

# New high school curriculum draws criticism

By GAVIN WILSON

Two UBC faculties have voiced concerns about the Ministry of Education's proposed overhaul of the B.C. school curriculum.

Science department heads have warned that ministry plans will seriously hamper the studies of university-bound science students.

The Faculty of Education, meanwhile, is worried about how it will be able to train teachers qualified to teach the new curriculum, which calls for a greater integration of subject matter at all grade levels.

A resolution unanimously adopted by the 11 science heads said ministry plans to restructure the school system "will have severe immediate and long-range negative effects on education in science and technology, and will drastically undermine the province's economic growth in scientific and technological fields."

In their response to the Year 2000

ministry plan, science heads say high school graduates will be unable to meet the faculty's entrance requirements within the mandated 13 courses of Grades 11 and 12, although they will still meet minimum requirements for the university.

Associate Dean of Science John Sams, who coordinated the faculty's response to the scheme, said the ministry seems to be intent on dismantling a strong math and science program that is currently producing some of the best students in the country.

"B.C. has 45 per cent of Canada's top math students. We have to be doing something right," he said.

Under the Year 2000 program, four new mandatory courses would be added to Grades 11 and 12 — 100 hours of work experience, fine arts, practical arts and a science/technology/math/environment course that would not meet Science Faculty academic standards.

These additions to the core curriculum will restrict the number of academic courses students can take, critics say.

Mathematics Professor George Bluman, an organizer of the national Euclid math contest and a critic of the ministry plans, fears it will put in jeopardy the offering of Advanced Placement courses as well as courses such as Physics 12 in smaller schools.

"Especially in this day and age, why should a high school program aimed at university entrance impede students' ability to take academic courses?" Bluman said.

Sams said another concern is that ministry plans are vague, with few details of curriculum.

"We know what the titles of the courses are, but for the most part, we don't know what their content will be. It makes it difficult to offer recommendations," he said.

Sams also feels Year 2000 works against the recently announced intention of the Ministry of Advanced Education to increase the number of students enrolled in post-secondary degree programs by 15,000 in coming years.

The Faculty of Education's response, submitted by Dean Nancy Sheehan, said there are concerns Year 2000 does not address the issue of teacher education.

Programs at UBC and other universities have to reflect the Year 2000 framework, but there is not enough time to create the new courses and programs that will be required, the response said. As well, education faculties have not received any extra resources to make these changes.

"Faculties of Education are worried about their ability to respond appropriately to these requests and to develop and incorporate course and program changes in a short time period," the faculty response said.

While praising the ministry's attempts to lower high school dropout rates, the Education Faculty warned this should not be done at the expense of students who need a strong academic background for later post-secondary studies.

Too little time is allowed for concentration on specific subject areas and this could impede students from taking academic courses.

The response also said that Year 2000 places too much emphasis on integration of subject matter, especially in the higher grades.

"The last thing we need is a generation that can connect everything and discriminate nothing," the faculty response said.

## Better schools produce better students: study

By GAVIN WILSON

Choosing the right school can make a significant difference in your child's academic achievements, a study by UBC researchers has confirmed.

The study of mathematics skills in elementary school students also showed that the dictum that boys are better than girls at math is only half true. Many of them are worse.

Associate Professor Douglas Willms and doctoral candidate Suzanne Jacobsen of the Centre for Policy Studies in Education followed the progress of more than 1,000 students in 32 Lower Mainland elementary schools, analyzing sex differences and school effects in the growth in mathematics skills.

Their findings showed that by Grade 7 pupils who had attended the three top performing schools in the sample were on average one full grade level ahead of pupils with comparable initial ability who had attended the three lowest performing schools.

The study, to be published in an upcoming issue of the International Journal

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## Inside

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**COURTSHIP STUDIED:** UBC History Professor Peter Ward has explored the public side of courtship and marriage in Victorian English Canada. Page 6.

**CONTRACT DESIGNED:** Two forestry professors have designed a new lease contract for the forest industry to encourage forest renewal. Page 7.

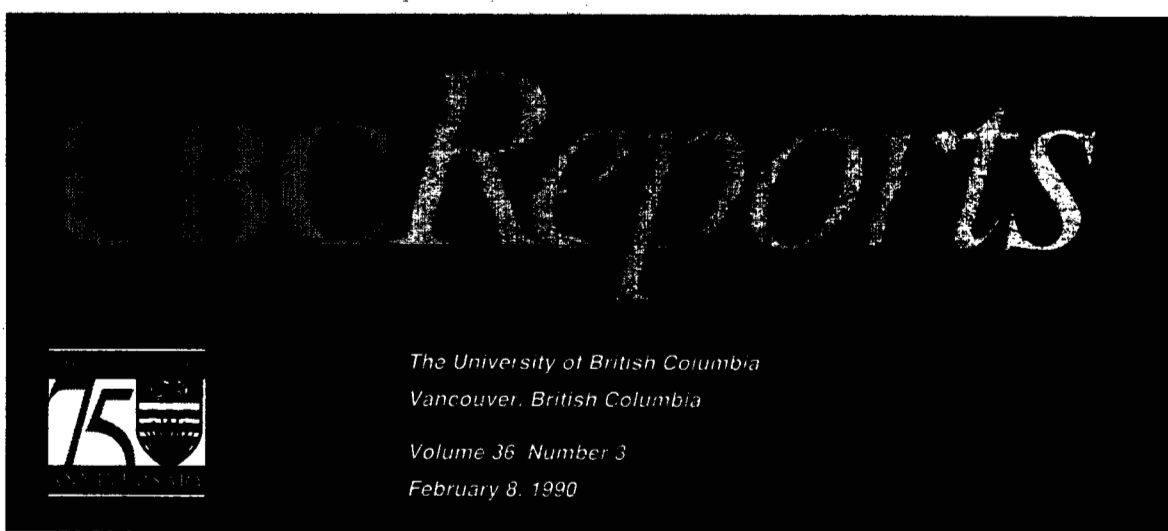


Photo by Media Services

Examining the papers of 19th century adventurer James Swan are, from left, George Brandak, UBC Library's manuscripts curator, Anne Yandke, head of special collections, historian Duncan Stacey and bookseller Stephen Lunsford.

# 19th century papers reveal life in Charlottes

By GAVIN WILSON

A new acquisition by the library's special collections division will provide scholars with a rare glimpse of life in 19th century Queen Charlotte Islands.

The library has purchased the documents of author and adventurer James Gilchrist Swan (1818-1900) who spent a quarter century gathering Native artifacts for the Smithsonian Institution.

"The Swan collection is a rich archival source that will be of interest to researchers in a number of disciplines," said manuscripts curator George Brandak.

Swan's papers deal with Native culture, the history of the Pacific Northwest fishing industry, Chinese immigration and the smuggling activities of the Russians and the Hudson's Bay Co.

The collection of notebooks, account books, maps, and about 6,000 letters fill five feet of shelf space. A prolific letter writer, he kept copies of his outgoing as well as incoming correspondence.

Unknown to researchers, this wealth of information has been stored in a basement in Portland, Ore. since Swan's death.

"After taking one look at this collection I realized how important it was," said Stephen Lunsford, the Vancouver book dealer who helped arrange the sale of the documents, worth \$71,700.

From his home in Port Townsend, Wash., Swan pursued diverse careers as a ship chandler, teacher, naturalist, admiralty lawyer, ethnologist, ichthyologist, artist, oyster entrepreneur, pilot commissioner, Hawaiian consul, author and judge.

He is best known for his book *The Northwest Coast*, considered to be the first major literary work to emerge from the Washington Territory.

Swan also wrote *The Haida Indians of Queen Charlotte's Islands*, based on his experiences during a series of seven trips he made among the coastal Natives collecting artifacts for the Smithsonian National Museum. He was not the first European to collect artifacts from the Haida, but no one before him collected so much or so systematically.

Brandak said Swan's exhaustive documentation of his purchases will provide invaluable records which could be used to verify and date artifacts or aid repatriation of art works by Native groups.

Swan also worked for the United States

Fish Commission from 1883 to 1886, investigating the North Pacific fishery and seal fur industry.

He settled in Washington state in 1852 and immediately took a strong interest in Native peoples, learning many of their languages and publishing a number of articles in the Smithsonian bulletins on their culture and the local fishery.

Scholars may have their first opportunity to use the materials as early as this summer, once they have been catalogued and stored, Brandak said.

Funding for the purchase of the collection was provided by the Movable Cultural Properties Office of the federal Department of Communications and the Rogers Fund of the Vancouver Foundation.

## Senate approves closing of Coal Research Centre

Senate has approved the closing of UBC's Coal Research Centre, an interdisciplinary unit within the Faculty of Graduate Studies.

"Coal research is a very vigorous ongoing activity at UBC, but the people who are involved in it are essentially pursuing their interests in their home departments. Therefore, there really is no need for a central, interdisciplinary unit," said Graduate Studies Dean Peter Suedfeld.

The centre was established in 1980 to promote the development of research and graduate training related to the use of coal

and to foster contact with industry and government coal research centres.

Chemical Engineering Professor Paul Watkinson, former director of the centre, said the departments of Chemical Engineering, Mining and Mineral Process Engineering, Metals and Materials Engineering and Geological Sciences will continue to conduct coal research.

