

Photo by Warren Schmidt

## THE WRITES OF SPRING

Students pack the UBC Armoury for the annual spring rite—writing their final exams

## Cecil Green to unveil bust during April visit

by Gavin Wilson

Cecil Green, one of UBC's greatest benefactors and a philanthropist of international stature, arrives on campus Monday, April 25, for a week-long visit.

While he is here Dr. Green, 87, will unveil a bronze bust of his late wife Ida, his partner of 60 years.

Cecil and Ida Green's worldwide philanthropy and dedication to science, industry, education and medicine earned them many honors through the years.

Their names grace dozens of buildings,



CECIL GREEN

fellowships, reading rooms, parks, colleges, professorships, lecture series and research facilities from here to Dallas, Tex., their home since 1930.

British-born Dr. Green grew up in Vancouver and enrolled in UBC in 1918. At the urging of a professor who recognized his brilliance, he soon moved to the Massachusetts Institute of Technology.

He went on to become a co-founder of Texas Instruments, the Dallas-based electronics firm.

During his stay at UBC, Dr. Green will visit the geophysics department, review renovation plans for Cecil Green Park, tour the TRIUMF facility and attend two major dinners in his honor — one given by Premier Bill Vander Zalm and the other by the city of Vancouver and Science World.

## Public poll supports Endowment Lands plan

by Debora Sweeney

In a recent public opinion poll, more than 80 per cent favored UBC's proposal to develop up to 20 per cent of the Endowment Lands.

Public support for the plan was consistent across all regions and segments of the population, according to the survey done by Decima Research in December, 1987.

However, the approximately 100 speakers who attended a recent forum on the issue opposed the plan, despite expressions of sympathy for the university's financial plight.

While opposing UBC's bid to develop 287 acres for residential housing, several speakers said the university should not be insulted by being forced to "beg and scrounge" for money.

John Jansen, a Chilliwack MLA appointed to review options for the UEL and come up with recommendations for the provincial cabinet, chaired the public forum.

Jansen said his work involves pouring through a two-foot-high stack of reports, correspondence and other information submitted during the last 15 years. He expects to report back to the cabinet in about two weeks.

In considering what to do with almost 1,800 acres of crown land, he is studying the possibility of establishing an endowment fund for the university.

Several UBC faculty and retired professors who attended the forum told Jansen the UEL should remain an undeveloped regional park.

"The natural area of the University Endowment Land is an essential laboratory," said Margaret North, a geophysics instructor for 26 years. North said the constraints of lab time make it impossible for students to go on field trips to other wilderness areas.

"People seem to think UBC is against the concept of a park but that is not the case," said UBC vice-president, research, Peter Larkin. "The university has a strong interest in using the parkland for teaching and research."

Larkin added the university's proposal for the UEL comes as a result of several years of planning and consultation with the Greater Vancouver Regional District.

Dr. Dan Overmyer, head of Asian Studies and chairman of the Endowment Lands Regional Park Committee, said housing and development of the UEL would cut the forest in half. "I'm in favour of more resources for UBC, but not at the expense of the forest," said Overmyer.

On the 102nd birthday of Vancouver and the 100th birthday of Stanley Park, the best thing the province could do would be to declare the UEL as parkland, said Vancouver Mayor Gordon Campbell.

"If the university wants funds, it should continue to develop the land it already has," said Campbell.

UBC's proposal for the UEL includes setting aside 1,300 acres for parkland; 287 acres for the university to generate income through a residential development scheme; and 100 acres for an expanded research park.

## UBC waits for news on budget from Victoria

by Debora Sweeney

UBC administrators are anxiously awaiting word from Victoria on what the university can expect from the provincial budget, tabled in the Legislature nearly a month ago.

The document says B.C. universities will receive operating grants of \$332-million this year, an increase of five per cent. However, it does not say how the money will be distributed to UBC, SFU and U-Vic.

As well, the budget outlines additional funding of \$19-million for universities, colleges and institutes, but does not specify how the money will be spent.

"We're hoping to find out as soon as possible," said Bruce Gellatly, vice-president, finance.

"We can't develop our final budget until we know what's going on and we're already into the new fiscal year."

The government has made it clear there will be no money for new initiatives in the Funds for Excellence program. During the last two years, funds have been set aside for research in areas specified by the provincial government, including biotechnology, robotics, computer and forestry research.

While 11 research projects initiated at UBC during that time will continue to be funded in 1988/89, the university will not receive funding for new programs and equipment.

Last year, the university did not get detailed information from provincial government officials until the middle of June.

## Class will investigate medicine wheel enigma

by Gavin Wilson

They stand as silent testimony to a vanished people.

Medicine Wheels — the native Indian-built Stonehenges of Canada — are scattered across the prairies and found to a lesser extent on the U.S. plains as far south as Arizona.

These ancient, sacred rock formations have intrigued researchers for decades.

"I've always thought Medicine Wheels evoke the same sense of human interaction with the deep, dark past that the megaliths of Europe do," said Geophysics and Astronomy curator David Vogt, who leads an investigation of the phenomenon by a continuing education class this June.

"It gives you a sense of a huge human heritage, an ancient heritage tied to the land. There's almost an aura that's tangible when you go to a site like that."

