics devices as magnetic shielding films—metal layers thinner than a credit card that prevent stray magnetic fields from interfering with the circuit processes.

In the aerospace industry, nickel alloys are used for engine parts, such as turbines, that are subjected to high temperatures and high stress.

Mitchell said his research will improve and develop the manufacturing processes used in nickel alloy technology. The techniques he develops will be tested in industrial settings in five countries: Canada, U.S., Japan, France and the U.K.

A graduate of Oxford University where he did his M.A. in chemistry and D.Phil. in metallurgy, Mitchell is one of the world's leading researchers in nickel alloys. He has served as consultant to a number of companies including INCO Alloys International.

# $965,000 to support fish technology research

**by Jo Moss**

B.C. Packers, the largest fish processor in the province, is supporting a $965,000 research chair at UBC to help upgrade fish processing technology.

Two new university positions—a senior and junior researcher—will operate the program.

The Natural Sciences and Engineering Research Council (NSERC) Industrial Research Chair in Industrial Automation in the Fish Processing Industry has been approved in principle by NSERC, subject to the hiring of a suitable candidate to fill the senior research position.

B.C. Packers is contributing $375,000 over 5 years to support the research chair. The company is also making its facilities available for testing new technology developed under the program.

NSERC is providing $590,000 for the chair in the Department of Mechanical Engineering.

The establishment of the research chair reflects a need among Canadian fish processors to remain competitive with the United States, Japan and the U.S.S.R., countries that dominate the world market and are introducing high technology into their processing factories.

"The creation of this expert group at UBC will have very positive effects on the future well-being of the fisheries industry," said federal Minister of Fisheries and Oceans Tom Siddon. "It will be the centre of research for the development of specialized industrial processes and equipment and infuse the latest methods into our local industry."

There is a shortage of university-based programs dealing with the problem of application of high technology to the fish processing industry, not only in Canada but world-wide.

About $500 million worth of seafood products, primarily salmon, is produced in B.C. annually and the industry accounts for about 25,000 jobs nationwide.

The two new researchers will provide a focus for the expertise of a number of UBC researchers, in areas such as computer-aided design, industrial automation and robotics, to develop specialized industrial processes and machines designed to meet the requirements of local industry.

Such a group would not only be the first of its kind in Canada, it would also provide a much-needed source of graduates with an expertise in the mechanical aspects of fish processing.

"Even small improvements in some of the processing operations could lead to very major savings and increased revenues," said Axel Meisen, Dean of Applied Science.

Upgrading the technology used in the mechanical processing of B.C.'s fishing industry would also reduce wastage and improve efficiency. That could lead to increased gains against other food products on the international market.

"Increased industrial efficiency could mean a gain not only in the fish export market, but also in the larger food export market," Meisen said.

The machinery commonly used in fish processing plants does not deal effectively with a raw product that varies in size, shape and texture. During the process of butchering, skinning, cleaning and filling cans, a substantial amount of the fish is damaged and rendered unusable.

One of the solutions would be to design equipment that can adapt its functions to each fish product it deals with, and complete the process at higher speeds, Meisen said.

It's estimated that a one-per cent improvement in product recovery at B.C. Packers could increase revenue by as much as $1 million annually.

The research group could also address other problems in the fishing industry including fishboat stability and design, fishboat fuel economics, product freezing and transportation, and unloading and sorting procedures.

The Faculty of Applied Science has a year in which to find an engineer qualified to fill the senior research chair. B.C. Packers and NSERC must approve the final candidate.

# UBC to release 3 new types of plants

**by Lorie Chortyk**

Three new or largely unknown plant varieties will be released to Canadian gardeners in April through UBC's Plant Introduction Scheme.

The Plant Introduction Scheme, the most successful program of its kind anywhere in the world, provides new plant material to gardeners through participating B.C. garden centres. The program is operated by the UBC Botanical Garden, in cooperation with the B.C. Nursery Trades Association, the B.C. Society of Landscape Architects, and research institutions in Canada and the United States.

Botanical Garden director Bruce Macdonald said the program "has succeeded beyond our wildest expectations."

"We are now one of the acknowledged world leaders in plant introductions, and five research institutions in Britain, the United States and eastern Canada are currently modelling plant introduction schemes after our program."

Research expertise at the university is used to identify and develop existing plant varieties from UBC's own garden collections and from collections around the world that will have widespread appeal to both professional and home gardeners.

"We look for plants that have good color, long flowering periods, are easy to propagate and tolerant to diseases, and will have strong commercial value," said Macdonald.

A careful screening and evaluation process is used to select the varieties that will be released to the public each year. After a final choice has been made by industry participants, 500 to 1,000 plants are propagated at UBC and sent to participating nurseries for large-scale propagation and distribution to gardeners across Canada and around the world. In 1987, sale of the new plants earned B.C. nursery operators an estimated $1.9 million.

The program started out with 10 nurseries producing plants for the B.C. market. Today,

MACDONALD

Macdonald says, 26 nurseries are involved, and plants are exported to Holland, Denmark, Britain, Germany, France, New Zealand, the United States and Japan, in addition to Canadian markets.

Since the program's inception eight years ago, nine new plants have been introduced. In April, three plant varieties — White Icicle *(Ribes sanguineaum)*, a white flowering selection of a shrub native to B.C., Bride's Saddle *(Diascia rigescens)*, a South African perennial with rose-pink flowers, and Crispy Wood Sage *(Teucrium scorodonia)*, a perennial known for its unique "frilly" foliage, — were released to the public.

John Schroeder, president of Valleybrook Gardens Ltd. in Abbotsford, B.C., and head of the B.C. Nursery Trades Association, said the program has given the industry outstanding international exposure.

"It's really put us on the map in the world market, and it's given us new and superior plants to offer local gardeners."

For Macdonald, the biggest reward is seeing the garden's collections move from UBC into the community.

"As a gardener, I know there's nothing more frustrating than visiting a Botanical Garden and seeing wonderful, unique plants that aren't available through local nurseries. I'm pleased that our collections are being used by gardeners and nurseries around the world."

# Professor battles clock to save native languages

**by Lorie Chortyk**

A UBC anthropologist is racing against time to help save B.C. native languages from extinction.

Dr. James Powell, an anthropological linguist, said native languages may go the way of the dodo bird.

"Of the more than 20 native languages that existed in B.C. before the arrival of the Europeans, four have already vanished," he said. "Only three languages — Chilcotin, Nass-Gitksan and Carrier — are in relatively good health. The others are disappearing quickly."

Along with other linguists and teachers, Powell and his research team are working to preserve native B.C. languages by creating written versions of languages which until now have been passed down orally. The team also creates dictionaries and curriculum materials so the languages can be taught in schools.

"If a language is to be preserved, communities must make an effort to use it in everyday life," said Powell. "Native languages are dying out because it is becoming more and more the norm for native children to have English as their first, and usually only, language.

"If knowledge and regular use of a language is skipped by even one generation, it's almost impossible to revitalize it."

Powell said linguists from around the world come to B.C. to study Northwest Coast languages.

"Our native languages have some of the most interesting and complex sound systems found anywhere in the world," he said. "Some of the languages, for instance, have 12 different types of 'K' sounds."

The complexity of the sounds sometimes make it difficult to convert them into an alphabet that can be typed on a conventional keyboard, Powell said.

"Although an international phonetic alphabet is available for writing these languages, community members often find the characters strange and cumbersome to use," said Powell. "Instead, we set up what we call a 'practical' writing system and allow the community itself to decide how their language should be written."

Powell recommends combining language teaching with traditional activities such as potlatches, dancing, hide-tanning and canoe-making.

"In Alert Bay, for instance, the students put on a play potlatch every year completely in their native language."

Powell said the success of efforts to save native languages from extinction depends on the level of commitment from the native communities themselves, funding agencies, researchers and teachers.

# $500,000 donated for real estate research

**by Jo Moss**

The Real Estate Foundation has donated $500,000 to UBC's Faculty of Commerce to help finance real estate research and given a further $100,000 to establish a teaching fellowship.

The income from the $500,000 capital grant will help fund the newly established Canadian Real Estate Research Bureau, an integral part of the Management Research Centre and Library to be located on the UBC campus.

Currently still in the planning stages, the centre will house five or six research bureaus each specializing in a different area, as well as the David S.C. Lam Management Library. Construction is expected to begin in 1990.

"The real estate bureau will make more effective use of faculty members in Urban Land Economics and other UBC departments who are involved in research of real estate policies and issues," said Stanley Hamilton, Associate Dean of Commerce. "It will fill a much-needed research gap in the field of Canadian and North American real estate."

Not only will the new bureau boost research on some of the more pressing issues in the industry, it will offer a number of services to both the private and public sectors including a computerized data base of up-to-date real estate information and a bibliography reference service..

The bureau will be supported by endowments from the real estate industry. An initial $1 million in capital is being sought.

George Gau, Chairman of the Urban Land Economics Division noted that the additional $100,000 donated by The Real Estate Foundation will establish a Real Estate Foundation, Scholars and Fellows Fund.