"Some of our research groups are involved with other Canadian and international coal researchers," he said. "That work will continue."



Photo by Media Services

**Racing for charity**

Students participated in the third annual Science Week tricycle race to raise money for charity.

# Wall's photographs are exhibited at Vancouver gallery

By GAVIN WILSON

UBC Fine Arts Professor Jeff Wall, whose work is the subject of a major new exhibition at the Vancouver Art Gallery, has the unusual distinction of being compared to Wayne Gretzky and Glenn Gould, in — of all things — an art review in a major newspaper.

Like his famous countrymen, explained The Globe and Mail critic, Wall "is a Canadian whose performance has caught the attention and imagination of the world beyond this country's borders."

Now residents of Wall's hometown of Vancouver will have their chance to see why he is internationally recognized as one of contemporary art's most acclaimed photographers.

The VAG is mounting a new solo exhibition of 19 of Wall's enormous backlit color transparencies in the first in-depth survey of his work held in Canada. The exhibition runs until March 19.

Wall, who joined UBC in 1987 after leaving a teaching position at Simon Fraser University, has earned praise from around the world for his disturbing and enigmatic images that have been displayed in major galleries in Europe and the United States.

His photographs tower above viewers, and can be as wide as 10 feet. In studied, carefully constructed tableaux,

they reveal the backside of city life: evictions, streetside deals, portraits of alienation and frustration and the politics of personal, public and workplace relationships. The social experiences of children also figure prominently among Wall's subjects.

His photographs have been compared to the works of 18th century history painters, 19th century novelists and 20th century filmmakers.

## Preinsperg elected AMS president

UBC students have elected a new Alma Mater Society executive.

Kurt Preinsperg, a graduate student in philosophy is the new AMS president. Johanna Wickie, 1989 president of the Arts Undergraduate Society, is vice president; Roma Gopaul-Singh, secretary of the Student Administrative Commission, is director of administration; John Lipscomb, an MBA student and coordinator of the Student Environmental Centre, is director of finance; Jason Brett, Applied Science, is coordinator of external affairs.

In elections for student representatives to UBC's Board of Governors, Tim Bird has been re-elected for a second term. He is joined by new representative Dave Hill.

## Classified

Classified advertising can be purchased from Media Services. Phone 228-4775. Ads placed by faculty and staff cost \$6 per insertion for 35 words. Others are charged \$7. Monday, Feb. 12 at 4 p.m. is the deadline for the next issue of UBC Reports which appears on Thursday, Feb. 22. Deadline for the following edition on March 8 is 4 p.m. Monday, Feb. 26. All ads must be paid in advance in cash, by cheque or internal requisition.

### For Rent

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### Miscellaneous

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## Boys often in bottom ranks of math students

Continued from Page 1

of Educational Research, also looked at sex differences in three separate aspects of mathematics skills.

Although past studies emphasize that boys dominate the ranks of top math students, they often do not mention that boys also dominate the bottom end of the spectrum. Girls dominate the middle ground.

Willms and Jacobsen found that girls started Grade 3 with skills as good or better than boys, but fell behind in problem-solving and grasping mathematical concepts as they moved through the grades. Girls did, however, develop better computational skills as they progressed.

Boys varied more in the rate they acquired various skills. By the time they reached Grade 7, there were more boys with scores well above national norms, but also more boys with very low scores.

Willms and Jacobsen said their study was unique in Canada because it emphasized the students' progress in math skills over a four year span, rather than just taking a snapshot of abilities at a particular time.

They feel the results will be useful in designing curricula, writing textbooks, and helping teachers choose different methods of instructing students who are having problems with their math studies.

Funding for the study was provided by the Spencer Foundation and the U.K. Economic and Social Research Council.



### Letters to the Editor

## Students called

Editor:

In the Jan. 11 edition of UBC Reports, I was pleased to read that the University is finally taking steps to reduce waste and encourage recycling.

May I point out that the students are amongst the worst polluters. Every time I walk along University Boulevard, I notice a tremendous number of cars with only one person in each going to and from the campus. I also notice that these cars often follow buses no more than half full. Is not the exhaust from these cars considered a serious polluter of our air space?

Could not the University take steps to discourage the practice of one person, one car? The huge parking lots on campus with the capacity to hold thousands of cars only encourages students to drive to work.

Why not make parking so expensive that the drivers will be prevailed to take the public transport instead? Obviously, something drastic must be done to curb the constant stream of toxic exhaust that daily pollutes the air space.

Sincerely,  
A. Saunders

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**Protest**

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Several students protested against a proposed increase in tuition fees before a recent Board of Governors meeting.

## Tuition increase approved

UBC's Board of Governors has approved a 4.8 per cent tuition fee increase for 1990-91.

"The tuition increase is below the current rate of inflation, but will allow the university to come close to keeping pace with the rising costs it faces," said President David Strangway.

About 50 students protested outside the Jan. 25 board meeting, asking board members to "freeze the fees."

"I understand the concerns that have been raised by students, and I sympathize with their position," Strangway said. "But the university must recover a fair share of its operating expenses from those students for the education they receive."

Strangway said substantial financial resources are available to assist students in need.

"Nevertheless, the university will now review its entire range of student aid pro-

grams to ensure that qualified students are not denied an education for financial reasons alone."

The increase will apply to all students except those enrolling in first-year Forestry. Their fees will remain at \$1,884.

Students enrolling full time in first-year Arts or Science will pay \$1,680, up \$75. First-year Engineering students will pay \$2,175, up \$104.

## Business, academic leaders meet

Leaders from Canada's business and academic communities will meet at UBC Feb. 15 to formulate a better working partnership.

Quality Higher Education: A Requirement for Developing Companies is a one-day symposium sponsored by the Corporate-Higher Education Forum, an autonomous group which regularly brings presidents of business and universities together to examine issues of mutual concern.

"An international standard of research and graduate training is essential to support the creation and development of new companies, which in turn are critical to the growth of the Canadian economy", explained UBC President David Strang-

way, who is the host of the event. "We want to determine how universities are meeting those goals, and what could they be doing better."

The symposium will also examine issues affecting university graduates and human resources, such as where university education stops and on-the-job training begins; the process of transferring research and technology from university to industry; and industry-university collaboration.

Presentations will be made by presidents and chairs from local businesses. Panelists are: Karl Brackhaus, President, Dynapro Systems Inc.; Haig deB. Ferris, Principal, Ventures West Management Inc.; James J. Miller, President, Quadra Logic Technologies; Peter van der Gracht,

President, Nexus Engineering Corp.; and Lorne Whitehead, chair, TIR Systems Ltd.

Luncheon host is Otto Forgacs, senior vice-president of research and development at MacMillan Bloedel Ltd. Daniel Birch, UBC's vice-president academic and provost, will chair the symposium which will be held at Cecil Green Park.

C-HEF was formed eight years ago to promote understanding and cooperation between business and academia. A main focus of the group is the quality of Canadian education. Members are concerned that dropout and illiteracy rates are not diminishing, nor are needs being met for many skills required in the workplace.

The group has initiated task forces to investigate areas such as joint university-corporate activity and skill levels among recent graduates in corporate employment. As a result, members report business and industry collaboration has risen, and a model contract developed for joint research and development projects is now widely used.

### Strangway's proposals on environment accepted by government

The provincial government has accepted the recommendations of the Task Force on Environment and Economy, chaired by UBC President David Strangway, and established a round table to advise government on ways to achieve sustainable development.

The B.C. Round Table on Environment and Economy is made up of 31 members drawn from environmental groups, industry, labor, local governments and academia.

Tony Dorsey, acting director of UBC's Westwater Research Centre, has been appointed to the advisory group.



## Sweeney Todd a roaring success

By RON BURKE

Smiles abound in the School of Music and the Theatre Department these days with the overwhelmingly positive reaction to the co-production of the musical thriller Sweeney Todd.

Director and conductor French Tickner reports there have been nothing but rave reviews for the sold-out performances, and that it has been "just a wonderful collaboration."

Congratulations to everyone who worked so hard to produce the successful run that concluded last Saturday.

### David Suzuki to Lecture at Open House

Zoology Professor David Suzuki will lecture during Open House on Travels with Paikon: Adventures with an Amazonian Indian. The talks will feature slides of the spectacular Amazon rain forest as Suzuki describes his adventures with Paikon and his family in an area of the world that is the focus of much environmental concern. Lecture times are 2:30 p.m. on Friday, March 9 and 1 p.m. Saturday, March 10 and Sunday, March 11 in Woodward IRC #2.

### Volunteers Still Needed for Open House

The call is out for volunteers from the campus community to join the Open House team.

You can act as an information person, give tours, handle stage and site management or just trouble-shoot during the three-day event. Shifts are flexible, volunteers are needed for every venue and you'll receive a great T-shirt identifying you as part of the team putting on the largest university open house in Canada. For more information call Michelle Hopkins at 228-4989.

And For All of You Hams... The casting call continues for street entertainers to perform for crowds at various times and locations across campus during Open House. Jugglers, singers, mimes, musicians, clowns, magicians — this is your chance to shine. For more information call Erin Redden at 228-4082.

### Talk to an Astronaut

Health Sciences has arranged for Canadian astronaut Steve MacLean to lecture during Open House on the kinds of experiments he'll be doing aboard the April, 1991 Space Shuttle. He'll also be available to talk one-on-one with visitors about Canada's involvement in the space program, as well as about what it takes to be an astronaut.