Built with stones that range in size from grapefruit to basketballs, the rim of a typical wheel is about 10 metres across with spokes radiating from a central cairn. Some cairns are as tall as three metres and made with boulders weighing up to a ton. Often there are outer cairns as well as effigies of humans and animals.

"Some of the wheels were in relatively continuous use for as long as 6,000 years. That predates the pyramids and European megaliths such as Stonehenge," said Vogt.

The people who built these enigmatic structures disappeared from the face of the earth long ago. Living in bands of 20-30 people they wandered the prairies following the migrations of vast herds of plains bison.

They lived like this for thousands of years, until the horse was introduced to the native peoples of the Great Plains of North America and their culture vanished.

The builders died, but many of the Medicine Wheels survived. Usually constructed on high hilltops and plateaus, they lay undisturbed by farmers' plows.

Vogt's class will drive across Alberta, visiting some of the more spectacular sites where they will learn about the myths and legends of the Plains Indians.

"This is not just a rubbernecking trip," Vogt

said. "Everybody's going to participate in fundamental research."

It was commonly thought that the wheels were built to honor the memory of chiefs or important events. But in 1974 an astronomer, noting that a spoke of one major wheel pointed to the sunrise on summer solstice, proposed that the wheels were celestial observatories.

Another theorist, the late Dr. Michael Ovensen, a professor of geophysics and astronomy at UBC, suggested the wheels were geometric in origin after discovering that the circles of the rims were imperfect, but uniform in their imperfection.

Vogt believes aspects of these and other theories are true, but that the wheels were primarily ceremonial in nature.

Each spring or summer all the bands of a tribe would gather at their Medicine Wheel. It was a time to marry, to assert the status of chiefs and shamans and perform rituals to guarantee good hunting.

The wheels may reflect their view of the cosmos and the position of heavenly bodies at this key time of the year. Societies through the ages have always built their largest structures — pyramids, temples, totem poles — in relation to the cosmos, Vogt said.

"They saw form in the universe with the same sense of order that we do, but not with the same kind of technology. You really have to start respecting what a given group of people, living for 10,000 years undisturbed in a single environment, dreamt up to explain the universe."

## Honorary degrees

The Tributes Committee is seeking nominations of outstanding candidates for honorary degrees to be awarded in 1989.

Those making nominations or suggestions will be asked to complete a short form giving pertinent details about the candidate.

Nominations or requests for forms should be mailed to:

Secretary, Tributes Committee  
c/o Ceremonies Office, Room 210  
Old Administration Building  
UBC Campus

# BEWARE

## Spouse may be health hazard

by Lorie Chortyk

Home Sweet Home may be hazardous to your health, according to UBC psychologist Dr. Wolfgang Linden and doctoral student James Frankish.

The researchers say the right choice of spouse could be a secret to avoiding stress-related illness.

"Communication in a good marriage plays a key role in reducing stress," said Frankish.

Linden and Frankish are looking for 120 volunteer couples to take part in a unique study that measures stress levels in couples during a communication exercise. The study will show partners how their bodies react to each other during discussions and how accurately they're able to assess their body's response.

"We'll measure each partner's reaction to a standard low-level stress situation (solving mental arithmetic questions) to see how they respond individually to stress," explains Frankish. "Then we'll measure their blood pressure and heart rate while they're discussing some aspect of their everyday life that may cause friction, such as household chores, in-laws or finances."

The researchers will study the interaction between partners during the taped discussion, and couples will be asked to complete questionnaires regarding their emotional reactions to everyday situations. The study will examine if there is a link between a couple's physical responses, their level of marital satisfaction and their susceptibility to common illness.

"Most people have no idea how interaction with their spouse affects them," said Frankish. "They may say that they're relaxed during a discussion, but their physiological responses are skyrocketing. In other cases, a person will say they're experiencing a lot of stress, but their physical responses are quite low."

"It's important for them to be aware of how they react to each other, because marital dissatisfaction is a source of chronic, low-level stress."

In addition to information about how they communicate, couples will receive tips on how to deal with stress through relaxation techniques.

"If couples need further help, we'll also identify resources available to them," said Linden.

If you're interested in participating in the study, contact Jim Frankish at 734-2979. Participants should be between 30 and 60 years old, have been involved in a relationship for at least three years, and should not be taking any blood pressure or heart medication.

## Director sought

The university is searching for a director of physical planning and development, Vice-President for Administration and Finance Bruce Gellatly said.

The position will bring together planning and development functions currently spread out among the Facilities Planning Office, the Budget Planning and Systems Management Office and the Design and Construction Division of Physical Plant.

"There's a real need to integrate these functions. Right now I've got three separate areas reporting to me on space and development," said Gellatly.

Gellatly said a new Department of Physical Planning and Development will be established as soon as a director is hired. He hopes to fill the position by July 1.

"We're using the director's position in Physical Plant, which is vacant, but we're changing it to focus entirely on matters related to space allocation, development and urban design of the campus," said Gellatly.

## Fire dept. open house

The University Endowment Lands fire department, 2992 Wesbrook Mall, will hold its annual open house May 7, from noon until 4 p.m. Visitors are welcome to see B.C.'s newest and most up-to-date fire truck, the Jaws of Life in action, firemen rappelling from the top of the drill tower, a simulated house fire and other demonstrations of skills and equipment.