# *Canada plays Chile in Davis Cup tennis at War Memorial*

**by Jo Moss**

Canada's Davis Cup team will try to stave off demotion from the championship group when it meets Chile in Davis Cup action at UBC, Friday, April 8 to Sunday, April 10.

Canada and Chile are both strong contenders in the playoffs and the best-of-five weekend series will determine which team remains eligible to play in the championship group of the American Zone. The losing team will be demoted to Group II and will have to emerge champions in that division to regain entry to the championship group.

The American Zone is widely acknowledged as the toughest of the four zones in the international Davis Cup competition.

The weekend promises to be a very emotional affair, said Canadian team manager Robert Bettauer, since Canada also has a score to settle. The last time the two teams met in Davis Cup play, in Santiago in 1986, Chile defeated Canada 3-2.

On the Canadian team is Grant Connell, 22, from North Vancouver, and Glenn Michibata, 27, of Toronto, who will team up against Chile's best in the doubles showdown April 9. Quarter-finalists at the 1988 Australian Open in Melbourne, Connell and Michibata were winners at the Smirnoff Challengers last fall. Connell was recently named Tennis Canada's Player of the Year for 1987.

CONNELL

Also named to the team were Andrew Sznajder, 21, from Toronto, twice the Canadian men's singles champion; Chris Pridham, 22, from Oakville, Ont. who is ranked No. 80 in the world; Martin Laurendeau, 23, from Mount Royal, Que., quarter-finalist in the Stockholm Open; and Hubert Karrasch, 19, from London, Ont., a former national under-18 champion.

Bettauer said the team is both experienced and versatile. He noted that Karrasch has joined the team as a developmental player and will not compete in this Davis Cup play.

"It's unique to the Davis Cup that one of the two countries competing is always playing on home turf," Bettauer said. "Because the playoff is over three days, the crowds get to know the players well and the excitement gathers momentum. We expect spectators to wave flags and stamp their feet, like at a hockey game."

MICHIBATA

He said hometown support has often generated surprising upsets in Davis Cup matches.

Unlike other tennis competition, team members do not receive a special appearance fee, Bettauer said. They receive a nominal payment to cover expenses.

The upcoming event, which will be held at the War Memorial Gym, is the first Davis Cup playoff to be held in Vancouver in more than 15 years, and only the third in more than 75 years.

Series tickets for all three days cost $38 and are available now through VTC/CBO outlets. Daily tickets are $15 and will go on sale Friday, March 25.

# Index of B.C. newspapers completed

**by Gavin Wilson**

Historical research in B.C. will never be quite the same now that an index of more than 1,500 newspapers published in the province has been completed.

The B.C. Newspaper Project, directed by UBC librarian Margaret Friesen, is the most comprehensive listing of provincial newspapers yet compiled. It will serve as a model for a national database.

The index includes everything from obscure specialty publications to today's major metropolitan dailies. A browse through the index reveals ethnic and underground journals, editions read by goldpanners in the heyday of Barkerville and the paper you are now holding in your hands.

The index lists the newspaper holdings of 169 libraries and archives — from those in small B.C. towns to collections in New York and London, England.

It should prove invaluable for historians, genealogists and other researchers, said Friesen.

"Often the only information on a specific subject appears in newspapers published outside the major cities. And ethnic papers offer different points of view as well," she said.

The print version index will be become dated, but the electronic version on-line at the library is "a living database," said Friesen. "As information comes in, we'll try to keep it on-line."

The job took more than a year to complete. Many of the newspapers listed no longer exist.

"The format of newspapers almost guarantees that, over time, the paper they are printed on will eventually disintegrate. Some of our printed heritage is already gone," said Friesen.

The project was funded by a $75,000 grant given to the B.C. Library Association by the Social Sciences and Humanities Research Council.

The co-investigator of the project was freelance librarian Linda Hale. Brian Owen, formerly with UBC, was project consultant.

# UN appoints Oberlander

Dr. Peter Oberlander, a UBC professor of regional planning, has been appointed to the Canadian delegation for the 11th session of the United Nations Commission on Human Settlements. The session, which will be held in New Delhi on April 6, will focus on activities carried out during the International Year of Shelter for the Homeless, and participants will recommend further international action.

Dr. Oberlander will report on a two-year study carried out on homelessness in Canada.

Photo by Warren Schmidt

A team of second and third-year UBC law students were winners of an annual Moot Competition against the University of Victoria in Vancouver, Feb. 6. Pictured with faculty advisor John Horn are team members Will Westeringh, Rick Mullau, Wolfgang Rao, Nuala Cavelti, Christiane Hile, Peter Roberts, Simmi Dhami, Bev Elingson, Lena Del Santo, Stuart Rennie, Geoff Dabbs and David Christian.

# PRESIDENT'S TASK FORCE ON LIAISON, RECRUITING AND ADMISSIONS -- Subcommittee report on Advanced Placement and International Baccalaureate Programs

## March, 1988

**INTRODUCTION**

In May, 1987, on behalf of the President's Task Force on Liaison, Recruiting and Admissions, 21 departments were surveyed. The purpose of the survey was:

- to obtain from each department its evaluation of AP and/or IB course syllabus, examination, and examination process within the context of existing policy whereby departments may grant advanced placement only.

- to obtain from each department a similar evaluation, but within a hypothetical context in which an enabling policy allowed departments the option of granting advanced placement, advanced credit or neither.

- to obtain the information in a manner that ensured that the data obtained were comparable, comprehensive, and could be summarized: 1) to inform students; and 2) to inform Senate committees and Senate which is ultimately responsible for developing academic policies.

In August and September, 1987, individual members of the Task Force attended the IB conference in Victoria and the AP conference in Kelowna. These conferences afforded direct input regarding the programs from both the administrators and the teachers involved. Considerable dedication was evident in the development of curricula and consistent standards and thoroughness of the grading practices. Graduates of these programs are held in high esteem by many of the outstanding institutions in North America. Aggressive recruitment is particularly evident throughout the University of California where, in addition to advanced placement and credit, additional grade points for such courses are added to the student record to determine admissibility. Berkeley alone received 7,600 AP transcripts for applicants for admission in 1986.

Discussion and Recommendation (Placement)

Attached are two data summaries, one for AP and the other for IB listing the departmental responses in a form which could be considered appropriate for students. Responses were received from each of the 21 departments surveyed and it will be seen that departments were virtually unanimous in their willingness to grant advanced placement (exemption) for a student who achieved a high level of performance provided that an equivalent course was deemed to exist.

In the IB program, a grade of 6 or 7 on the seven-point scale achieved on the Higher Level (HL) course would satisfy all departments with the caveat that English would require the student to write the exemption examination held during registration week. Music and Latin would determine the appropriate placement on an individual basis, whereas an evaluation of the laboratory component on an individual basis seems desirable in some laboratory sciences. Finally, several departments would be willing to accept grades of 4 or 5.

Similar responses were given for the AP program where a grade of 4 or 5 on a five-point scale was considered the appropriate level of achievement. Again English would require students to write their exemption examination.

**Recommendation 1:** The subcommittee wishes to recommend that the Task Force endorse the principle that departmental policies with regard to exemptions and advanced placement for IB/AP courses be publicized to the schools and included in the Admissions Guide. It is our understanding that this in no way violates current University policy.

Discussion and Recommendation (Credit)

Here it is important to note that the questionnaire did not force departments to choose between existing policy and an enabling policy. Rather, departments were provided with a number of options and allowed to choose a single response or a combination of responses. For example, a department by its responses might indicate that, if policy allowed, it would choose to grant credit, but only after re-evaluating the material with the purpose of defining specific conditions under which credit would be granted.

12 departments indicated their preference by a single response:

| Response | # | % |
|---|---|---|
| advanced placement indefinitely | 3 | 14% |
| grant credit under conditions specified | 5 | 24% |
| grant placement & monitor granting credit | 2 | 9% |
| * endorse concept of granting credit | 2 | 9% |

*(These departments had no equivalent courses at present in either AP or IB.)

An additional eight departments responded with combinations of at least two of the following responses:

- Re-evaluate before granting credit
- Grant credit under conditions as specified
- Grant placement and monitor before granting credit.

Further, there was one department which responded negatively to both placement and credit in part because the specific course evaluated was not considered equivalent to the 100 level course offered within the department. However, the comments from the department respondent also indicated that:

- the material submitted was difficult to assess
- the course seemed to lack depth
- the department was not familiar with text used

In interpreting the results with the intent of informing the discussions related to the development of policy options it is possible to state that of the 21 departments responding only four indicated by single response, or by negative response plus comments, that they were opposed to granting credit in their discipline. Two of these departments, including the department whose response was outlined in the preceding paragraph, indicated a more generalized disagreement with the concept of granting university credit for work completed in high school.