### Solar Viewing

After you've talked with Steve MacLean, why not take a closer look at the universe? You can do just that at the Astronomical Observatory, where curator David Vogt and crew will have solar viewing available through their world-class telescope. There will also be a giant video screen so that many people can view at once and enjoy the staff's expert commentary. And after that...

### Experience an Earthquake

At the Applied Science exhibit you'll be able to experience the sensations of last October's San Francisco earthquake. A seismic simulator has been set up in what would otherwise appear to be a rustic pub in the Bay area. You can feel what it was like to be in the pub during the quake, or play it safe and be the one who gets to set off the tremors. Either way, it will be fun and educational.

### Campus Tours Return in May

The popular summer campus tours will return in May with a special feature added as part of the 75th Anniversary's Discover Summer at UBC program: outdoor theatre for children. Selected tours will coincide with performances of Androcles and the Lion by students from the Theatre Department in the Italian commedia dell'arte style of theatre in the plaza. The tour program, coordinated by the Community Relations Office, will expand to offer specialized tours for families, persons with disabilities, seniors and other groups, all during the season when the campus is most scenic.

### IRIS BITTERLICH

#### Wins the 1989 Monsanto Scholarship Award

During the annual meeting of the Expert Committee on Weeds (Western Section) held in Banff, Alberta, the 1989 Monsanto Canada Scholarship was awarded to Ms. Iris Bitterlich, a graduate student enrolled in Plant Science at the University of British Columbia. A \$2,000.00 award is attributed each year to an outstanding graduate student working in the area of weed science in Western Canada Universities. Ms. Bitterlich's research deals with using an ammonium nitrate solution to control weeds in onion and cole crops. Her program is being supervised by Dr. M.K. Upadhyaiya, Associate Professor, Plant Science, University of British Columbia.

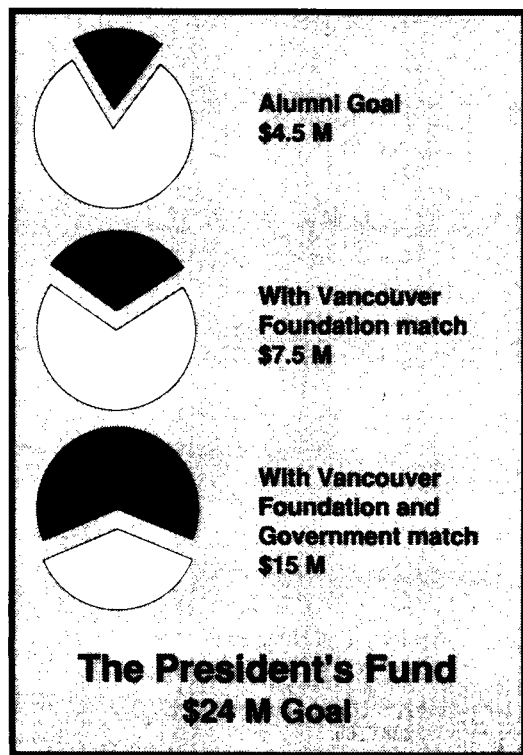
Results to date indicate that a post-emergent application of ammonium sulfate has given acceptable weed control in onions and several cole crops. Ms. Bitterlich expects to complete her M.S. program in 1990.



# Opportunity

The UBC Campaign News

February 1990



## Alumni Gifts Quadrupled

UBC alumni who make donations to the President's Fund can see the value of their gift increase fourfold, thanks to special matching programs of the Vancouver Foundation and the B.C. Government. The Vancouver Foundation (see story) has pledged \$3 million to match gifts to the fund, which will be matched again by the Government.

The President's Fund, a key project in the World of Opportunity campaign, will help UBC keep pace with the future as new areas of study, cross-disciplinary initiatives and major ethical questions create needs for unforeseen programs. Leading universities around the world have established similar funds to enable them to support emerging priorities.

A key objective of the President's Fund is to increase UBC's enrolment of graduate students and talented undergraduates. The fund will finance fellowships for women, national

entrance scholarships, grants for education abroad and scholarships for First Nations and disabled students. It will also fund special projects such as topical seminars and conferences, visiting lecturer programs and the purchase of important collections.

The President's Fund will be an unrestricted endowment of \$24 million, administered by the president, with the annual interest allocated to UBC's key priorities.

The multiple match illustrates foundation and government endorsement of a discretionary fund to help UBC remain flexible in planning for the future.

In March, UBC alumni will be invited to join the pacesetter donors to the President's Fund and support this important project. The alumni goal for gifts to the fund is \$4.5 million.

## Donor Profile: George & Mary Plant

One of Mary Plant's first childhood memories is of the teas her parents used to host for UBC's Alumni Association members.

Sherwood and Evelyn Lett played a significant role in the university's formative years, including drafting the AMS constitution in 1915.

"UBC has always been a part of my life," Plant said. There was never any doubt that she would follow her parents' path and enroll at the university.

As a student, Plant was president of the now defunct Women's Undergraduate Society and member of the student council, Women's Honorary Sorority and the Varsity Outdoor Club. She graduated with a BA in 1952.

Now a family counsellor and mediator in West Vancouver, she runs a Gulf Island bed and breakfast during the spring and summer. In addition to her career and business, she has raised five children, and been actively involved in a number of community organizations: the Canadian Federation of University Women, the University Women's Club of Vancouver, the

Vancouver Foundation, the Mediation Development Association of B.C., the North Vancouver Community Arts Council, Community Home-maker Service of Vancouver and the North Shore United Way.

Despite her other commitments, she has found time to maintain close ties with the university, serving as Convocation Senator since 1984 and member of the Vancouver School of Theology's Library and Archives Building Campaign Committee in 1987-88.

"Alums have a real contribution to make to UBC, and not just in money," Mary Plant explains. "We can help the university and today's students by promoting the university throughout the country."

Together Mary and her husband George Plant, partners in supporting the university, are alumni pacesetter donors to UBC's President's Fund. They contributed to the fund because of the donations matching program at MacMillan Bloedel, which multiplies the value of their gift to the fund.



Administrative Manager of Research for MacMillan Bloedel, George Plant graduated from UBC with a degree in Mechanical Engineering in 1950 and has supported the university through its Alumni Association ever since.

For over three decades, George has remained actively involved with the Alumni Association. He has served as the association's treasurer, vice-president, and president and maintained close ties even when his career took him to Ontario and Quebec.

"There was a job to be done," Plant explains simply, adding that what he gave in terms of volunteer hours he gets back in friendships and an enrichment of life.

"While at university, you develop a loyalty to your department, professors and dean and gain insights on life from them. You want to capture and continue that kind of fulfilling association," he said.

"A person in the commercial world brings to the university a more realistic focus of its activities. The university responds and listens to that," he said. He is currently one of UBC's appointees to the Vancouver General Hospital Board of Trustees.

Like his wife Mary, George Plant is an active member of the community. He has held key positions in the United Church, the Boy Scouts of Canada, the Vancouver Rotary Club, the Canadian Red Cross Society and the B.C. Science Council.

## Vancouver Foundation Gift Biggest Ever

In April 1989, the Vancouver Foundation pledged to support the World of Opportunity campaign with \$3 million, the largest single grant in its giving history.

With a capital fund of about \$227 million, the foundation annually grants \$15 million to worthy organizations throughout the province. The UBC President's Fund is one such worthy cause.

According to Tom Rust, foundation chairman, members of the foundation board felt it was important to take the leadership in the university's capital campaign. UBC is such an important institution to the community, said Rust, they wanted to ensure that the university's fund-raising drive got off to a strong start.

"The foundation is a significant organization in the B.C. community and we wanted

to make a contribution that would lead the way for the rest of the city," Rust explained.

The Vancouver Foundation grant is earmarked specifically for matching gifts to the President's Fund.

It's not the first time the foundation has supported the university. Over the past 25 years, it has donated \$2 million to various projects at UBC.

The largest community foundation in Canada, the Vancouver Foundation was born in 1942, when a Miss McKay gave \$1,000 to the City of Vancouver to "do something special". Today, it administers 408 individual public and private funds and foundations which "contribute to the mental, moral and physical improvements of the inhabitants of the Province".



# Alumni Set Pace for Fund

## George Morfitt

West Vancouver accountant George Morfitt took the job of B.C.'s Auditor General because it combined the top auditing job in the province with work in the public service. His most important role as watchdog of the public purse, he says, is reporting to the public.

"There is a need for an independent person to relate to the public how we are operating our collective resources," he explained.

As a man who has chosen to monitor expenditures as a career, Morfitt may be more qualified than most to recognize the significance of an unrestricted endowment like the President's Fund. He is one of the alumni pacesetters who is contributing \$5000 or more to the fund.

Now beginning his third year as Auditor General, Morfitt says it wouldn't have been possible without UBC.

"Securing a university degree was a precursor to becoming a chartered accountant which has given me an interesting career," he explained. "Without that broad-based education at university I might not be doing what I do today."

Morfitt graduated in 1958, the top student in the Commerce faculty. An active student politician, his athletic achievements earned him a Big Block award.

Participating fully in university life is what causes people to look back with fondness on those days, Morfitt believes. He has been a long-time supporter of his alma mater, founding its senior giving club, the Wesbrook Society in 1981, and acting as the society's first chairman.