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## Reduce wind resistance

# Truckers stand to save on fuel

by Jo Moss

If transport trucks were shaped more like sleek Ferraris, the Canadian trucking industry would save millions of dollars a year in fuel costs.

With that in mind, UBC's Mechanical Engineering Department is looking at way of cutting down wind resistance.

Depending on speed, the average transport truck uses between 40 to 60 per cent of its engine power to overcome wind resistance.

"You don't have to be a mathematician to figure out that if we can reduce wind resistance, the industry would save enormous amounts of money," said mechanical engineering professor Vinod Modi.

"We wanted to find out if there was some combination of geometry that could be applied to the big trucks that would diminish wind resistance."

The most successful modification was the addition of rotating cylinders to the front and back of the cab and trailer. They proved to reduce wind resistance by 16 per cent. Powered by tiny electric motors, the cylinders run the width of the truck and rotate at varying speeds depending on how fast the truck is moving.

"They performed much better than we had expected," Modi said. "We're very excited about the results."

Combining the addition of rotating cylinders with modifications to body design can reduce wind resistance by 28 per cent, he said.

Researchers investigated a number of other design changes including the optimum distance between the cab and the trailer and optimum vehicle height. They tested the inclination of the roof and back of the truck to see if changes in body shape made a difference.

"These changes reduced wind resistance by about 12 per cent, a significant fact considering that cab shields, touted by some truck drivers as improving performance, were found to reduce resistance by only one or two per cent," Modi said.

"The benefits of add-on devices like

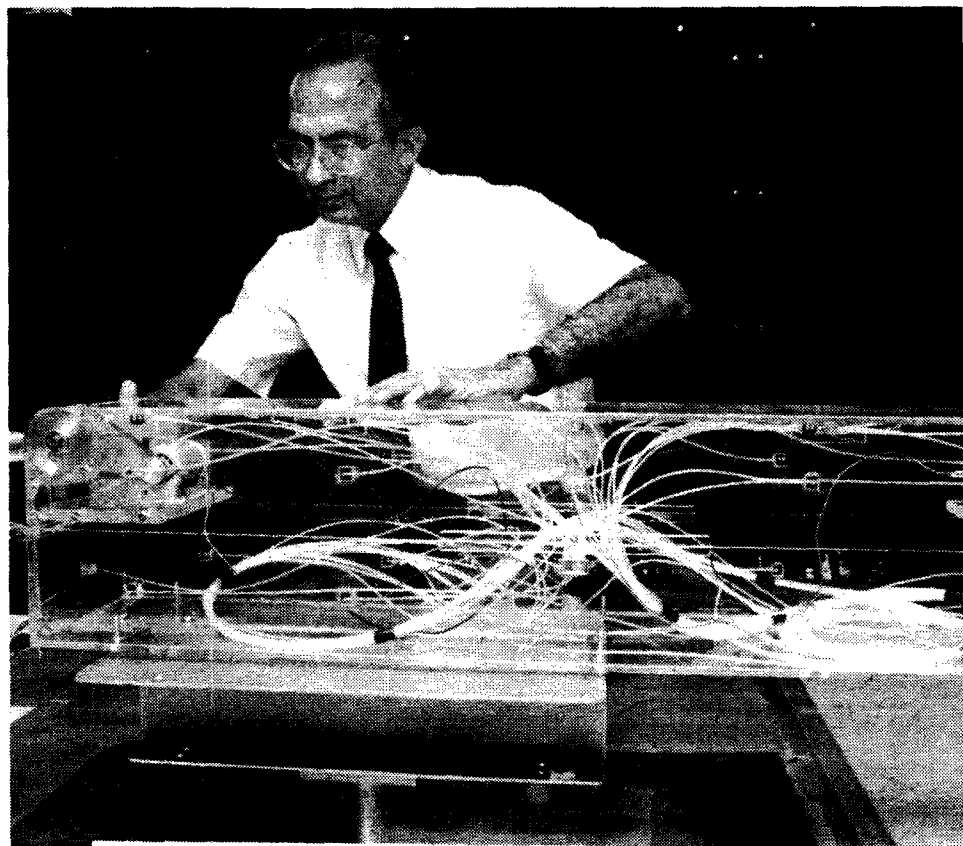


Photo by Warren Schmidt

Mechanical Engineering professor Vinod Modi studies a scale model which is helping him design an aerodynamically efficient truck which could save the trucking industries millions of dollars.

deflectors and skirts proved marginal. They are not particularly effective," he added.

Researchers used a scale model of a truck, one twelfth size, to test design modifications in a unique lab—an 80-foot wind tunnel located in the department of Mechanical Engineering. Only two

such wind tunnels exist in Canada, and only three in North America.

Preliminary tests will be finished by the end of the summer and researchers will be looking for a life-size truck to test the cylinders in a working situation.

# Trauma of sibling death studied

by Jo Moss

The woman who telephoned Nursing professor Betty Davies had lost her sister and brothers to diphtheria when she was eight years old.

"All her life, she had wondered why it was that she had survived, what was so special about her," Davies recounted. "She felt because she hadn't died too, that she should accomplish something special in her life. When she was 55, she realized she hadn't done that, and had a breakdown."