A large majority of students who receive advanced credit at other institutions do not use these units to reduce their load, but rather seek to enrich their program. There is, however, another group who will really benefit from the opportunity, namely those students for whom a part-time job is an economic necessity to continue their education. Some students, if they are motivated to obtain advanced credit, are both more likely to afford a higher education and more likely to have the time to properly benefit from their program. The subcommittee believes it is important for UBC to be able to recognize outstanding performance in these enriched programs through the granting of credit. A high percentage of other outstanding institutions in North America do grant credit, and in a sense this can be regarded as a form of "entrance scholarship" recognition for the best-prepared incoming students. The granting of credit requires a change in present UBC practice.

There remains the question as to the level of achievement that should be accorded credit. Departments have, for the most part, indicated a willingness to grant credit for the same level as they would require for advanced placement. The grade distributions for the May 1987 Advanced Placement Program Examinations are attached and it may be seen that the mean grade was 3.08 with 13.8% of the students achieving a grade of 5 and 21.7% achieving a grade of 4 in an examination. Thus the granting of advanced credit for a 4 or above would select the top 35.5% of the students who have been allowed to participate in this select program.

**Recommendation 2:** The subcommittee recommends that the Task Force endorse the concept of credit for an appropriate level of achievement in IB/AP courses taken prior to high school graduation.

Accordingly the subcommittee recommends that the Task Force submit this recommendation to Senate through the appropriate channels. In the event that Senate approves this recommendation, departments would be again canvassed for their decisions, which should then be disseminated along with the placement information.

**CONCLUDING COMMENT**

It is important to emphasize that consultation with one or more departmental advisors should be encouraged before a student opts for advanced placement and/or credit. It is also understood that departments are expected to monitor the progress of students receiving advanced placement in order to refine their policy in the light of experience.

Respectfully submitted,
Members of the subcommittee
on AP and IB Programs

**MEMORANDUM**
**Nov. 5, 1987**

**TO:** Dr. David W. Strangway, President and Chairman of Senate

**FROM:** Daniel R. Birch, Chairman President's Task Force on Liaison, Recruiting and Admissions

**RE: ADVANCED CREDIT FOR ADVANCED PLACEMENT AND INTERNATIONAL BACCALAUREATE COURSES**

As a result of extensive study within the Task Force and the canvassing of departments, we have moved to collate information on existing departmental policies with regard to exemptions and advanced placement for IB/AP courses and to ensure that it be publicized to the schools and included in the Admissions Guide. This falls within current University policy.

We are forwarding the following recommendation for Senate consideration with the expectation that it will be referred to the Senate Admissions Committee and that the Senate Admissions Committee will consult with Faculties. It is our hope that the matter can be placed before Senate for action early in the new year.

## Recommendation:

That Senate approve the granting of credit for an appropriate level of achievement in Advanced Placement and International Baccalaureate courses taken prior to high school graduation and that responsibility for the assessment of the appropriateness of a course and the level of achievement required for credit be determined by the department concerned.

NOTE: The Task Force obtained information and material about AP and IB from the organizations concerned, surveyed departments, consulted other institutions and sent representatives to a regional conference. Documentation is available for review by members of Senate and other interested parties.

**ADVANCED PLACEMENT PROGRAM (AP)**
**AND INTERNATIONAL BACCALAUREATE (IB)**

**PROGRAM DESCRIPTION**

## Advanced Placement

The Advanced Placement program has been operating in the United States for more than half a century as a means of challenging the academically able and highly motivated high school student. The program is governed by the participating universities including many of the more prestigious state and independent universities. The course content and the exams are set by representatives of those institutions. Exams are also graded by university and school representatives under the aegis of ETS, the Educational Testing Service of Princeton, New Jersey. Each participating university (including Berkeley, Harvard and Michigan, for example) chooses the courses and the level of achievement for which it will grant advanced standing. Harvard allows a high school student with a grade of 4 on three AP courses to enter directly into the sophomore year of its B.A. and B.Sc. programs.

## International Baccalaureate

The International Baccalaureate program has been operating internationally for twenty years. Similar to the AP program, it is a rigorous course of study, leading to a fixed schedule of examinations that is intended to challenge academically gifted and highly motivated high school students. The program is governed and administered by a Council of Foundation headquartered in Geneva. The Council includes representatives of national governments, heads of IB schools, and ad personam representatives of several countries. The Examination Office, located at the University of Bath, administers setting and assessing of all examinations by a Board of Chief Examiners working in committees comprised of experts in each discipline from the many nations who participate in the IB programs. The acceptance of the IB program and the IB Diploma as a recognized credential for university entrance, advanced placement and advanced credit is firmly established. For example, students who complete the IB Diploma and obtain 6 or 7 on three higher level subjects are eligible for sophomore standing at Harvard. Similarly, Yale awards two acceleration credits (equivalent to two Yale courses) to students who receive 6 or 7 on the higher level examinations.

**THE CHANGING ENVIRONMENT**

## Provincially

In recent years the British Columbia Ministry of Education has provided designated funding to school districts for special education programs including those for the gifted and academically motivated. This is no doubt a factor in the rapid growth of Advanced Placement and International Baccalaureate programs in British Columbia. This year, approximately 800 British Columbia secondary school students are writing AP and IB examinations.

The success of students enrolled in these programs is exemplified by the fact that twelve students in either AP or IB programs in one British Columbia school district (S.D. 23, Central Okanagan) received scholarships totalling $169,000 to attend McGill, Carleton, S.F.U., U. of Victoria, U.B.C. and Harvard.

## University of British Columbia

In the past, as the number of students writing AP of IB examinations was limited, it was possible to respond individually to students requesting either advanced placement or advanced credit for AP and/or IB courses. It was also reasonable to assume that the majority of these students would remain in British Columbia and would seek admission to the University of British Columbia.

However, the investigations by the Task Force on Liaison, Recruiting and Admissions reveal that:

(1) The IB and AP students, in British Columbia and across Canada, are being actively and successfully recruited by class one research universities both in Canada and in the U.S. (U. of T., McGill, U. California - Berkeley, U. California - Los Angeles, U. of Michigan - Ann Arbor, Harvard, Yale, Cornell, Stanford, Princeton, Duke, M.I.T.).

(2) The ability of the University of British Columbia to continue to attract these students is, in part, dependent on a clearly stated and consistently applied policy which informs prospective students, preferably before they apply to the University of British Columbia, how their AP and IB achievement will be evaluated with respect to advanced placement and/or advanced credit.

**THE COLLEGE BOARD** **THE ADVANCED PLACEMENT PROGRAM**

MAY 1987 GRADE DISTRIBUTIONS - ALL SUBJECTS
ADVANCED PLACEMENT EXAMINATIONS

| A.P. Grade | No. of Cases | % at Each Grade |
|---|---|---|
| 5 | 50,953 | 13.8 |
| 4 | 80,149 | 21.7 |
| 3 | 118,760 | 32.2 |
| 2 | 86,583 | 23.5 |
| 1 | 32,611 | 8.8 |
| Total | 369,056 | |

**1987 Mean Grade - 3.08**

| | | | |
|---|---|---|---|
| 1986 | 3.1 | 1978 | 3.16 |
| 1984 | 3.12 | 1976 | 3.11 |
| 1982 | 3.12 | 1974 | 2.99 |
| 1980 | 3.12 | 1972 | 2.98 |

**MEMORANDUM**
**Nov. 5, 1987**

**TO:** Dr. David W. Strangway,President

**FROM:** Daniel R. Birch, Chairman President's Task Force on Liaison, Recruiting and Admissions

**RE:** Concurrent Enrolment Policy for UBC

Occasionally a department allows a student to enrol in a specific university course while still enrolled in secondary school. Such a request is handled on an individual basis and the degree of formality varies. However, students permitted to take UBC courses are not granted credit on successful completion, nor are they granted advanced credit at the time of admission to UBC as undergraduate students.

The governing policy statement is found on page 14 of the 1987/88 Calendar (Senate Minutes, May 23, 1979, p. 7197):

Advanced credit is not given for subjects taken by an applicant prior to the applicant's graduation from secondary school. However, advanced placement may be give where appropriate. These provisions apply to appropriate subjects with high academic achievement on the Advanced Level (G.C.E.), Principal Level (H.S.C.) or Higher Level (I.B.).

Except in special circumstances no student under the age of sixteen is admitted.

As a result of a review of policies in other universities and extensive discussion within the Task Force, we are forwarding the attached recommendation for consideration by Senate. I will move its adoption with the expectation that Senate will refer it to the Senate Admissions Committee for consultation with the Faculties. We would hope that it could be placed before Senate for action early enough for inclusion in the 1988/89 Calendar

It is our expectation that the recommendation will be referred to the Senate Admissions Committee and the Senate Admissions Committee may consult with Faculties. We would hope that the matter can be placed before Senate for action early in 1988.

## Recommendation:

That limited numbers of gifted students who are enrolled in grade eleven or twelve in a B.C. secondary school be admitted to the University to pursue "Concurrent Studies" as unclassified students. Such students will be given the opportunity to complete a course or courses prior to secondary school graduation. Credit earned may later be applied towards an appropriate degree at the University of British Columbia.

The following conditions will apply:

The applicant must have a superior academic record.

The applicant must be enrolled in a B.C. secondary school at the grade eleven or twelve level, in a programme that meets regular U.B.C. entry requirements.