Morfitt also served as President of the UBC Alumni Association from 1973 to 1974 and chaired UBC's Board of Governors from 1977 to 1978.

## Donovan Miller

Donovan Miller's affiliation with UBC has been lifelong. One of hundreds of returning war veterans who were offered a university education, Miller said it was an opportunity they seized because for so many young men it had been a financially impossible dream.

"We believe the university has been good to us," he said. His support of UBC since graduating from the Commerce faculty in 1947 he describes as "just paying a little bit back."

Miller is one of the alumni pacesetters who has contributed to the President's Fund. It was the scholarship aspect which attracted Miller to the fund. "It gives young people the opportunity to go ahead and make a contribution to the country," he explained.

Once UBC's chancellor, Miller was a member of UBC's Board of Governors for nine years, a member of Senate for

## MacMillan Bloedel

Giving to UBC is almost a tradition for MacMillan Bloedel Ltd., one of North America's largest forest companies.

Over the years, MacMillan Bloedel has supported many projects at UBC. They have collaborated on industrial research, assisted the prestigious J.V. Clyne Lecture Series, provided scholarships and fellowships for undergraduate and graduate students, and donated to the Japanese bell tower outside UBC's Asian Studies building.

MacMillan Bloedel depends on UBC to provide a steady supply of professional foresters and management personnel. Many UBC alumni now hold executive and technical positions in the company.

Funded projects at UBC include those involving growth and nutrition of Douglas fir, fleet monitoring, and tree nursery seedlings. But the company's support is not limited to forestry research.

MacMillan Bloedel recently helped establish a chair in forest biotechnology research along with Weyerhaeuser Canada Ltd. With biotechnology an emerging field in Canada, the chair will stimulate collaborative research between various UBC faculties and departments.

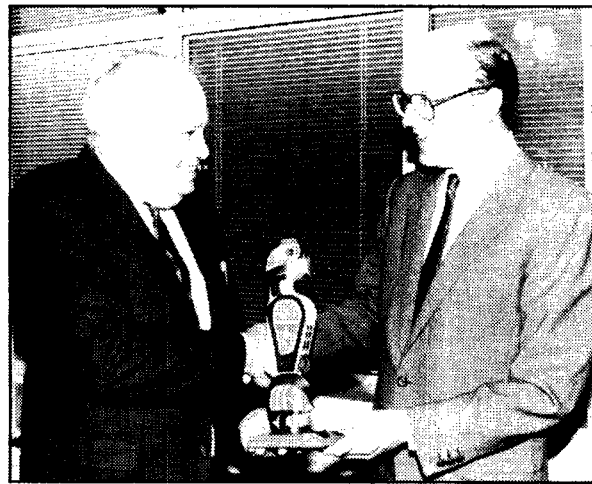
MacMillan Bloedel has also supported projects in nursing and at the Allan McGavin Sports Medicine Centre.

Now, the company has made major gifts to three projects in the World of Opportunity campaign, one of which is the President's Fund. The latest pledge brings its total contribution to the university over the years to more than \$1.5 million.

eight years and served as vice-president and later president of the Alumni Association. The university awarded him an honorary degree in 1979.

Former President and Chairman of Canadian Fishing Co. and member of the Order of Canada, he has worked on every aspect of the fishing industry during his career. One-time Canadian commissioner on the International North Pacific Fisheries Commission and former President of the Fisheries Council of Canada, he has served as advisor to various federal government ministries, held directorships with a number of corporations, and served on the B.C. Science Council and Fisheries Research Board of Canada.

Recently retired, Miller says he remains involved with some UBC committees "just to keep track of things." Still active in the Boy Scouts of Canada, he has had time to discover a new passion in oil painting.



President Strangway presented David Crombie with a totem pole at an event to recognize Rayrock's gift to The UBC Campaign

## David Crombie

"Going to UBC has done a lot for me. I met a wide range of interesting people and it opened up opportunities," said David Crombie, CEO of Rayrock Yellowknife Resources and alumni pacesetter donor to the President's Fund.

Crombie has pledged \$20,000 to the fund and is an active participant in the eastern division of the World of Opportunity Campaign Leadership Committee.

Now Crombie lives in Toronto, but he was born and raised on the West Coast. While at UBC he studied mechanical engineering and metallurgy, graduating from the Faculty of Applied Science in 1961. After graduating, he worked in research and development at Sherritt Gordon Mines where he pursued his interests in geology and mining.

When he joined Rayrock Yellowknife Resources Inc. in 1967, he had no idea his job would involve prospecting in a four-wheel drive vehicle, on horseback and even, once, in a dugout canoe, in isolated parts of Ecuador and Columbia.

"We pulled out when it started getting dangerous," Crombie said of his three-year Central America adventure.

During his 23-year association with the mining, oil and gas producing company, Crombie has travelled all over North and South America and extensively through Europe.

His first post with Rayrock, in 1967, was as chief engineer at the Discovery Gold Mine, 50 miles north of Yellowknife in the Northwest Territories.

"The population was 200 and the

only way out was in a small plane," Crombie recalls.

Outside of Rayrock, Crombie lends his professional expertise to the Gold Institute where he is currently director and vice-president.

## Rayrock Yellowknife Resources

Still bearing the name of its northern Canadian origins, Rayrock Yellowknife Resources Inc. has grown over the last 40 years from a small mining exploration company to a major producer of gold, oil, gas and langbeinite, a speciality fertilizer mineral.

No longer limited to mineral exploration in the Canadian North, it is now exploring and developing projects in the U.S., Chile, Ecuador and Costa Rica and owns reserves of high-quality heavy oil for future development.

Based in Toronto, this rapidly growing mineral exploration, development and operating company has pledged \$117,000 to the President's Fund.

It is the first time the company has pledged support to this university. "We're glad to play a small part," said David Crombie, Rayrock president and UBC alumnus, who is an active volunteer in the east for the university's fund-raising campaign.

## Placer Dome

It's somehow fitting that a 60-year old Vancouver-based gold mining company should support the dreams and goals of a 75-year old university. Gold mining holds a special place in B.C.'s history and tradition as does the province's largest and oldest educational institution.

Placer Dome Inc., an international mining company, has pledged \$400,000 to the President's Fund at UBC. No stranger to the campus, the company provides eight scholarships annually, funds research in seismic data, mining and mineral exploration, contributed to the research chair in hydrometallurgy and supports other projects through the Placer Dome Fund.

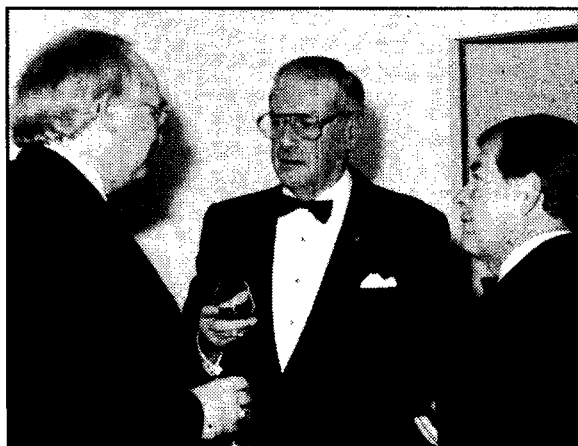
At UBC's Open House, March 9-11, Placer Dome is bringing the world famous gold display from Harvard University to UBC.

The leading world gold producer outside of South Africa and North America's

largest producer of the precious metal, Placer Dome was originally involved in production of base metals. Over the last decade, it has made gold mining its main thrust and with reserves of gold in the ground now totalling more than 20 million ounces, the company has operations in Canada, the U.S., Australia, Papua-New Guinea and Chile.

The company also extracts copper, silver, molybdenum and has interests in North American oil and gas production.

Its latest gold mine, Granny Smith, produced its first gold in January. This is the fifth gold mine the company has brought into production in a year. Since 1980 it has opened B.C.'s Equity Silver Mine, Montana's Golden Sunlight Mine, Mexico's Real de Angeles silver mine, and Australia's Kidston gold mine.



left to right: Grant Burnyeat, Donovan Miller and Bob Wyman at the Alumni Pacesetter Volunteer Dinner held in December

# The President's Fund: Supporting Students

One of the key objectives of the President's Fund is to create new scholarships and fellowships for outstanding students. This will help UBC achieve its objective of increasing graduate enrolment by 2,000 and ensuring equitable representation from students of all backgrounds.

Here are profiles of some of UBC's award-winning students: a botanist, fiction writer, mathematician, political scientist, pharmaceutical chemist and future lawyer. These students, and others like them, are the people who will fulfill UBC's mission to be a world centre of research and learning.



**Wayne Broughton**  
Fourth Year Honours Math & Physics  
Bert Henry Scholarship

Wayne Broughton knew exactly what he wanted to study when he entered university. It was math. In grade 8 he began entering math contests. "By grade 12," he says, "I was writing every one I could get my hands on." He did well. In the Canada-wide *Euclid* contest he finished third. In university his high achievement in mathematics continues. For the past four years, Broughton has won the Bert Henry Scholarship.

Broughton has applied for admission to PhD programs in the U.S. There he will focus his studies on mathematics. He wants to use his graduate studies to explore the abstract science of pure mathematics by asking mathematical questions and writing proofs. Later he will turn his energies to application.