The death of a sibling can affect a person's life well into adulthood, Davies said. And although a lot of research has been done on how parents handle the death of a child, little has been done on how it affects the surviving children.

"The people I've talked to say the effect is profound," she said. "They say it changes their outlook on life."

Davies runs community workshops to help people who are grieving cope with their loss. She is currently looking for eight more volunteers to continue a study on bereavement. Volunteers must be over 25 and have experienced the death of a brother or sister before their 17th birthday.

She believes the trauma of sibling death affects people's actions in subtle ways. Three years after the death, Davies found siblings were more withdrawn than their peers.

"They have increased internalized behavioral problems, such as more sadness and depression. And they tend to be less involved with friends, or in sports," she explained.

Surviving children experienced a sense of loneliness, at the time of the death, and long afterwards.

Part of the problem, Davies said, is that many children grow up without discussing the death of their brother or sister—even with remaining siblings. And health professionals aren't equipped to deal with a subject that is taboo in our society.

"Our emphasis is on youth, beauty and life. We ignore what is old, ugly, and dying. Because we are not comfortable with death, children don't see death as a normal part of life," she said.

Even nine years after a sibling's death, volunteers said they still dream about their brother or sister or talk to them as if they are still alive.

"The trauma often affects the mental health of the next generation. When the person is an adult they may name their child after their sibling. When their own child becomes the age of their dead brother or sister, parents often become

overprotective," Davies said.

Some bereaved children did experience positive effects such as higher sense of self-esteem.

"Some children said they felt as if they saw life in a different way to other people. They sensed they were different from their peers. As they grew older, they felt satisfaction from the support they could give to other people who had experienced death."

Those children are in a better position to handle the stress of bereavement, Davies said. But she was curious as to why there was a disparity in the feelings of the surviving children.

Further research showed that children who had a low self-esteem before the death, felt even



DAVIES

could give to other people who had experienced death."

more keenly afterwards that they weren't "good enough".

"They felt as though the least favorite child had survived," Davies explained. The situation was aggravated if the parents had another child because the children then felt even more strongly that they weren't "enough" for their parents, she said.

Davies found children coped best when their family was involved in community activities that put them in contact with other people. She said it is important to include the surviving child in discussion and activities that surround the death because it helps them understand the situation.

"Children are usually not included in the funeral plans, in fact, they are often sent away until the whole event is over. Many times nothing is explained to them, and the surviving siblings have told me they resented that," Davies said.

Health professionals can do much to help parents help their surviving children, and guide them in doing what is best, she said.

# Drug data system will help unborn babies

by Debora Sweeney

A UBC medical geneticist has developed a database that provides doctors with information about the effects of drugs on unborn babies.

"Usually, a woman has taken something before she realizes she's pregnant," said Dr. Jan Friedman. "We get about a dozen calls a week from pregnant women and their doctors. We developed this database in response to a tremendous increase in concern from the public."

The Teratogen Information System (TERIS) has been adopted by approximately 20 institutions in the United States. UBC's medical genetics clinic at Grace Hospital is the only Canadian subscriber.

Teratogens are agents which can cause malformations in fetuses. Doctors who subscribe to TERIS can enter the name of a drug into their computers and get a printout which rates the drug, reporting its risk after exposure during pregnancy, and the quality of the data on which the estimate of risk is based.

To establish the ratings, Friedman works with an advisory board of representatives from five

major institutions across the United States reviewing the most up-to-date information on teratogens.

"The agent we're most frequently called about is alcohol," he said. "Usually the situation is a woman didn't know she was pregnant and went partying. Another situation is where a woman had surgery before she found out she was pregnant and was subjected to a whole slew of drugs — anesthetics, pain killers, antibiotics and several other things."

Most doctors rely only on drug-prescribing information on package inserts from pharmaceutical companies, which does not include information on the risks of exposure to the fetus, said Friedman.

Currently, the database contains information on prescription drugs and alcohol, but in the future, Friedman wants to expand it to include street drugs and environmental chemicals.

"The benefit of this system is that usually it reassures patients because the vast majority of exposures people are concerned about are not associated with increased risk of birth defects," said Friedman.



## Excellence in research

# 18 awarded Killam Prize

by Gavin Wilson

Eighteen UBC faculty members have been awarded the Killam Research Prize for excellence in their fields of research.

The prize of \$20,000 over two years is usually given to just 17 faculty members, but this year the committee decided to grant an additional award because of the difficulty of narrowing down the field, said Dr. Peter Larkin, Vice-President, Research.

Instituted by President David Strangway in 1986 and drawn from the University Development Fund established by donations from the Killam family, the prizes are equally divided between the arts and sciences. Faculty members can win the prize only once.

Selections are made from candidates nominated by deans. A committee comprised of members of the standing committee on faculty awards and 12 nominees of deans chose the winners.

The award carries no stipulations on how it should be spent. Some faculty take it as a research grant, others as a supplement to salary. It has even been donated for use as student scholarships.

This year's winners are:

**Dr. Robert Hare, Psychology**, is considered to be the world's leading expert on the psychopathic personality. He studies the biological bases of psychopathic and criminal behavior and has done empirical and theoretical research in the area of assessment of psychopathy. He has produced much of the world's important literature on this topic.