The applicant must have the written recommendation of the secondary school Principal.

The applicant must have the written consent of the parent or legal guardian if under the legal age of majority on the opening day of classes.

The applicant must have the support of the Dean of the Faculty for the courses in which he/she plans to enroll.

Admission will generally be limited to one academic session, however, this may be renewable with the continued support of the school Principal and the faculty Dean.

Students in Concurrent Studies will be treated as regular students in most respects except that they may not register in a full range of courses and their eligibility to register is valid for one academic session only (unless renewed as per above). Standard transcripts will be issued and fees and deadlines will be as for regular students.

The above policy will also apply to students who have enrolled in Concurrent Studies at recognized post-secondary institutions prior to secondary school graduation. Such students may be considered for recognized transfer credit towards a degree programme subject to degree requirements within the Faculties.

# Helping cultural groups to sell

**by Jo Moss**

The recent folding of the Vancouver Symphony Orchestra illustrates a problem all cultural institutions face—how to sell what they do best to the public while preserving their artistic integrity.

Commerce professor Robert Kelly is in the business of helping cultural institutions marry marketing with artistic integrity. He's currently working with the Director of the new Canadian Museum of Civilization in Ottawa—a $200 million project scheduled to open in the spring next year—to do just that.

Kelly said museums must shed their elitist image and work to attract a much wider variety of potential visitors, not just the small number who are already knowledgeable about art or artifacts.

According to Kelly, many people enjoy going to museums to socialize: to see and be seen.

"You have to make people feel it's legitimate to do that," he said. "At the same time you want to help them understand and appreciate what makes our national treasures important, and what is unique about a museum."

Kelly advocates bringing art and artifacts to life by staging events like ethnic theatre, dance, or totem pole raising ceremonies. Restaurants and shops right in the museum can also play a large part in attracting visitors and making the visit enjoyable and meaningful, he said.

"Many people initially just want to experience the ambience of a place," he said. "Eventually, they may come to appreciate the content as well as the context of the art; but they first have to be attracted if that is ever to happen. You don't want to make art 'showbiz', but there is much we can learn from places like Disneyland and Expo."

Kelly's methods may seem radical to traditionalists, but he's convinced cultural institutions must use them to survive. He admits they are difficult to put in place.

Director of the Museum of Anthropology Michael Ames agreed. He said popularizing art creates a dilemma for art administrators.

"It's a delicate balancing act,"he said. "How do you stage public events to get the occasional visitors to come more often, without losing your regular supporters who like the peace and quiet of a traditional museum?"

The MOA is aggressive in its public programming to keep its visitor numbers high.

"We have probably done more of these kinds of events more systematically than most institutions," Ames said.

Kelly's initial studies of museum visitors began at the MOA five years ago. He was surprised to find that one third of the people who arrived on bus tours never set foot in the museum galleries at all.

"They went right into the gift shop, looked around, maybe bought something, but never went farther than the lobby," Kelly said.

# Letters

Editor,

I was surprised to see in your February 25 article "Commitment made to Equity Plan" several references to 'handicapped' people.

The term preferred by the target group and recommended by the Federal Government is 'disabled persons' or better still, 'persons with disabilities.'

As former Communications Chairman of the Federal Government's Year of Disabled Persons Organizing Committee, my fellow members and I worked hard to educate Canadians about the difference between the two terms. The first is concerned with barriers, - attitudinal, systemic, architectural and environmental; the second describes physical, mental or other conditions which bring about a dysfunction.

I am certain that the intention of the Federal Government's Equity Program which the University is now embracing, is - among other things, to provide increased employment opportunities for disabled persons, which will lead to the overcoming of several handicaps. One of the first moves in the right direction, would be to get the terminology right.

Very truly yours,

Paul E. Thiele,
Librarian and Head

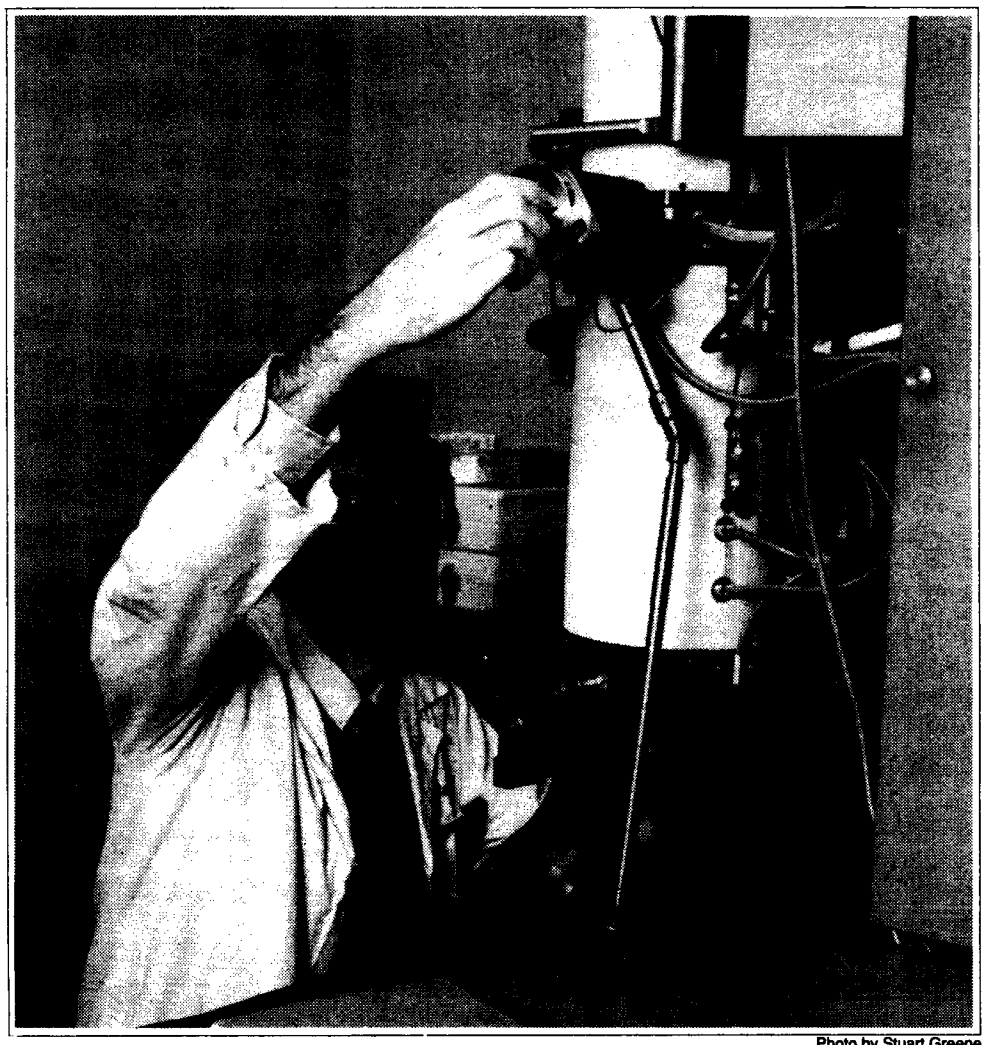

Photo by Stuart Greene

Dr. David Walker is using an electron microscope at St. Paul's hospital to study the structure of single cells. The B.C. Lung Association is supporting lung disease research at UBC with a $241,000 grant to help Dr. Walker's work.

# Bible edges Tolkien as campus favorite

**By Gavin Wilson**

What's the best-loved book on campus? According to a survey conducted by the UBC bookstore — it's the Bible.

The Bible narrowly edged out J.R.R. Tolkien's Lord of the Rings for top spot in a survey conducted by the bookstore to mark Literacy Day in Canada.

More than 200 people nominated their favorite books, and their opinions reflect a broad cross-section of the campus community, said bookstore employee Jennifer Pike.

"Staff members said that all different types of people stopped to put their votes in — they were all ages," she said.

Jane Austen proved to be the most popular author, placing two novels, Pride and Prejudice and Emma, high on the list.

Anne of Green Gables was the Canadian favorite. Timothy Findley's Not Wanted on the Voyage was the only other Canadian work to receive more than one vote.

In all, 34 books received more than one nomination. Many were classics by Melville, Joyce, Conrad, Hemingway, Forster and Dostoyevsky. Other works were baby-boomer favorites such as Catcher in the Rye, On the Road and Catch 22.

But what caught Pike by surprise is the number of science fiction/fantasy novels that pepper the list.

Three books in this genre made the top ten, and four more received multiple votes, including the improbable Tom Swift and his Electric Speedboat.

"But I guess it's not all that surprising, really, when you consider the loyalty there is for books such as Lord of the Rings," said Pike.

Following is a partial list of titles which recived more than one nomination. A total of 161 other books received single votes.