**Katherine Harrison**  
PhD Student in Political Science  
University Graduate Fellowship

Katherine Harrison's concern for the environment caused her to put aside a career as an engineer and enter political science. Although she had a long time interest in the environment, it was during her graduate studies in engineering at M.I.T. that she began to see things differently. "I became increasingly aware that all the problems are not technical. Often it has more to do with what we choose to recognise as problems, so I got more interested in political phenomena."

Now Harrison studies public policy and Canadian politics. Her main focus in this area is environmental policy. Last term she researched natural and environmental resource management.

After her program is complete, Harrison says she'll try to get an academic position in political science. "I think I'd enjoy teaching and I'd like the freedom of choosing my own research topics, but I can also imagine being happy doing policy research in a think tank or government."

**Mary Ellard**  
PhD Student in Botany  
University Graduate Fellowship

Mary Ellard is experimenting with genetic engineering in plants. In her tests she examines how plants respond to stress or wounding. Right now her results are not for direct application. She explains, "It's a pretty unexplored field. Before you can apply a lot of knowledge, fundamental research has to be done."

Ellard's initial research in the world of science began at University College in Dublin. She studied sciences because she wanted something that offered broad prospects. From there her interests led her to molecular biology and then to plant genetics.

Her project, though now still a fundamental search for understanding, could lead to genetically engineered plants that better withstand stress from insect infestation or disease. Other directions could be comparisons of stress responses between plant and animal systems.

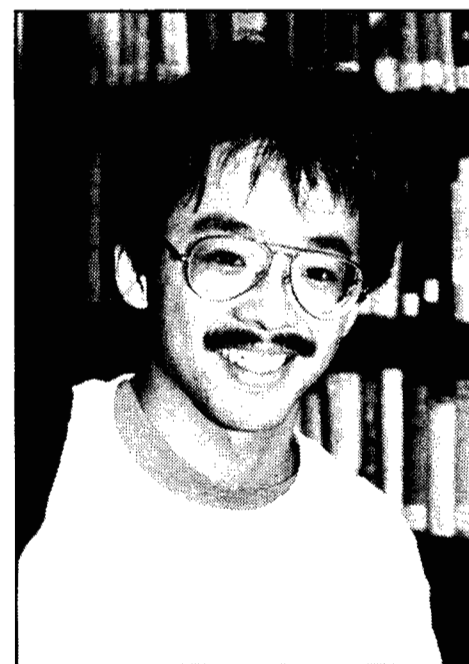


**Ron Lee**  
PhD Student in Pharmaceutical Science  
University Graduate Fellowship

Ron Lee gave up a comfortable career as a pharmacist to pursue his interest in research. Now he's in the Department of Pharmaceutical Chemistry conducting a project on drug metabolism. Lee says, "I look at how fast a drug is absorbed and how long it stays in the body." The drug he is researching is used to treat epilepsy. He is hoping to discover what elements in the drug make it toxic to certain parts of the body.

Lee received his undergraduate and masters degrees from UBC. He chose UBC again for his PhD because of his regard for the department, the university, and his ties with family and friends.

This is Lee's last year. After graduation he's hoping to find a research position with a large drug company in Canada or the U.S.



**Debbie Howlett**  
MFA Student in Creative Writing  
University Graduate Fellowship

Debbie Howlett loves to write. "I couldn't see myself doing anything else," she says. In fact her desire to write brought her right across Canada from Montreal, where she graduated from Concordia University with a BA.

Howlett chose UBC on the strength of its Creative Writing Department. "It's a good program. It offers a very strict mastery of the fine arts." Howlett's favourite genre is short fiction. "A lot of it is humour," she adds, "I like to write funny stories." One of her pieces was recently published in the literary journal, *The Malahat Review*. She is also the editor of *Prism*, an international literary magazine published at UBC.

Howlett graduates in November 1990. Her thesis work will be a collection of short fiction that she hopes to publish later. Teaching in a community college or attending a special two year writing course at Stanford University in California are possibilities for the future.



**Stephen O'Keefe**  
Fourth Year Commerce  
Terry Fox Humanitarian Award

Stephen O'Keefe has a piece of the Berlin Wall. When the gate came down, O'Keefe and a group of fellow students were on a tour of East Germany, Russia and Poland studying international finance. In their excitement they scaled and straddled the wall and then were chased away by East German police.

This study tour and his regular classes in Denmark were part of a Danish International Studies Program. "It was an incredible experience, because we learned so much about different places and life in Denmark," O'Keefe says. Students were selected on academic standing and were taught international economics and business in English by Danish instructors.

O'Keefe has been profoundly hearing impaired since birth, but this has not held him back. He is a self-taught lip reader and admits that he has received enormous support from his professors and classmates.

After he graduates, O'Keefe is considering pursuing a MBA, travelling for a year, or taking international law at UBC.

# A Conversation with David Strangway

*The President's Fund is an integral part of the World of Opportunity Campaign. The goal of the fund is to raise a \$24 million endowment to be applied by the president to areas of important need. Campaign News spoke with Dr. Strangway recently to find out more about the fund and how it will benefit UBC in the years to come.*

## Alumni Pacesetter Donors

Mr. William S. Armstrong, Q.C.  
 Mr. Robert Affleck  
 Ms. Deborah Apps  
 Mr. & Mrs. John Banfield  
 Mr. W. Thomas Brown  
 Mr. Grant D. Burnyeat  
 Dr. Susan K.C. Chow  
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 Mr. Frank E. Walden  
 Miss Nancy E. Woo  
 Dr. Harold M. Wright

**Campaign News:** What is the President's Fund, and how is it different from other projects funded by the Campaign?

**Dr. Strangway:** Most of the money we are raising in the Campaign is for planned purposes such as the performing arts centre or a particular scholarship, fellowship or endowed chair. These needs have been spelled out in the case statement and have been planned specifically to assist in the long term development of the university. The President's Fund shares that goal, but its method is different. The idea is to set up a fund of unallocated monies that can be used when special opportunities arise.

Our world is changing so fast, a university like UBC must be very flexible to keep up. If it is to meet the challenges posed by such rapid change, UBC must be able to seize opportunities as they appear. The President's Fund makes that flexibility possible.

Suppose a new area of investigation opens up and we have an opportunity to start a program immediately to build on our strengths. Perhaps an outstanding researcher is available, but he or she is unable to come here unless we can staff and supply a first rate laboratory. Institutions with completely committed funds find themselves in this situation constantly. With the President's Fund, I can seed the project, and ensure that UBC keeps abreast of the research.

There are many examples of how the fund can work. We may have the opportunity to get international scholars to come for a few weeks for special seminars, or we may wish to have an expert on some controversial issue visit the campus. A group of graduate students working on an exciting piece of research may need to attend a conference to present their findings, or learn the newest findings of others.

Now and then an unusual collection of books or other materials that fits into a real need of the university becomes available. In the fifties we were able to get a very important Japanese map collection because a generous donor provided \$14,000 to buy it with. That collection is worth millions now, and is an important research tool.

Without a fund to cover the costs of these extraordinary opportunities, we



Photo: David Gray

would have to pass them by. And the university as a whole would end up suffering.

**CN:** One of your goals is to increase scholarships and fellowships. How will they be affected by the President's Fund?

**DWS:** Again, the key to scholarships and fellowships, as far as the President's Fund is concerned, is flexibility. Many scholarships and fellowships now in existence at the university are specifically attached to a particular department or field of study. Often, these are established in perpetuity for a specific purpose, and, over time, may become less useful to the university than they once were. With the fund, we will be able to create new scholarships and fellowships that can respond to changes in many fields. The President's Fund means we can respond to new opportunities immediately without being bound to the unnecessarily restrictive conditions put on many scholarships and fellowships.

This flexibility in setting up new scholarships and fellowships gives the university the best opportunity to attract the best students who might be attracted to other schools for financial reasons. It will give us a competitive edge.

**CN:** How will the fund help increase scholarships and fellowships to women, native peoples and other minorities?

**DWS:** Donations to the fund are unallocated as far as the field is concerned, and so would be available to students in any department or faculty.

In giving to the fund, however, donors can stipulate that their gift be used to establish fellowships or scholarships for women, for native peoples, for the disabled or for members of other groups who are under-represented at the university today. I, or whoever is President, will use those monies so earmarked to reinforce equality of access to all programs at the university.

**CN:** How will money from the fund be allocated?

**DWS:** The great benefit of the President's Fund is spontaneity and speed. We have many other funds designed to help build different areas of the university. The President's Fund is not bound by one faculty or one procedure. It will help where the opportunity is greatest. It is a Fund that will be applied to areas of extraordinary opportunity.



## The UBC Campaign News

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**Carrie Holcapek**



## February 11 – February 24

**UBC Noon Hour Concert**  
Eckhardt-Grammate 1989 Music Competition winner, Janice Girard, piano. Tickets \$2 at the door. Music Recital Hall at 12:30pm. Call 228-3113.

Host: Prof. W. Craig Riddell. Brock Hall 351 from 4-5:30pm. Call 228-2876.

Health Sciences Psych. Unit 2N A/B from 9am-5:30pm. Call 222-5238.