**Dr. William Fredeman, English**, is a master of virtually every aspect of Victorian culture, but the focus of his study is the Pre-Raphaelite period. He is currently completing what could be the most important project of his career, the nine-volume *Correspondence of Dante Gabriel Rossetti*.

**Dr. Timothy Oke, Geography**, is an acknowledged leader among the small group of climatologists who have transformed urban climatology from an essentially descriptive field of study to a science capable of generating physical theory.

**Dr. William New, English**, is well-known as an interpreter of Canadian literature and its cultural contexts, and as a commentator on Commonwealth and Third World literatures. He was one of the first scholars to appreciate the critical significance of these fields. He is editor of the quarterly *Canadian Literature*.



11 of the 18 Killam Research Prize winners are: (front row from left) Dr. Lawrence Walker, Dr. William Fredeman, Dr. William New, Dr. Pieter Cullis, Dr. John Grace. (Back row) Dr. Robert Hare, Dr. Kinya Tsuruta, Dr. Myer Bloom, Dr. Andrew Ng, Dr. Timothy Oke, Dr. Brian James.

**Dr. Kinya Tsuruta, Asian Studies**, is known on both sides of the Pacific as a major figure in the field of modern Japanese literature. He has many publications in both English and Japanese and is currently working on a book on the portrayal of Westerners in Japanese fiction.

**Dr. Lawrence Walker, Psychology**, has made major contributions to the controversial issue of the development of children's moral reasoning. He has documented the validity of a stage model of moral judgment and has resolved the long-standing controversy about claims of sex differences in moral reasoning.

**Dr. Richard Johnston, Political Science**, has built a national and international reputation based on his original research and publications on a wide range of subjects. He often writes on topics of public controversy, but unlike some other pundits, his broad historical knowledge and theoretical focus put these issues into a broader context.

**Dr. Jon Wilms, Education**, is an expert in the sociology of education and assessment of school effectiveness, program evaluation and development of programs for the mentally

handicapped. He has examined neighborhood attitudes to retarded adults in the community and achievement levels in public and private high schools.

**Robin Elliot, Law**, is one of Canada's top authorities on Canadian constitutional law, civil liberties, comparative constitutional law and human rights. He is in high demand as a speaker, commentator, consultant and lecturer.

**Dr. John Grace, Chemical Engineering**, is a world authority on fluid-particle interactions. Much of his research has a very strong industrial component, especially in processes used by the petroleum industry. His publications have become landmark references and he has lectured in many parts of the world.

**Dr. Jack Rachman, Psychology**, has made many contributions in a wide variety of fields in clinical psychology and is in the forefront of new developments in behavioral medicine and therapy. He focuses his research on behavioral models of anxiety, panic, fear and related disorders.

**Dr. John Brown, Physiology**, is one of Canada's most outstanding scientists in the field of gastrointestinal physiology and is credited with the discovery of two new peptides, gastric inhibitory polypeptide and motilin. He has also added greatly to our understanding of diabetes and obesity.

**Dr. Pieter Cullis, Biochemistry**, is a world leader in the field of liposome research. His work on the physical properties of naturally occurring lipid membranes will have far-reaching effects in both our basic understanding of membranes and in therapeutic applications of drug delivery systems.

**Dr. Myer Bloom, Physics**, has shown that pulsed Nuclear Magnetic Resonance techniques could be used to study pure quadrupole interaction, done important work in antiferromagnetism and conducted research in the study of liquids and gases. Recently, his work has a biological interest, using powerful NMR techniques to study membranes.

**Dr. Robert Hancock, Microbiology**, is one of world's leading experts on the outer membrane of bacteria. His research centres on the study of proteins involved in transport through the outer membrane of bacteria. Other work has helped our understanding of the mechanism of resistance to some antibiotics.

**Dr. Andrew Ng, Physics**, centres his research on the properties of matter under conditions of extremely high density and pressure, which is of considerable interest in condensed matter physics. His most recent research project provides another means of studying matter under extreme conditions using a "gas gun."

**Dr. Michael Blades, Chemistry**, has earned an international reputation in analytical chemistry. His main area of research has been the development and characterization of analytical plasma sources. His research has attracted international attention in the field of analytical atomic spectroscopy.

**Dr. Brian James, Chemistry**, has developed an outstanding research program in catalysis and bioinorganic chemistry. His research in the mechanism of homogeneous reactions has significantly influenced the direction of all phases of synthetic and biological chemistry. His work has tremendous implications for industrial oxidations.

## Quality is hallmark of concerts at UBC

by Lorie Chortyk

What does professional hockey and UBC concerts have in common?

Quality, according to internationally acclaimed pianist Robert Silverman. Dr. Silverman coordinates the School of Music's popular Wednesday noon-hour concert series, and he says audiences attending the free performances are hearing some of the world's best musicians.

"It's like hockey fans seeing NHL games for free. The concerts are presented by professional touring musicians on the faculty at UBC and by celebrated musicians visiting the school."

Pianists Jane Coop and Rena Sharon, violinist Geoffrey Michaels, cellist Eric Wilson, soprano Alexandra Browning, trumpeter Martin Berinbaum and violist Gerald Stanick — all UBC faculty members — are just some of the national and international artists who have been featured in campus concerts.