The Bible
Lord of the Rings - J.R.R. Tolkien
The Razor's Edge - W. Somerset Maugham
Pride and Prejudice - Jane Austen
Women in Love - D.H. Lawrence
Dune Trilogy - Frank Herbert
Brothers Karamazov - Fyodor Dostoyevsky
The Bone People - Keri Hulme
The Sun Also Rises - Ernest Hemingway
Hitchhiker's Guide to the Galaxy - Douglas Adams
To Kill a Mockingbird - Harper Lee
Chronicles of Narnia - C.S. Lewis
Grapes of Wrath - John Steinbeck
Anne of Green Gables - L.M. Montgomery
Emma - Jane Austen
Foundation Trilogy - Isaac Asimov
House of the Spirits - Isabel Allende
Hunger - Knut Hamsun
Clan of the Cave Bear - Jean Auel
Book of Laughter and Forgetting - Milan Kundera

# *Work study program benefits both students and faculty*

**by Lorie Chortyk**

Most evenings you'll find Marielle Geoffroy, a student in the Faculty of Education's French Immersion Program, in the Buchanan Building developing new materials for continuing education language programs.

Her salary is paid through the Work Study Program, a component of the provincial government's student aid package. This year, the university received more than $900,000 from the government and added an additional $125,000 to provide jobs for 750 students.

The jobs range from clerical work to the rather specialized position of "starfish morphogenesis technician", as one application read.

Judith Plessis, coordinator of Language Programs and Services for the Centre for Continuing Education, has been using work study students for the past two years. In addition to Marielle, she is supervising nine other students this year.

"The program allows us to develop new curriculum and promotional materials that we just wouldn't otherwise have the resources for," she said. "Our language instructors are part-time staff who come in in the evenings to teach, so they don't have time for special projects.

"With work study students we're able to offer better programs for the public."

For Marielle, the placement provides valuable hands-on training in her chosen field.

"There's a lot of creativity and freedom in the work and I'm learning to take responsibility for projects and make decisions based on my training."

Bryon Hender, director of UBC's Awards Office, said the number of students participating in work-study has grown astronomically since the program was introduced on campus in 1978.

"It's the kind of program that benefits everyone," he said. "Students who have a demonstrated financial need are able to earn money and build up career experience, and faculty are able to carry out new projects."

Students work an average of six hours per week, with an average overall salary of $1,350. When students apply for the program they're given authorization to earn up to a specified limit, ranging from $500 to $2,000, depending on financial need.

Hender said both faculty and students seem pleased with the program, and in several cases he's heard from students who gained full-time employment as a result of the work-study experience.

# *Korea, UBC sign research pact*

**by Jo Moss**

UBC's Faculty of Commerce and Korea's most powerful business group have signed a unique research agreement which may provide the basis for improved trade between Korea and Canada.

The three-year pact with the Korean Economic Research Institute (KERI), the research arm of the Federation of Korean Industries (FKI), provides for the mutual exchange of research ideas, experts, information and data.

"It was undertaken with a view to promote joint research and collaborate on research topics of mutual interest," said Ilan Vertinsky, director of UBC's Centre for International Business Studies.

"It's an important agreement because we need to understand each other's business culture, economic structure, industry and markets to reduce future conflict in the trade arena," said Korean-born Commerce professor Tae Oum who will be one of the first researchers to take advantage of the agreement.

Oum and Vertinsky visited Seoul last October to meet with representatives of government, research and industry organizations, including Vice-Chairman of FKI and other business leaders.

FKI encompasses virtually all the major multi-national businesses in Korea, Vertinsky said. Products range from textiles, toys and footwear to automobiles, ship building and electronics.

Collaborative research will put Canada and Korea in a better position to determine what their future roles will be in the Pacific Rim market, Oum said.

"Up until recently, Canada hasn't been able to compete with Korean products because their labour costs have been much lower than ours," he explained.

But Korean wages have risen steadily reducing the gap of production costs in some manufactured goods. And Korea's exports now include cars and consumer electronics—computers, video recorders, televisions and radios—products which compete directly with Canadian exports in a market dominated by Japan, the U.S.A. and the European Economic Community.

"Given that there will be increased competition in the future, we must adapt to a new market," Oum said. Oum predicts it will take six months to develop a mutual research project list. KERI, which has about 50 full-time researchers, will incorporate Korean university scientists as needed to carry out the studies. UBC will draw on faculty experts in different departments.

One of the projects UBC has proposed is a comparative productivity analysis of various Canadian and Korean industry sectors.

"Korea could become a major market for Canadian forest products and mining products," Oum said.

# CIAA membership recommended

**by Lorie Chortyk**

If you've ever wanted a better understanding of events happening around the world than you get from the evening news, geological sciences professor Harry Warren recommends a membership in the Canadian Institute for International Affairs.

The national organization, formed in 1928, brings together members of the business community, government, universities, media and the public who want to know more about Canada's role in international events. The institute sponsors talks with top Canadian civil servants and ambassadors from others nations, study trips to countries where international news is breaking, on-going research and publications programs and regular conferences.

Warren, a long-time member of the CIIA, said that in recent years membership has been largely from the private sector, with only nine members from UBC. He would like to see more interest from the university community.

"Current affairs touch everyone," he said. "Whether it's famine in Ethiopia, civil strife in Central America or arms control talks between the superpowers, Canadians are affected and I think we should try and understand the issues as best we can."

Warren said the organization also provides opportunities for students and faculty to develop contacts with representatives from business and government.

More information on the CIIA is available from Dr. Warren at 228-3139. For a membership application, write to Elizabeth Murchie, #5-5565 Oak Street, Vancouver, B.C., V6M 2V5.

Photo by Warren Schmidt

*Victor Lo has found a new way to treat pig waste that is efficient, reliable and cheap*

# Discovered: The answer to pig farmers' prayers

**by Jo Moss**

Canadian pig farmers can thank a UBC bio-resource engineering professor for solving one of their biggest headaches—what to do with the waste 2,000 pigs produce.

At least 100 times stronger than domestic sewage, pig waste is difficult to dispose of because current agricultural treatment processes don't remove all the pollutants. Some farmers release the waste on their land, but most don't have enough land to handle it.

An average swine operation in B.C. has 200 sows from farrow to finish which turn out 4,000 pigs a year. That's about 12,000 litres of waste produced daily.

Victor Lo has developed an agricultural waste treatment process that's the answer to a pig farmer's prayers. Easy to install, and relatively cheap, it's more efficient and reliable than any other treatment process in use.

"It's an integrated system that has proved very successful in our pilot plant operations," Lo said. "As far as we know, we are the first in North America to use this kind of reactor treatment for agricultural waste."

China, Puerto Rico and a number of other countries in Europe and Southeast Asia have already expressed interest in the reactor treatment.

The treatment process removes 98 per cent of the environmental pollutants. That makes the end product almost pure water, Lo said.

"It can be sprayed directly on agricultural land or discharged directly into an ocean or river."

More than 100,000 Canadian swine producers stand to benefit from the new process, and Lo said it can easily be applied to dairy or poultry operations. It's currently being tested on a swine operation in Aldergrove and a Langley dairy farm.

The Aldergrove reactor treatment processes about 8,000 litres of waste at one time. It's made up of a manure holding tank and a second-stage process of three sequencing batch reactors which operate in a series. Each reactor stands 16 feet tall and six feet wide. Lo estimates the system cost $20,000.

The entire integrated treatment cycle takes between four and eight days, a far cry from other treatments processes which may take up to 20 days—and don't generate a pollution-free product.

Because the system is efficient, a small waste treatment reactor can handle a large amount of waste. That makes it adaptable to any size of swine operation. The reactor design could be available on a limited commercial basis by the end of 1988, Lo said.

## *Stress study*

# Women coping better

**by Lorie Chortyk**

For women in executive and management positions the pressure to work longer and harder than their male counterparts is still a reality of the workplace.

But surprisingly, female executives are still less likely to suffer from coronary disease and other stress-related illnesses than men.

"I think women tend to deal with stress more openly and effectively than men," said Dr. Bonnie Long of UBC's Counselling Psychology Department. "They share their concerns and problems with others rather than keeping them inside, so the physical effects of tension are reduced."

She and colleague Dr. Sharon Kahn are studying how executive women in traditionally male occupations experience and cope with stress.

"It's an interesting group to study because their experience in the workplace is unique," said Long. "These women are a minority group — only 13 per cent of all top managers in Canada are female. In addition to the usual pressures of the job they often face discrimination, harrassment, and conflicts between the demands of family and work."

Janet Fraser, executive assistant to Vancouver Mayor Gordon Campbell, agrees that women experience more pressure than their male counterparts.

"Women are still regarded as the primary caregivers in society in addition to their position in the workplace. Even if a woman's been at work for 14 hours, she's still the one responsible for the Christmas thank-you note to Aunt Sarah or knowing which of the kids hasn't had their teeth checked for six months."

Fraser adds that women, still somewhat of a novelty in upper management positions, often feel the pressure of being a role model.

"There's always the feeling of being observed, of having to be your absolute best 100 per cent of the time," she said. "I don't think men necessarily experience that pressure."

Doctors Kahn and Long are studying three sets of 100 women executives in their two-year study. The researchers first measure and record factors such as personality traits, gender role attitudes, marital and parental status and age of the women, and then conduct monthly interviews for six months to identify events the women found stressful and how they dealt with them.