Participants will look for patterns in their physical and social experiences. Call Jessica McFarlane at 228-5121.

tions, Student Counselling and Resources Centre, Brock Hall 200 or call 228-3811.



**Special Lecture**  
Sponsored by History, Social Work and Women's Studies. Motherhood and Poverty: From Charity to Welfare in 19th century Paris. Dr. Rachael Fuchs, Assoc. prof. History, Arizona State U. Buchanan A102 at 12:30pm. Call 228-2561.

**Film Series Seminar**  
Vancouver premier of Joseph Campbell, This Business of the Gods, 8 filmed dialogues with comparative mythologist Joseph Campbell and the series' producer, Jungian analyst Fraser Boa. Panel discussion follows each film. Fee: \$75. IRC #2, Fri. Feb 23 from 8-10pm; Sat. Feb. 24, 10am-4:30pm. Call 222-5261.

**Post Polio Study**  
Persons with polio needed for functional assessment and possible training programs. Elizabeth Dean, PhD, School of Rehabilitation Medicine. Call 228-7392.

**Agriculture**  
Late afternoon curling. Experienced curlers and those wishing to learn are welcome. Thunderbird, Tuesdays, 5:15-7:15. Call Paul Willing, 228-3560 or Alex Finlayson, 738-7698 (eve.)

### THURSDAY, FEB. 22

**Robotics and Automation Distinguished Lecture Series**  
A Very Fast Rafterfinder by Analog VLSI. Dr. Takeo Kanade, Computer Science and Co-Director, Robotics Inst., Carnegie Mellon U. Scarfe 100 from 1-2pm. Call 228-6894.

**Friday in the Fireside**  
UBC Vocal Trio and Peter Huron, Jazz and Blues. All welcome. Grad Student Centre Fireside Lounge from 6:30pm. Call 228-3203.

**Continuing Education in Social Work Workshop**  
Women in Therapy: Ethical Issues for Therapists. Dr. Judith Myers Avis, Family Studies, U. of Guelph. Fee: \$85/\$65 for students. School of Social Work Lec. Hall A, Fri. Feb. 23 from 7-9pm; Sat. Feb. 24, 9am-4pm. Call 228-2576.

**Multiple Sclerosis Study**  
Persons with mild to moderately severe MS needed for study on exercise responses. Elizabeth Dean, PhD, School of Rehab. Medicine. Call 228-7392.

**Badminton Club**  
Faculty, staff and grad student Badminton Club meets Thursdays, 8:30-10:30pm and Fridays, 6:30-8:30pm in Gym A of the Robert Osborne Sports Centre. Fees, \$15 until April with valid UBC Library card. Call Bernard at 731-9966.

**Physics Colloquium**  
Quantum Mechanics and Macroscopic Realism. Tony Leggett, Physics, U. of Illinois, Urbana-Champaign. Hennings 201 at 4pm. Call 228-6533/3853.

**UBC Wind Ensemble Concert**  
David Branter, director. Free admission. Old Auditorium at 8pm. Call 228-3113.

**International House Volunteers Needed**  
English tutors to assist non-English speaking students. Application forms available at International House. Call Jenise Yue/Donald Ng at 228-5021.

**Back Pain Research**  
Volunteers needed for magnetic resonance imaging of healthy spines-men and women aged 18-60, non-pregnant, no pacemakers, no intracranial clips and no metal fragments in the eye. University Hospital employees excluded. Call June 8am and 4pm, Monday-Thursday at 228-7720.

**Walter Gage Toastmasters**  
Wednesday. Public Speaking Club Meeting. Speeches and tabletopics. Guests are welcome. SUB at 7:30pm. Call Sulan at 597-8754.

### SATURDAY, FEB. 24

**Centre for Continuing Education Workshop**  
Honesty and Compassion in Child/Parent Relationships. Jennifer Shifrin. Video presentations include the works of Dr. Robert Firestone. Fee: \$50. Hillel House from 9-5pm. Call 222-5238.

**Career Development Study**  
Research study on communication between parents and adolescents regarding career and educational choices. Adolescents aged 12-19 and one parent needed to participate in an interview. Call Dr. Richard Young at 228-6380.

**Psychology Study**  
Opinions of teenage girls and their parents on important issues surfacing in family life. Volunteers needed: 13-19 year old girls and one or both of their parents. Call Lori Taylor at 733-0711.

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

### NOTICES

#### THE VANCOUVER INSTITUTE

**Sat. Feb. 17**  
The Future of Modern Societies Prof. Anthony Giddens, Social and Political Sciences, Cambridge.

**Sat. Feb. 24**  
Cologne: Archaeology In a Living City. Dr. Hansgerd Hellenkemper, Director, Romisch-Germanisches Museum, Cologne, Germany.

All lectures at 8:15 pm in IRC #2.

**Graduation Application**  
Grad application cards have been mailed to 4th year students registered in the '89 Winter session of the following degree programs: BA, BFA, BMus, BCom, BEd, BPE, BRE, and BSc. All students who expect to graduate this May (spring) should complete and return both cards to the Registrar's Office prior to February 15, 1990. Students in the graduating year of these programs who have not received cards in the mail by the end of the first week of February, may obtain cards from the Registrar's Office. Students in Applied Science, Graduate Studies or diploma programs may obtain graduation applications from their departments. Those in the remaining degree programs may obtain applications from the Dean's or Director's Office of their Faculty or School.

**Speakers Bureau**  
More than 200 faculty and professional staff available to speak to your group, usually free of charge. Topics range from Earthquakes to The Meech Lake Accord. Call 228-6167.

**Centre for Continuing Education Workshops**  
Nutrition for Vitality. Vasanto Crawford, Reg. Dietician and Nutritional Counsellor. Fee \$60. Tuesdays, Feb. 13, 20 and 27. Family/Nutritional Sciences 40 From 7-10pm. Call 222-5238.

Seeing Eye-to-Eye: A Communication Workshop for Couples. Dr. Arthur Ridgeway, Reg. Psychologist. Fee: \$220 per couple. Bring Lunch. Sat. Feb 17 -Sun. Feb. 18.

**Planning Lecture Series**  
Negotiation in Sustainable Development: The BC Round Table on Environment and Economy. Lee Doney, Sec. to The Round Table. Lassere 102 at 12:30pm. Call 228-5725

**UBC Wind Ensemble**  
David Branter, director. Free admission. Old Auditorium at 12:30pm. Call 228-3113.

**Music Faculty/Guest Artist Concert Series**  
Eliot Fisk, guitar. Music Recital Hall at 8pm. Prelude 7:15pm. For tickets, call 228-3113.

### FRIDAY, FEB. 23

**Fisheries/Aquatic Sciences Seminar Series**  
Body Size, Growth and Recruitment Success in Fishes. Larry Crowder, North Carolina State U. BioSciences 2361 at 3:30pm. Call 228-2731.

**Pediatrics Grand Rounds**  
Surfactant Replacement in RDS - Exosurf Results. Dr. John Smyth, Neonatology, Peds, UBC/BCCH. G.F. Strong Rehab Centre Auditorium at 9am. Call 875-2117 Loc. 7107 or 7118.

**Health Care/Epidemiology Rounds**  
New Strategies in Hospital Infection Control: Universal Precautions? Dr. David Birnbaum, PhD. student (Interdisciplinary). James Mather Bldg. 253 from 9-10am. Call 228-2772.

**Chemical Engineering Weekly Seminar**  
A Novel Compact Reactor with Permselective Walls for the Steam Reforming of Natural Gas. Alao Edlin Aris, Graduate student, Chem. Eng., UBC. Chem. Engineering 206 at 3:30pm. Call 228-3238.

**Economics Seminar**  
Gender-Based Personnel Policy and On-The-Job Training. Peter Kuhn, McMaster U.

# UBC Reports ad deadlines

UBC Reports is now distributed by the Vancouver Courier on the west side on alternate Sundays.

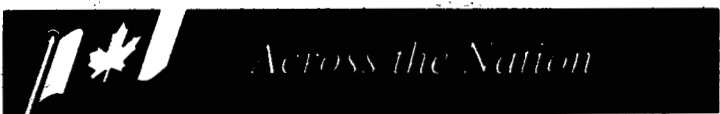
#### Edition

Feb. 22  
March 8  
March 22  
April 5  
April 19  
May 3

#### Deadline 4 p.m.

Feb. 12  
Feb. 26  
March 12  
March 26  
April 9  
April 23

For more information, or to place an ad, phone 228-4775



# Matching grants are evaluated

The Department of Industry, Science and Technology has conducted an evaluation of its Matching Grant Policy, aimed at improving cooperation between universities and industry in the field of research, facilitating the transfer of research results to the private sector and increasing funding of university research.

The study reveals that the policy has provided funds for granting councils, but has had little success in persuading the private sector to fund university research or cooperate with universities.

Although private-sector spending on research and development is low in Canada, cooperation with universities grew steadily during the 1980s. In its evaluation, the department also found that a larger proportion of research and development funding from the private sector supports university research in Canada than in the United States.

## Foreign students choose U of T

U of T continues to be the university of choice for foreign students in Canada, a new report reveals.

In its annual report on international students, released last week, the Canadian Bureau for International Education (CBIE) says the number of visa students at the university increased by almost 21 percent between 1987-88 and 1988-89—from 2,337 to 2,820 students.