The School of Music sponsors almost 200 daytime and evening public concerts throughout the year, ranging from individual recitals to symphony performances and opera theatre.

"It's fun for us because we love performing," said Silverman, "but I also see it as a valuable service to the campus and the community."

Dr. William Benjamin, director of the Music School, agrees.



Music student Karen Opgenorth plays viola

"I'd have no hesitation about inviting someone interested in professional symphony, for example, to hear our UBC Symphony Orchestra. The performances are extremely good."

He points out that several student choral groups, including the University Singers led by James Fankhauser and Cortland Hultberg's University Chamber Singers, have won major national and international competitions.

Benjamin said UBC offers concert-goers a variety of music found nowhere else in the city.

"Under one roof you can hear everything from music of the Middle Ages to music composed yesterday," said Benjamin. "We present orchestral music, choral music, chamber music, solo recitals and opera. In addition to Western classical music we offer jazz, computer music, Asian music and other special concert fare."

Benjamin said he'd like to see more students, staff and faculty take advantage of the concerts.

## Building smarter robots the goal of scientists

by Jo Moss

The word robots conjures up images of sophisticated machines, like Star Wars C3PO, which talk and act like humans.

In reality, scientists are a long way from producing a robot which can match humans in even one characteristic.

"A lot of people think the basic problem in robotics is building the mechanical parts, but the most difficult problems don't lie in that area," said David Lowe, a computer science professor who develops software programs for robotics.

Lowe was one of the speakers at a recent robotics conference sponsored by UBC's Centre for Integrated Computer Systems Research (CICSR) and the Advanced Systems Institute of B.C. Five world-renowned robotics and artificial intelligence experts joined university and industry researchers to provide an overview of this rapidly developing field.

Scientists are currently less concerned with how to make robots move like humans than with how to make robots see, hear, touch and think like humans. They have developed sophisticated devices that can perform extremely complex actions, but that mobility and dexterity is usually wasted because the robot can only be programmed in a simple way.

"Robots in factories are very much like a blind and deaf person. They really have no idea about what's going on around them. They can only move to a predetermined point and hope the part they are going to pick up is in position," Lowe explained.

Because robots operate on a limited, fixed amount of pre-programmed information, they can

only perform repetitive tasks and that makes them too expensive to use in many industrial settings. A lot of money must be spent on special equipment to organize the parts robots handle and set them into the right position.

"We would like to have robots that can wiggle a peg into a hole, for example, notice when it's not in, and adjust their movement accordingly," Lowe said. "That's not possible right now for most industrial robots. Then there's the issue of inspection. Robots can't recognize if a part is faulty, or worn."

Recognition is where Lowe's research fits in. He's working on computer vision—how to program robots to recognize what is significant in their environment.

"People are so used to vision, they don't realize what a complex and sophisticated process it is," Lowe explained. "With robots, you have to describe precisely in a mathematical way what objects you would like to be recognized, then they can figure out where those objects are."

Much of Lowe's research application is drawn from what other scientists know about human vision.

"We're looking at data collected by psychologists which describes the stages people go through when they're identifying objects," Lowe said. "One of the basic stages is detecting contrasts, things like edges."

Using a TV camera linked to a computer, Lowe's aim is to develop a robot that can reliably recognize a specific object when it appears anywhere in the camera frame. That means recognizing an object from any angle, under variable light conditions, or when partially hidden.

# UBC Calendar

## SUNDAY, APR. 24

### Percussion Ensemble

Featuring John Rudolph, Tony Phillips, Salvador Ferraras, Ken Moore, and Graham Boyle. Program will include traditional African Music, works by Chick Corea, and the Beatles. For information call 228-4604. Great Hall, Museum of Anthropology. 2:30 & 3:20 p.m.

## MONDAY, APR. 25

### Biochemistry Seminar

Penetration of Salmonella through a Polarized Epithelial Monolayer. Dr. Brett Finlay, Medical Microbiology, Stanford University. For information call 228-2792. Lecture Hall #4, IRC. 4:00 p.m.

### Economics Seminar

Topic TBA. Peter Neary, Queen's and UCD. For information call 228-4505. Room 351, Brock Hall. 4:00-5:30 p.m.

### Law and Society Seminar

Constitutional Values and the Financing of Elections. Dr. Keith Ewing, Law, Cambridge University. For information call 228-6506. Faculty Conference Room, Curtis Building. 4:30 p.m.

## TUESDAY, APR. 26

### Health Promotion & Systems Studies

Factors which Influence Adjustment at Home After a Stroke: A Qualitative Study in Progress. Dr. Lyn Jongbloed, Occupational Therapy. Free. For information call 228-2258. Board Room, Fourth Floor, IRC. 12:30-1:30 p.m.

## THURSDAY, APR. 28

### Faculty & Staff Golf Tournament

Tournament to be followed by Dinner at the Faculty Club. For registration forms and information call Norm Watt at 228-2581. McLeary Golf Course.

## FRIDAY, APR. 29

### Paediatric Grand Rounds

Paediatric Renal Transplantation: 5 Years Experience at B.C. Children's Hospital. Dr. D. Lirenman, Division of Nephrology, Department of Paediatrics, BCCH; Dr. J. Carter, Division of Nephrology, Department of Paediatrics, Children's Hospital. For information call 875-2437 or 875-2451. Auditorium, G.F. Strong. 9:00 a.m.