"We're looking for links between certain personality traits or environmental factors and methods of coping with stress," said Kahn. "We can then use this information to help women either change stressful situations or modify their reaction to them."

Kahn said that despite being in good physical health, women in general report higher levels of depression and anxiety than men.

"But we don't know whether this is because men experience stress differently or if they're just not as willing to admit it."

Kahn and Long are looking for 100 women executives to take part in phase three of their study which begins in the summer. The study is open to women of any age who hold management positions in fields other than teaching or nursing. Participation involves six one-hour interviews and a follow-up after one year. If you'd like to volunteer, contact Sandi McLuckie at 734-8258.

# *UBC to pay for insurance*

UBC employees who require additional insurance to use their own vehicles on university business will be reimbursed to a limit of $125.

As a result of changes to ICBC regulations, faculty and staff who drive their own vehicles more than 1,600 kilometres a year or four days each month must have business coverage.

Business coverage is required even for driving between university buildings on public roads.

Failure to have the proper coverage will invalidate your policy in the event of an accident while on university business.

Employees should check with their supervisor, then arrange appropriate coverage.

# First translated book available

The first UBC Press book to be translated into a foreign language will soon be available in book stores in Japan.

Journeys to the Japanese 1952-1979 by Morton and Lucia White, published by the University of British Columbia Press in 1986, is being brought out by Shisaku Sha Publishers.

And the Japanese firm may purchase the translation rights to three more books published by UBC Press — Kewa Tales and Fabricated World: An Interpretation of Kewa Tales by anthropologist Dr. John LeRoy, and The Righteous Demon: A Study of Bali by Dr. Clifford Hospital. As well, an editor/translator from Beijing recently visited UBC to explore the possibility of translating UBC Press books into Chinese.

UBC Press Director Jim Anderson said he's delighted at the attention the Press is attracting in the international publishing world.

"We've been working to extend our market for several years now," he said. "When UBC Press started up 17 years ago it focused almost exclusively on Canadian studies and regional history. Recently we've expanded the range of our books to appeal to a much wider audience."

Anderson has also received letters of interest from European publishers. Guilio Einaudi Editor, a prestigious Italian publisher, recently approached Anderson about translation rights for a book by UBC Germanic Studies professor Marketa Goetz-Stankiewicz.

## *People*

# Smith awarded honorary science degree

The University of Guelph has awarded **Dr. Michael Smith** an honorary Doctor of Science degree, in recognition of his outstanding contributions through research and teaching in the field of biochemistry.

Smith, the director of UBC's biotechnology laboratory, accepted the degree earlier this month.

Next month, he will fly to the University of Kansas Medical Centre to be the Culpeper Visiting Professor. The lecturer is sponsored by the Charles E. Culpeper Foundation of New York for visiting professorships to medical schools.

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**Dr. David Hardwick**, Head of Pathology at UBC, has been elected vice-president of the U.S. and Canadian Academy of Pathology.

The 5,000-member Academy is the North American arm of the International Academy of Pathology.

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The Physiotherapy Association of B.C. has presented **Dr. Elizabeth Dean** with its 1988 Research Award.

Dr. Dean is an assistant professor in the School of Rehabilitation Medicine at UBC. Currently, she is studying patients with post-polio syndrome.

The award recognizes physiotherapists who have made outstanding contributions to the profession.

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Commerce professor **Michael Tretheway** was invited to Geneva last month to present a paper to the UN on productivity in the Canadian pulp and paper industry.

Tretheway recently completed the first phase of the productivity study. He was invited to Geneva by a joint working party of the Food and Agricultural Organization's forestry commission and the Economic Commission for Europe's timber committee. Representatives from about 30 countries were present.

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The FAO/ECE working party deals with questions of global forest economics and statistics and is currently collating information for an international statistical data base.The Department of Geophysics and Astronomy will welcome three visiting lecturers, funded by a grant from the Amoco Canada Petroleum Company.

**Dr. Drummond Mathews** of Cambridge University is credited with publishing the first paper which calculates the rate of continental drift.

Professor **Syun-Ichi Akasofu** of the University of Alaska studies the behavior of aurora. He has been acclaimed for his model of magnetic substorms.

And, professor **Don Anderson** of the California Institute of Technology is recognized for his contributions to our knowledge of the earth, ranging from the surface to the inner core, and the structure of the planets.

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ARTIBISE

The Secretary of State has awarded a Citation for Citizenship to **Alan Artibise,** director of UBC's Community and Regional Planning Centre.

The citations, awarded this year for the first time, are also going out to 24 other individuals, businesses and community organizations which embody the best characteristics of Canadian citizenship. Four hundred groups and individuals were nominated.

The citation recognizes Artibise for his work in the promotion of the field of Canadian Studies. He is also well known for his work in Canadian history and urban affairs.

Artibise is currently president of the International Council for Canadian Studies, which includes 14 member-associations representing 21 countries around the world.

He is also past-president of the Association for Canadian Studies, a non-profit organization which seeks to promote a knowledge of Canada at the post-secondary level through teaching, research and publications.

The awards will be presented in Ottawa on April 21.

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PARSONS

Oceanographer **Dr. Tim Parsons** will receive the prestigious Oceanographical Society of Japan Prize for 1988, the first time the award has been given to a foreigner.

The award, which Parsons will receive in a ceremony in Tokyo April 4, recognizes the UBC oceanographer's studies of plankton and its role in marine ecology. His work is well known in Japan, where he was once invited to lecture in the Imperial Palace for Emperor Hirohito, who studies marine biology.

Parsons is also being acknowledged for another, perhaps related, honor.

The Institute for Scientific Information has found that one of his papers, published in the Journal of the Oceanographical Society of Japan in 1967, is one of the most frequently cited works in its field.

He has been invited to write a brief commentary on this work for publication in the Citation Classics section of Current Contents.

Three U.S. cigarette manufacturers are being sued for damages in a New Jersey federal district court and Commerce professor **Richard Pollay** was one of the expert witnesses for the prosecution.

Pollay, an advertising historian, recently gave testimony in a case that is being closely watched by the American media. It is the contribution and relevance of cigarette advertising that is the key issue in this civil suit.

To date, cigarette manufacturers have won every case brought against them by survivors of cancer victims. One of the consistent arguments for defense has been that smokers bear all the risks of their choice to smoke. There are currently more than 100 suits pending in the U.S.

Cipollone vs. Liggett involves the recent death of Rose Cipollone from lung cancer. A smoker for more than 40 years, she videotaped her court testimony before she died. Relatives and lawyers are suing the manufacturers of the brands she smoked: Liggett Groups Inc. (Chesterfield and L & M); Philip Morris Inc. (Virginia Slims and Parliament); and P. Lorillard Inc., (True).

Four and a half years in preparation, and with millions of dollars invested by both sides, Cipollone vs. Liggett began February 4.

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Theatre professor **Norman Young** has been reappointed as chairman of the Vancouver Civic Theatres Board, which operates the Orpheum, Queen Elizabeth and Playhouse Theatres. Young is also a member of the Museum Board and Archives Commission.

# UBC Calendar

## SUNDAY, MAR. 27

### UBC Community Concert Band

Sponsored by the Centre for Continuing Education and School of Music. Directed by Martin Berinbaum. Free. For information call 222-5254. Old Auditorium. 3:30-4:30 p.m.

## MONDAY, MAR. 28

### Biochemical Discussion Group Seminar

Nitrogen-regulated Transcription in Enteric Bacteria: A Procaryotic Regulatory System with Eucaryotic Features. Dr. Sidny Kustu, Bacteriology and Immunology, University of California, Berkeley. For information call 228-2376. Lecture Hall #4, IRC. 12:30 p.m.

### Chemistry Seminar

Computational Methods in Spin Dynamics. Professor J.S. Waugh, Chemistry, Massachusetts Institute of Technology. For information call 228-3266. Room 225, Chemistry Building. 2:30 p.m.

### Mechanical Engineering Seminar

Isothermal Dendritic Crystal Growth - A Space Flight Experiment. Professor M.E. Glicksman, John Todd Horton, Materials Engineering, Rensselaer Polytechnic Institute, Troy, New York. For information call 228-4350. Room 1215, Civil & Mechanical Engineering Building. 3:30 p.m.

### Biochemical Discussion Group Seminar

Regulation of Crystalline Gene Expression in the Eye Lens. Dr. Martin Breitman, Research Institute of Mount Sinai Hospital, Toronto. For information call 228-3027. Lecture Hall #4, IRC. 3:45 p.m.

### Astronomy Seminar

WIMPS. Dr. J. Faulkner, Lick Observatory, University of California, Santa Cruz. Coffee at 3:30 p.m. For information call 228-4134. Room 260, Geophysics & Astronomy Building. 4:00 p.m.

### Division of Preventive Medicine & Health Promotion

AIDS Education Programs in the Workplace. Jan Kotaska, Director, Nursing & Health, C.E., V.C.C. Free. For information call 228-2258. Room 253, James Mather Building. 4:00-5:30 p.m.