## Housing placed on hold

Simon Fraser University has temporarily suspended plans to develop market housing atop Burnaby Mountain.

Bill De Vries, executive director of administrative services at Simon Fraser, says pressures for growth have forced the institution to re-think its plans for campus land usage. The university's board of governors has approved the halt in planning at the request of the administration.

A proposal to build a university village incorporating market housing and other features first surfaced in 1981. The concept was seen as a means of raising revenues for the construction of badly needed student residences.

Initially the university projected a

village population of 7,000 residents after 10 years. But the recession of the early 1980s brought planning to a halt. In 1986 a scaled-down version of the plan was revived and taken to Burnaby city council where it twice received approval in principle.

## Data network developed

An international information network on higher education - the Trans Regional Academic Mobility and Credential Evaluation (TRACE) - has been developed by a group of experts representing several national and international organizations concerned with studies abroad and the evaluation of foreign academic and professional credentials. The information network will provide access to standardized data on systems and institutions of higher education, on study programs, credentials, diplomas and degrees worldwide. The Association of Universities and Colleges of Canada is a founding member of TRACE.

## NRC Links researchers

The National Research Council of Canada (NRC) has accepted a joint offer by the University of Toronto, IBM Canada and Integrated Network Services Inc. (INSINC) to develop a nation-wide computer communications network for Canadian researchers (NRNet).

The high-speed data transmission network will incorporate the provincial research networks of British Columbia, Ontario, Quebec and Nova Scotia.

The national network is expected to incorporate other provincial networks as they are formed. NRNET will also be linked with research projects in the U.S.

The NRC, which initiated the project, will provide \$2-million in venture capital over the next three years. Over the same period, the regional networks are to contribute \$1.5-million. The University of Toronto will supply staff time worth \$300,000 and INSINC will give discounts on communications lines.

IBM will provide \$230,000 in hardware and operating system software. NRNet should start service in this year.

## History professor's study

# Courtship conforms to rules

By PAULA MARTIN

A UBC history professor has dipped into the archives to explore the public side of courtship and marriage in Victorian English Canada.

"We all think of courtship as an intrinsically private experience between a man and a woman," said social historian Peter Ward.

"But, like most forms of human behavior, it conforms to well understood social rules and is subject to all kinds of community influences."

Ward's soon-to-be-published book, *Courtship, Love and Marriage in Nineteenth-Century English Canada*, examines the role of religion, law, and custom, as well as families and friends, in shaping the intimate behavior of the courting couple.

Ward, who teaches in the History Department, surveyed contemporary diaries and letters to determine the community pressures that faced young couples and the ways they found to preserve some privacy despite them.

The courtship process was highly ritualized in early Canada, he discovered.

"Courtship often was initiated in the context of family life, so there was a lot of symbolic communication in its early stages."

Ward examined rituals such as courtship walking — one of the few ways a young couple could enjoy any privacy.

The custom of relatives and friends literally putting a newly married couple to bed was still practiced occasionally at this time.

"What this really represents," Ward

said, "is the extension of community influences right up to the threshold of life's most intimate physical experience."

Some forms of ritual hazing were practiced as well, such as the charivari — a noisy, public protest against a marriage, which sometimes turned violent.



Ward

"The degree to which the formal influence of the community intruded into these people's private lives was far greater than any of us would accept," Ward said.

Yet, although many of the rituals surrounding courtship and marriage have disappeared and the status of women has changed dramatically since the mid-19th century, some things remain constant, he said.

"People still court one another in ways that conform to clearly understood and communally enforced rules and regulations whether they realize it or not."

## Historical fashion show set for 75th anniversary

The bubbly will flow this spring at the Theatre Department during an historical fashion show held in honor of UBC's 75th anniversary.

The fashion show, organized around a champagne motif, is just one of many events being sponsored by the department to celebrate UBC's diamond anniversary.

"It's intended as an historical fashion retrospective, celebrating the last 75 years in fashion," said coordinator Mara Gottler, an assistant professor in costume design in the Theatre Department.

The two-part fashion show, scheduled for April 28, will be narrated by Vancouver Museum costume historian Ivan Sayers.

The show, to be held in the Frederic Wood Theatre, will celebrate a 75-year span of fashion in Canada, and especially Vancouver, and will raise scholarship funds for the Theatre Department's design and technical students.

Gottler said students have volunteered to help design the show, usher guests, manage the house and serve as models.

"It will showcase student talents and the co-operative aspects of design," Gottler said.

Sayers has volunteered to donate his time and most of the period clothing, she added. The rest of the models' attire will come from the department's antique wardrobe storage.

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People

# Stanbury awarded Biely prize

Economist **Bill Stanbury** has been awarded the 1989 Jacob Biely Faculty Research Prize for distinguished research.



Stanbury

A top scholar in the area of public policy analysis, Stanbury, a professor in the Faculty of Commerce and Business Administration, is Canada's most respected analyst of competition policy and law and has been regularly called upon to assist the federal government in dealing with draft legislation and policy questions in this and other areas.

A graduate of UBC's Commerce Faculty, Stanbury earned an MA and PhD at the University of California, Berkeley, specializing in industrial organization, labor economics, and public finance.

He joined UBC as an assistant professor in 1970.

Two of his first books examined the social and economic status of Native Indians. He has since published on a wide range of topics including government regulation; privatization and deregulation; funding of political parties; and more recently, rent controls.

His latest monograph looks at how local government regulations in Vancouver have influenced the housing crisis including illegal suites and "monster" houses. The publication grew out of a study commissioned by the Laurier Institute and the Canadian Real Estate Research Bureau.

Stanbury maintains the diversity of research is related. "Basically, I study the public sector and its ways of influencing private activities," he said.

Much in demand by business and financial organizations and other groups for speaking engagements, Stanbury is frequently sought out by the media. He has acted as consultant to the Law Reform Commission of Canada and worked extensively with the federal Department of Consumer and Corporate Affairs, consulting on business mergers and other competition policy issues.

**Melvin Reeves**, president of the First Merchant Capital Corp., a Vancouver corporate finance and real estate firm, is the new senior vice-president of UBC's Alumni Association.

He takes up his appointment Jan. 26, replacing Ron Longstaff who left the association to join the 1994 Victoria Commonwealth Games as president and CEO.

Reeves graduated from UBC in 1975 with a BComm and earned an MSc in international business in 1977.

Reeves went on to the University of Alberta to study law, graduating in 1979. He is currently affiliated with the Canadian Bar Association and the B.C. Law Society.

Reeves has remained an enthusiastic supporter of UBC, serving as executive member of the Member Resource Council, the University Athletic Committee, the Thunderbird Society, and as chair of the UBC Alumni Fund Committee. A former executive member of the Alumni Association, he is Life Member of the Wesbrook Society.

**Indira Samarasekera** has won one of the university's top faculty research awards, the 1989 Charles A. McDowell Prize.



Samarasekera

The prize is awarded annually to an outstanding young faculty member who has demonstrated excellence in pure or applied scientific research.

An associate professor in the Centre for Metallurgical Process Engineering and the Department of Metals and Materials Engineering, Samarasekera's research has impacted a global industry by providing significant breakthroughs in steel manufacturing through improved process design and operations.

One of the first problems she tackled was mould distortion in the continuous casting of steel billets, a process used in the industry world wide. Samarasekera worked with centre director **Keith Brimacombe** to identify the cause of the defects and develop specifications to eliminate the problem. She now leads Canada's largest billet-casting research program.

Samarasekera has made contributions in two other fields of process engineering: the hot rolling of steel, a complex process where steel is rolled to finished shapes; and growth of gallium arsenide crystals, a process used in manufacturing computer chips.

Her research involves mathematical analysis of these widely differing processes combined with laboratory and plant measurements to allow important advances in process design and operations.

Samarasekera received her undergraduate degree in mechanical engineering from the University of Ceylon, earned an MS in engineering from the University of California, Davis, and a PhD in metallurgical engineering from UBC. She joined the university in 1977.

**Harry Warren**, a professor emeritus of Geological Sciences and one of the original Great Trekkers, is this year's recipient of the Distinguished Service Award given by the Prospector and Developers' Association of Canada. Warren was cited for his outstanding contribution to mineral exploration through his research and pioneering activities in the use of geochemistry. The award will be presented at a banquet in Toronto March 12.

UBC swimmer **Kevin Draxinger** won a bronze medal for Canada in Commonwealth Games competition.

Draxinger, who placed third in the 200-metre backstroke, was in Auckland, New Zealand with four other competitors from the university: runner **Cary Nelson** who competed in the 10,000 metres; **Anil Kaul** a member of Canada's badminton team; high jumper **Jeannie Cockcroft**, and swimmer **Turlough O'Hare** who competed in the 200 and 400 metre freestyle.

## Foresters design new tenure agreement

By JO MOSS

B.C.'s forest tenure agreements are being called into question because they don't contain enough incentives for logging companies to invest in forest renewal.

Now two forestry professors have designed a new leasing contract they say will fit the bill.

It's a silvicultural agreement they propose be negotiated between the crown and forest company for areas covered by a tree farm licence on which a company plans to carry out intensive renewal.

The contract will encourage companies to carry out efficient regeneration and forest stand management voluntarily, decreasing the need for costly and time-consuming program administration, say David Haley, Forest Resources Management professor, and Martin Luckert, former research associate.