### 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.

### Economics Seminar

Topic TBA. Rick Harris, Queen's University. For information call 228-4505. Room 351, Brock Hall. 4:00-5:30 p.m.

## SUNDAY, MAY 1

### Winds of Vancouver

Featuring Kathleen Rudolph, flute; Roger Coe, oboe; Wesley Foster, clarinet; John Gaudette, bassoon; Richard Mingus, horn. Program will include works by Beethoven and Ibert. For information call 228-4604. Great Hall, Museum of Anthropology. 2:30 & 3:20 p.m.

## THURSDAY, MAY 5

### Chemistry Symposium

Symposium of International Mass Spectrometry Manufacturers. For information call 228-3235. Graduate Student Centre. 8:30 a.m.-5:00 p.m.

### Lecture and Garden Tour

Sponsored by the Centre for Continuing Education. The Classical Chinese Garden. Jeannette Leduc. \$20. For information call 222-5254. Conference Room, Carr Hall. 7:00-9:00 p.m.

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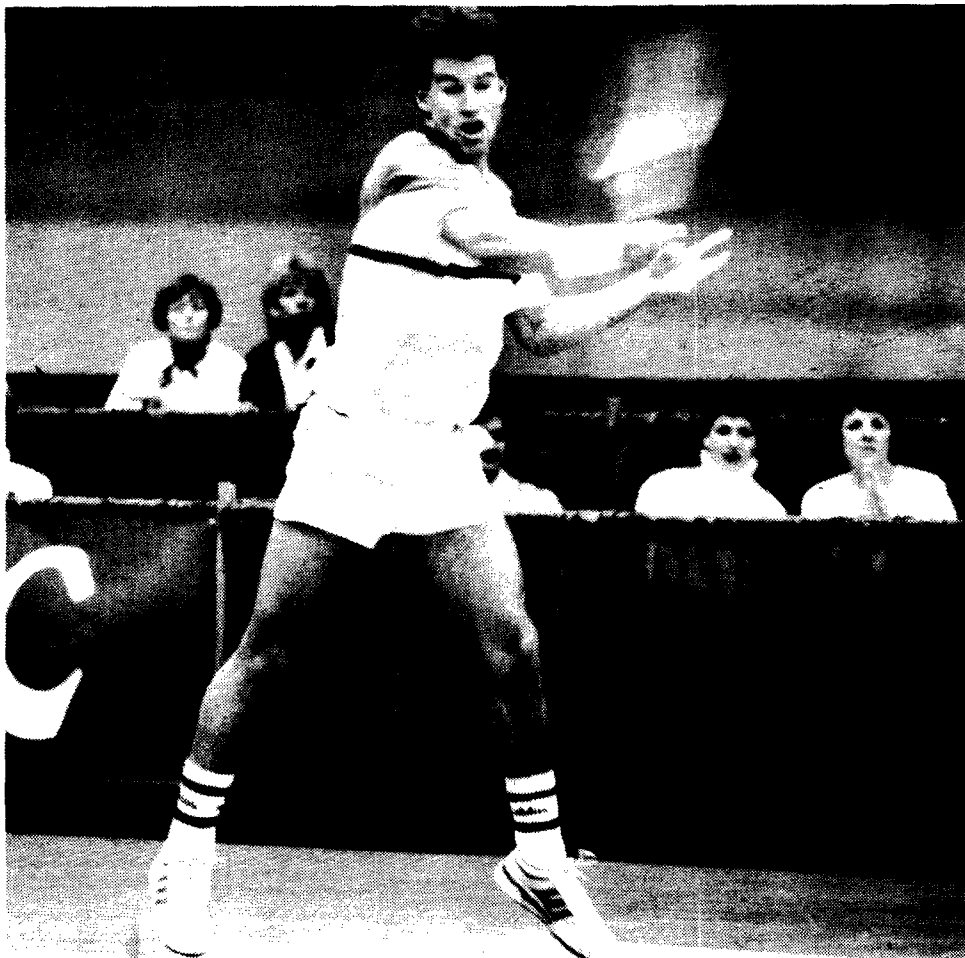
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Canadian Chris Pridham displays his winning form against top-ranked Chilean Ricardo Acuna in Davis Cup play at UBC April 8-10. Pridham's victory helped Canada defeat Chile.

Photo by Warren Schmidt

## Calendar Deadlines

For events in the period May 8 to May 21, notices must be submitted on proper Calendar forms no later than 4 p.m. on Wednesday, April 27 to the Community Relations Office, 6328 Memorial Road, Room 207, Old Administration Building. For more information, call 228-3131.

## FRIDAY, MAY 6

### Biomedical Research Centre Opening Symposium

Molecular Approaches to the Regulation of Growth and Differentiation. J.D. Watson, A. Bernstein, V. Paetkau, G.J.V. Nossal, M.J. Crumpton, S. Schlossman, T.M. Dexter, E.A. McCulloch, M. Feldmann, M. Oxman, L.E. Hood. For information call 228-7810. Lecture Hall #2, IRC. 8:30 a.m.-6:00 p.m.

### UBC Nursing Research Day

Research Studies in Nursing. For information call 228-7417. Research Pavilion. 9:00 a.m.-4:15 p.m.