### Video Night

Sponsored by the Graduate Student Society. Midnight Cowboy & 2001 - a Space Odyssey. Free. For information call 228-3203. Fireside Lounge, Graduate Centre. 6:00 & 8:00 p.m.

## TUESDAY, MAR. 29

### Botany Seminar

Evidence of Dark Avoidance by Phototrophic Periphytic Diatoms in Lotic Systems. Dr. Max Bothwell, Limnological Research Division, National Hydrology Research Centre, Saskatoon, Saskatchewan. For information call 228-2133. Room 2000, Biological Sciences Building. 12:30 p.m.

### Biomembranes Discussion Group Seminar

Calcium Regulation of Pancreatic Secretion. Dr. Bob Dormer, College of Medicine, University of Wales. For information call 228-3027. Lecture Hall #5, IRC. 12:30-1:30 p.m.

### Chemistry Seminar

NMR Spectroscopy Below 1K. Professor J.S. Waugh, Chemistry, Massachusetts Institute of Technology. Coffee at 12:30 p.m. For information call 228-3266. Room 250, Chemistry Building. 1:00 p.m.

### Oceanography Seminar

Productivity Studies in the Mackenzie River/Beaufort Sea Estuary. Dr. T.R. Parsons, Oceanography. For information call 228-5210. Room 1465, Biological Sciences Building. 3:30 p.m.

### Statistics & Commerce Business Administration Seminar

Two Moments Suffice for Poisson Approximation: The Chen-Stein Method. Larry Goldstein, University of Southern California. Coffee at 3:45 p.m. For information call 228-3410. Room C102, Ponderosa Annex C. 4:00 p.m.

### Economics Seminar

Vector-Autoregressive Encompassing Tests. Eric Ghysels, Montreal. For information call 228-4608. Room 351, Brock Hall. 4:00-5:30 p.m.

### Our Common Future

Sponsored by the Environmental Interest Group. Towards Common Action - Proposals for Institutional and Legal Change. Mr. Andrew Thompson, Law. For information call 224-0299. Lecture Hall #2, IRC. 7:30-9:30 p.m.

### Humanities Lecture

Sponsored by the Centre for Continuing Education. Making Peace Within: An Evening with Virginia Satir. Virginia Satir, Family Therapist. $10 adults, $5 students. For information call 222-5261. Ballroom, SUB. 8:00 p.m.

## WEDNESDAY, MAR. 30

### Religious Studies Lecture

A Christian - Buddhist (Tibetan) Dialogue. Lama (Geshe) Lobsang Gyatso, Principal, Dalai Lama's Dharma College, India. For information call 228-3357 or 224-6094. Room D348, Buchanan. 10:30-11:20 a.m.

### Pharmacology & Therapeutics Seminar

Potassium Currents in Sensory Neurons. Igor Spigelman, Pharmacology & Therapeutics, Medicine. For information call 228-2575. Room 317, Basic Medical Sciences Building, Block "C". 12:00 noon.

### Noon-Hour Series

Sponsored by the School of Music. Philip Dent-Candelaria, guitar. Admission by donation. For information call 228-3113. Recital Hall, Music Building. 12:30 p.m.

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**UBC REPORTS March 24, 1988**

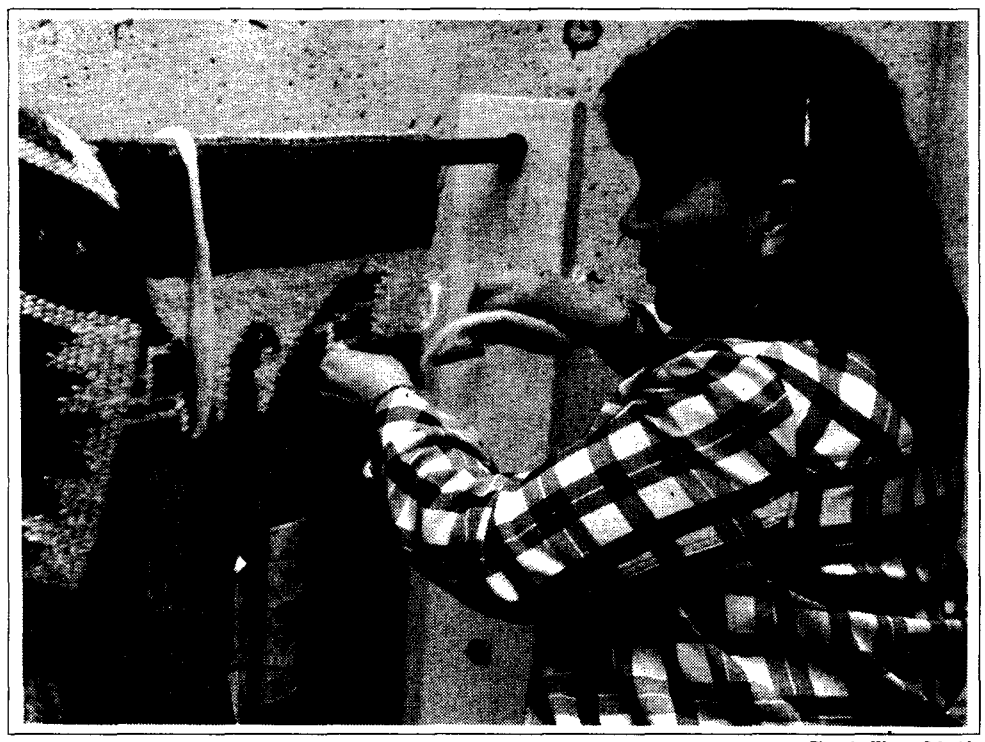

Photo by Warren Schmidt

Musqueam weaver Barbara Cayou offered demonstrations of traditional Coast Salish weaving at the Museum of Anthropology March 8 and 15. The technique dates back 3,000 years.

### Forestry Seminar

The Development of Kiln Schedules for Hem-Fir 4"X4" Baby-Squares. Dr. S. Avramidis, Forestry. For information call 228-2507 or 228-4166. Room 166, MacMillan Building. 12:30-1:30 p.m.

### Religious Studies Graduate Seminar

A Controversy between the Madhyamikas and the Yogacaras. Lama (Geshe) Lobsang Gyatso, Principal, Dalai Lama's Dharma College, India. For information call 228-3357 or 224-6094. Room E266, Buchanan. 2:30-5:00 p.m.

### Economics Seminar

Female Wage Growth in the United States: 1968-1983. Thomas A. Mroz, Hoover Institute & University of Chicago. For information call 228-3320. Room 351, Brock Hall. 4:00-5:30 p.m.

### Beer Garden

Sponsored by the Graduate Student Society. For information call 228-3203. Ballroom, Graduate Centre. 4:30-7:30 p.m.

### DJ Night

With Mary McAlister. Sponsored by the Graduate Student Society. Free. For information call 228-3203. Fireside Lounge, Graduate Centre. 7:00 p.m.-12:00 midnight.

### Faculty Concert Series

Sponsored by the School of Music. Roger Cole, oboe; Linda Lee Thomas, piano. Lecture at 7:30 p.m. $7 adults, $3 students/seniors. For information call 228-3113. Recital Hall, Music Building. 8:00 p.m.

### Guitar Duo Concert

Sponsored by Hispanic & Italian Studies. Music by Chueca, Mendelssohn, Stravinsky, Villa-Lobos, Chapi. Guillem Perez-Quer, Barcelona; Danielle Kassner, Toronto. For information call 228-6884. C362, Buchanan Building. 3:00-5:00 p.m.

### Applied Mathematics Seminar

Land-Use Change and Climate: Modelling and Monitoring Techniques. Dr. Graham Thomas, Geography. For information call 228-4584. Room 229, Mathematics Building. 3:45 p.m.

### Live Band

Featuring the FREE RADICALS. Sponsored by the Graduate Student Society. Free. Everyone Welcome. For information call 228-3203. Fireside Lounge, Graduate Centre. 8:00 p.m.-12:00 midnight.

## Holiday Calendar Deadlines

*For events in the period April 10 to April 23, notices must be submitted on proper Calendar forms no later than 4 p.m. on Wednesday, March 30 to the Community Relations Office, 6328 Memorial Road, Room 207, Old Administration Building. For more information, call 228-3131.*

### Ecology/Resource Ecology Seminar

Designing Implementable Natural Resource Management. Dr. Gordon Baskerville, Forestry, University of New Brunswick. For information call 228-4329. Room 2449, Biological Sciences Building. 4:30 p.m.

### Jazz Live

Sponsored by the Graduate Student Society. Cameron Chu, piano. Free. For information call 228-3203. Fireside Lounge, Graduate Centre. 5:30-8:00 p.m.

### Bridge

Sponsored by the Graduate Student Society. Beginners Welcome. For information call 228-3203. Fireside Lounge, Graduate Centre. 6:00 p.m.

### UBC Symphonic Wind Ensemble

Sponsored by the School of Music. Martin Berinbaum, director. Benefit Concert for the Vancouver Symphony Orchestra. Music by Vaughn-Williams, Creston, Bach and Strauss. $5 adults, $3 students/seniors. For information call 228-3113. Old Auditorium. 8:00 p.m.