"If forest renewal is directed to the private sector, there has to be incentives," Haley explained. "You can't expect a company to invest if they can't get a return."

Haley and Luckert, now a professor at the University of Alberta, developed the silvicultural arrangement after a comprehensive review of B.C.'s land tenure system and the more than 30 different licensing agreements across Canada.

It was the first Canada-wide study of its kind.

The majority of people interviewed in government and industry agreed that too little was spent on silviculture under almost every type of existing tenure ar-

rangement. They also cited problems of high administration costs and enforcing performance standards.

Of all groups involved in forest regeneration, owners of private woodlots came out on top, investing more than any other group because the owners knew future economic returns would justify current expenditure.

Forest companies operating under licensing or tenure agreements were dissuaded from putting money into forest renewal, Haley and Luckert found, because they perceived their contracts to be insecure (tenure agreements usually run 25 years and are replaceable every 10) and felt investment would not be returned in profits.

As a result, Haley and Luckert say, some of B.C.'s most productive forest areas aren't being managed as effectively as they could be.

The problem they faced was how to incorporate incentives within B.C.'s current tenure systems.

Haley and Luckert propose that forest companies identify areas in their tenure holdings which would benefit from intensive silviculture and submit plans for regeneration and intensive timber management to the Ministry of Forests. The two parties would then negotiate a contract establishing an annual rent to replace all existing rental or stumpage charges on those areas.

"In effect, the crown provides the land and rents it out to industry who will provide the capital and labor input for growing trees and would receive the benefit," Haley explained.

Tailored to individual requirements, the silvicultural agreement would extend 60 to 80 years—the life of the forest crop—ensuring company profits on any investment. To ensure accountability, the contracts would be subject to third party arbitration if either party faulted.

Existing TFL agreements would continue on land not covered by the silvicultural agreements.

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Photo by Media Services

Award winning electrical engineering students Timothy Chia (left), Terry Ngo and Photeni Dimas helped design an earth station that won approval from a professional engineering group.

## Engineers win prize for satellite design

By JO MOSS

Earth stations MICROSAT and DOVE are taking UBC's electrical engineering students into a new era of satellite communications.

They are two transportable, inexpensive, low-power devices which allow the students to tap into a pioneering class of experimental satellites in low orbit around the Earth.

The stations' innovative design have earned the students professional kudos and an award from the Institute of Electrical and Electronic Engineers Inc., a professional organization with more than 300,000 members world wide.

The award was the only one given to a Canadian group by IEEE this year and is the second consecutive award the UBC branch has received from the organization.

Over the last 16 months, 25 undergraduate students have been researching, designing and developing the earth stations which represent a joint venture by UBC-IEEE on campus, the Electrical Engineering Club, and the Amateur Radio Club.

DOVE is a simpler, receive-only version of MICROSAT, which can send and receive voice and text messages via UoSAT and MicroSAT, two of the experimental satellites, explained Terry Ngo, chair of UBC-IEEE.

Slightly larger than a soccer ball and powered by solar energy, the experimental satellites represent a new era in space communications technology because they are cheap to construct and launch. They carry powerful transmitters so that receiving stations on Earth don't have to be technically complex to use them, putting cheap, reliable long-range communications within the reach of amateur radio operators and other groups with suitably equipped stations. Their affordability may make them attractive to less-developed countries.

The satellites act more like a telephone answering machine than a telephone. They don't allow two-way conversation, but digitize and store information—voice or text messages, data and images—for relay to a receiving station.

UBC's group can send messages twice a day with a timing window of between 10 and 20 minutes when the satellite's orbit brings it into transmitting range.

As more of these low-cost satellites are launched, it's anticipated they will allow amateur radio operators to use satellite communications during natural disasters when normal communication lines are down as well as bringing the technology into classrooms for educational purposes.

Each earth station cost less than \$2,000 to assemble and is designed to be simple, rugged and lightweight so it can be widely used by researchers,

such as geologists, out in the field.

Housed in the Radio Frequency laboratory of the Electrical Engineering building, they will be used to train students in practical aspects of satellite communications.

Some of the first people to see the earth stations are Grade 11 and 12 students in Vancouver high schools. The electrical engineering students have put an early version of DOVE on the road to demonstrate its capabilities and encourage more high school students to choose electrical engineering as a career.

"They can't keep their hands off it," said Photeni Dimas, one of the electrical engineering students who has been giving school presentations. Students listen to messages stored on the satellites and get a kick out of listening to messages from each other, Ngo said.

To date, DOVE has been enthusiastically received at Winston Churchill and Eric Hamber, and other high schools are clamoring for a visit, said Ngo.

The earth stations will be on display during the university's Open House in March.

# New techniques may help detect breast cancer

By JO MOSS

Image processing techniques applied in a new way to x-ray mammograms may help radiologists detect breast cancer in patients—and early detection can save many lives which would otherwise be lost to this deadly disease.

Farzin Aghdasi, a graduate student in Electrical Engineering, is developing the technology as part of his doctoral thesis program. "If we can detect the cancer early, it can be successfully cured," he said.

One in 11 women in B.C. will develop breast cancer, the third leading cause of death among women after heart disease and strokes.

The disease is insidious because it may escape detection for years. By the time a cancerous tumor is a few centimetres in size, large enough to be discovered through manual breast examination, it has often progressed to the point where chemotherapy or surgery is necessary.

The only way to detect smaller, unpalpable, tumors is through x-ray mammograms which allow a radiologist to examine the inner structure of the breast. For this reason, B.C.'s Breast Screening Mammography Program, a collaborative service offered by the Cancer Control Agency of B.C., the B.C. Medical Association, UBC, the Canadian Cancer Society and the B.C. Radiological Society, encourages women aged 40 and over to have breast x-ray mammograms every year.

The mammograms are checked manually by a radiologist who refers patients with suspicious signs for further diagnostic tests. "In the patterns of fibres and ducts, the radiologist will sometimes detect something that's not normal," Aghdasi explained. The problem is that in inspecting hundreds of healthy tissue mammograms, visual clues to cancerous cells in a few images could be missed, especially if the image is fuzzy, blurred, or lacks adequate contrast.

Aghdasi is applying standard signal processing techniques to enhance x-ray images in such a way that atypical patterns can be detected by computer. Much of his research revolves around developing algorithms which enable the computer to clean up the image to produce the desired quality and effect.

Each mammogram can be digitized to more than 5-million pixel points (compared to a quarter of a million pixel points on a typical digitized image such as a TV screen). The algorithms direct the computer to take each pixel point and manipulate the grey level, moving it up or down, to unlock the desired information. Image enhancement may involve removing blur or increasing the contrast between light and dark in areas of the picture.

"We can get information out of the image that is completely invisible to the naked eye in the original," Aghdasi explained.

Once the technology is fully developed, Aghdasi envisions a computer-linked camera will pre-screen all mammograms, digitizing and computing the information and then categorizing the images as normal, abnormal or suspicious.

The program will aid, rather than replace, a radiologist by indicating which x-rays require a closer look, said Aghdasi, who works at the B.C. Cancer Research Centre's Imaging Section.

## Physics experiment tests Big Bang theory

By GAVIN WILSON

A UBC physics experiment that rode into outer space atop a rocket was successfully completed at the White Sands Missile Range in New Mexico Jan. 20.

The results will test the validity of the theory that the universe began 20 billion years ago with a primeval explosion called the Big Bang.

"The instrument worked as well in flight as it did in the lab," said Physics Professor Mark Halpern, a member of the research team that designed the experiment.

The experiment was the culmination of a program initiated by Physics Professor Herbert Gush in 1967, shortly after the discovery of cosmic background radiation. Produced by the Big Bang, this radiation is still travelling through space and contains information about the early days of the universe.

An instrument designed by the UBC team measured the cosmic background radiation for about six minutes as the rocket reached the apogee of its flight at an altitude of 250 kilometres.

Despite the short flight, the researchers say their instrument, called a Fourier Transform Spectrometer, produced excellent results. Operating at two degrees above absolute zero using liquid helium as a refrigerant, it is one of the most sensitive instruments of its type ever constructed.

"At first glance, it appears that the simple Big Bang theory is supported," said Gush, who added that it will be several months before all the data is analyzed.

The spectrometer was designed by Gush, Halpern and graduate student Ed Wishnow. Its construction and laboratory testing were also done almost entirely within the Physics Department. The researchers said this was possible due to the high technical standards of the department's mechanical and electronics workshops.

"There are few university labs that could have produced it, including M.I.T. where I did my graduate work," said Halpern. "A ton of explosives went off directly underneath this instrument and it worked perfectly."

Although the test took place in the United

States, Halpern stressed this was a very Canadian project. The rocket's payload, including the telemetry communications systems and power supplies, was constructed by SED Systems of Saskatoon. Even the rocket was made by Winnipeg-based Bristol Aerospace.

"This was a sophisticated space science project with enormous Canadian content," Halpern said.

In the years leading up to January's launch, Gush said he and his colleagues faced extraordinary technical difficulties and a lack of research funds.

Before this experiment, three different prototype experiments were developed. There were also several previous rocket launches from the National Research Council rocket range in Churchill, Man., which closed in 1985.

Funding for the project, which cost more than \$1-million, was provided by the university, the Natural Sciences and Engineering Research Council and the Space Division of the National Research Council.