### Social Work Symposium

Improving Practice through Research Paper Presentations. \$15, Students \$7. For information call 228-2576. Graham House, School of Social Work. 9:00 a.m.-4:30 p.m.

## SATURDAY, MAY 7

### Lecture and Garden Tour

Sponsored by the Centre for Continuing Education. The Classical Chinese Garden. Jeannette Leduc. \$20. For information call 222-5254. Conference Room, Carr Hall. 10:00-11:00 a.m.

## NOTICES

### Painting Exhibition

Sponsored by the Institute of Asian Research and the Golden Maple. May 7-15. Paintings by 24 students of the Golden Maple Art Studio. Free. For information call 228-2746. Auditorium, Asian Centre. 11:30 a.m.-5:30 p.m. daily.

### Interactive Satellite Teleconference

Sponsored by the English Language Institute, Centre for Continuing Education. Interact '88 - Emerging Technologies in Modern Language Education. A video tour of language laboratories and learning centres across the U.S. Dr. Wilga Rivers, Harvard; Dr. Frank Otto, Brigham Young University. Pre-registration required. Free. For information call 228-5459. Room 60, Family and Nutritional Sciences Building, Centre for Continuing Education.

### Laboratory Chemical Safety Course

Sponsored by Occupational Health & Safety. May 16 & 17. Chemical Storage, Handling and Disposal, Lab Inspections, Emergency Response and Spill Clean-up. Suitable for faculty, research assistants, storekeepers, and safety committee representatives. For registration information call 228-2029.

### Short Course in Animal Cell Culture

Sponsored by the Department of Physiology and the S.P.C.A. Eight Lectures given by invited speakers. Three practical

demonstrations. Open to all. Registration fee \$55. Deadline for registration June 1. For information call Dr. D. Mathers at 228-5684. Rooms 3009 & 3612, D.H. Copp Building. 9:00 a.m.-5:00 p.m.

### Golf Lessons

Get into the swing of things this spring with Golf Lessons. Community Sport Services is once again offering Golf Lessons at the basic or intermediate level. The first set of lessons begin April 25th. Tuition waivers acceptable. For information call 228-3688.

### Fine Arts Exhibition

Terragraphs and Calligrams: Recent work by Keith Mitchell. Now until April 29. Fine Arts Gallery, Basement, Main Library. Tuesday to Friday, 10:00 a.m.-5:00 p.m.; Saturday, Noon-5:00 p.m.

### Faculty Club Art Exhibition

Now until April 30th. Watercolour and Ink Paintings of Histological Designs, Local Architecture, and Native Plants. By Anne Adams. For information call 228-2708. Faculty Club.

### 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.

### 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.

### 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 daily 10:00 a.m.-7:00 p.m. in April. Open Daily 10:00 a.m.-8:00 p.m. May - August. Admission \$1. Free on Wednesdays.

### Botanical Garden

Open daily 10:00 a.m.-7:00 p.m. in April. Open Daily 10:00 a.m.-8:00 p.m. May - August. Admission \$2. Free on Wednesdays.

## People

# Clowes wins medal for Lithoprobe study

The Past President's Medal of the Geological Association of Canada will be awarded to UBC Geophysics professor Dr. Ronald Clowes for his work as principal investigator of the successful trial phase of the Lithoprobe project conducted on Vancouver Island in 1984-85.

The Lithoprobe project is set up to study the interior forces that shape the crust of the earth, the lithosphere.

Clowes is now director of the Lithoprobe secretariat, one of the largest multi-disciplinary earth sciences studies undertaken in Canada. The formal presentation of the medal will be made in May at the association's annual meeting in St. John's.

\* \* \*

Doctors William Borgen and Norman Amundson of the Department of Counselling

Psychology have received the Ontario College Counsellors' Association Award for their outstanding contributions to career and vocational counselling. The award recognizes their research into psychological reactions to unemployment and their book *The Experience of Unemployment*.

\* \* \*

Third year Law student Thomas Hulley and second-year Arts student Stephen Brewer tied for first place in the 1988 William G. Black Memorial Prize essay competition. The students will share the \$1,600 prize money. The essay competition focuses on a topic related to some aspect of Canadian citizenship each year.

Third year Law student Delwen Stander and Bryan Young (unclassified studies) received honorable mentions.

Jane Coop, a highly acclaimed pianist and associate professor in the School of Music, has returned home after an international tour playing to appreciative audiences in the USSR, England, France, Holland, Poland and Yugoslavia.

Based in Paris from September to December, 1987, she gave 21 concerts and broadcasts with repertoire ranging from Scarlatti to Jean Coulthard. Since returning to Canada, Coop has played concerts in Toronto and Montreal that were broadcast on national radio.



COOP

Walter Marsh, one of Vancouver's best known character actors, is retiring after 14 years as the senior talking book narrator at UBC's Crane Library.

Hundreds of disabled readers locally and in more than 40 countries have enjoyed Marsh's artistic recordings of novels, biographies, Canadian history and other material.

"This may be Walter's least-known and most unusual sideline," said Crane Library director Paul Thiele, "but it could well be considered his most magnificent performance."

Marsh recorded 154 complete books and voiced significant parts of hundreds more. He has also acted in many films, television programs and radio dramas.