## THURSDAY, MAR. 31

### Medical Grand Rounds

Cholesterol - Canadian Consensus Report Update. Dr. J. Frohlich, Director, Lipid Clinic, Shaugnessy Hospital. For information call 228-7737. Lecture Theatre Room G279, ,Acute Care Unit, HSCH. 12:00 noon.

### UBC Symphonic Wind Ensemble

Sponsored by the School of Music. Martin Berinbaum director. Benefit Concert for the Vancouver Symphony Orchestra. Music by Vaughn-Williams, Creston, Bach and Strauss. $5 adults, $3 students/seniors. For information call 228-3113. Old Auditorium. 12:30 p.m.

### Chemical Engineering Seminar

The Use of Variational Techniques in Spouted Bed Analysis. Dr. H. Littmann, Chemical Engineering, Rensselaer Polytechnic Institute, Troy, New York. For information call 228-3238. Room 206, Chemical Engineering Building. 3:30 p.m.

### GSS Annual General Meeting

All Graduate Student Society members are cordially invited to meet the new executive. For information call 228-3203. Dining Room, Graduate Centre. 4:00 p.m.

### Psychology Colloquium

Family Interactions in Attention Deficit and Hyperactive Children. Dr. Russell Barkley, University of Massachusettes Medical Center. For information call 228-2755. Room 2510, Kenny Building. 4:00 p.m.

### Physics Colloquium

Strange Matter. Dr. E. Farhi, M.I.T. For information call 228-3853. Room 201, Hennings Building. 4:00 p.m.

## SATURDAY, APR. 2

### B.C. Volleyball Association Jr. Championships

Sponsored by Athletics. For information call 228-2531. Osborne Gymnasium. 9:00 a.m.-6:00 p.m.

### UBC Rugby

UBC vs. Vancouver Rowing Club. For information call 228-2531. Thunderbird Stadium. 2:30 p.m.

## TUESDAY, APR. 5

### Chemistry Seminar

Biomedically Related Coordination Chemistry of Trivalent Non-Transition Metals. Professor Chris Orvig, Chemistry. Coffee at 12:30 p.m. For information call 228-3266. Room 250, Chemistry Building. 1:00 p.m.

### Oceanography Seminar

The Density Tide. Dr. David Griffin, Oceanography. For information call 228-5210. Room 1465, Biological Sciences Building. 3:30 p.m.

## WEDNESDAY, APR. 6

### UBC Medical and Scientific Equipment Show

Sponsored by the AMS in cooperation with the UBC Purchasing Department. Free. For information call 228-3456. SUB Ballroom and Partyroom. 10:00 a.m.-4:00 p.m.

### Geophysics Seminar

Brave New Tomography. Dr. Robert Stewart, Chair in Exploration Geophysics, Geology and Geophysics, University of Calgary. For information call 228-5406. Room 260, Geophysics and Astronomy Building. 4:00 p.m.

## THURSDAY, APR. 7

### UBC Medical and Scientific Equipment Show

Sponsored by the AMS in cooperation with the UBC Purchasing Department. Free. For information call 228-3456. SUB Ballroom and Partyroom. 10:00 a.m.-4:00 p.m.

### Biotechnology Laboratory Seminar

Application of Surface Thermodynamics to the Development of an Implantable Bioartificial Organ. Francis Lamberti, Chemical Engineering and Applied Chemistry, University of Toronto. For information call 228-4838. Lecture Hall #3, IRC, Woodward Biomedical Library. 4:00 p.m.

## FRIDAY, APR. 8

### Medical Genetics Seminar

Clinical Case Presentations. Clinical Geneticists, Clinical Genetics Unit, Grace Hospital. For information call 228-5311. Parentcraft Room, Main Floor, Grace Hospital, 4490 Oak Street, Vancouver. 1:00 p.m.

### Chemical Engineering Seminar

Coated Wired Glucose Sensor and Its Applications. Ms. S. Sharareh, Graduate Student, Chemical Engineering. For information call 228-3238. Room 206, Chemical Engineering Building. 3:30 p.m.

### Economics Seminar

Edgeworth Equilibrium and the Ramsey Optimum in the Theory of Contestable Markets. Hajime Miyazaki, Ohio S.U. For information call 228-4505. Room 351, Brock Hall. 4:00-5:30 p.m.

### Beer Garden

Sponsored by the Graduate Student Society. For information call 228-3203. Ballroom, Graduate Centre. 4:30-7:30 p.m.

### DJ Night

With Mary McAlister. Sponsored by the Graduate Student Society. Free. For information call 228-3203. Fireside Lounge, Graduate Centre. 7:00 p.m.-12:00 midnight.

## SATURDAY, APR. 9

### UBC Rugby

UBC vs. Loners. For information call 228-2531. Thunderbird Stadium. 2:30 p.m.

### Asian Studies Workshop

Sikh Literature: Language, Text and Transmission. For information call 228-3881. Room 604, Asian Centre.

## NOTICES

### Astronomy Lecture

The Lamps of Atlantis: An Astronomical Detective Story. Professor Archie Roy, Physics & Astronomy, University of Glasgow. Thursday, March 24th, 8:15 p.m.. Lecture Hall #2, IRC.

### Faculty & Staff Golf Tournament

April 28 at McLeery Golf Course to be followed by dinner at the Faculty Club. For registration forms and information call Norm Watt at 228-2581.

### UBC/Tennis Canada

April 8 (1:00 p.m.), 9 (12:00 Noon), 10 (11:00 a.m.). Davis Cup Tennis Tournament. American Zone Group 1 Playoffs: Canada vs. Chile. First Davis Cup playoff in Vancouver in 16 years. $38 Series tickets; $15 daily tickets. Available at all VTC/CBO outlets. For information call 280-4400. War Memorial Gymnasium

### Final Exams for Disabled Students

Disabled students requiring assistance with access to final exams or anticipating specialized problems, contact Jan del Valle, Co-ordinator of Services Disabled Students, at 228-4858. Room 200, Brock Hall.

### Arts Review '88

Sponsored by the Arts Undergrad Society. Accepting applications now at the A.U.S. Office, Buchanan A107. No hand written submissions. Include S.A.S.E. Deadline is May 1st. Prizes are for best poetry and fiction. For information call 228-4403.

### UBC Cricket Club

Sponsored by the Athletic Department. First practices of new season. For information call 266-0683 or 666-8059.

### UBC Bookstore

The last day for departmental requisitions (prior to inventory closure) at the University Central Supplies Department will be March 28, 1988. The Bookstore will be closed March 30 - April 4. The Bookstore will reopen 8:30 a.m. Tuesday, April 5.

### UBC Fine Arts Gallery

Now until March 31. Chinatown Interiors: 48 photographs by Pok-Chi Lau. Tuesday - Friday, 10:00 a.m.-5:00 p.m.; Saturday, noon-5:00 p.m. Main Library.

### Copying in the Libraries?

Save time and money with a UBC Library copy card. $5 cards sold in most libraries; $10, $20 or higher cards in Copy Service, Main or Woodward. Cash/Cheque/Departmental Requisition. For information call 228-2854.

### Badminton Club

Faculty, Staff & Graduate Student Badminton Club meets Tuesdays 8:30-10:30 p.m. and Fridays 7:30-9:30 p.m. Gym A, Robert Osborne Sports Centre. For information call 228-4025 or 731-9966.

### Psychology Research Study

Couples, aged 30-60, needed for research on effects of communication on bodily responses. Experiment conducted in UBC Psychology Department. Personal feedback and stress management information provided. For information call James Frankish at 734-2979. Kenny Building.

### Psychology Research Project

Families wanted for child development study. Mothers and their 3-6 yr. old children (2 boys or 2 girls) are urgently needed for a project studying sibling interaction. Approx. 1 hour. For information call Cindy Hardy at 228-6771 or 684-2142.

### Fitness Appraisal

Physical Education & Recreation, through the John M. Buchanan Fitness and Research Centre, is administering a physical fitness assessment program to students, faculty , staff and the general public. Approx. 1 hour. $25, students $20. For information call 228-3996.

### 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. For information call 228-4037. Forms for appointments available in Room 210, Ponderosa Annex C.

### Language Exchange Program

Exchanging Languages on a One-to-One Basis. For information call 228-5021. International House. Office Hours 9:30 a.m.-4:30 p.m.

### Walter Gage Toastmasters

Public speaking and leadership meeting, Wednesdays, 7:30-9:30 p.m. Guests are welcome to attend, ask questions, and participate. For information call Geoff Lowe at 261-7065. Room 215, SUB.

### M.Y. Williams Geological Museum

Open Monday - Friday, 8:30 a.m.-4:30 p.m.. The Collectors Shop is open Wednesdays 1:30-4:30 p.m. or by appointment. For information call 228-5586.

### Nitobe Memorial Garden

Open Monday to Friday, 10:00 a.m.-3:00 p.m. Free. Closed weekends.

### Botanical Garden

Open daily 10:00 a.m.-3:00 p.m. Free.