

UBC REPORTS

Volume 32 Number 6

March 20, 1986



David Suzuki

David Suzuki wins medal

Dr. David Suzuki of UBC has won the Governor General's Award for Conservation for his eight-part CBC television series "A Planet for the Taking" that was broadcast last fall.

The award culminates more than 10 years as Canada's foremost science broadcaster. He was the original host of the CBC national radio science program Quirks and Quarks and has been associated with several other national CBC television programs devoted to science since 1971, including Suzuki on Science, Science Magazine and The Nature of Things.

In recent years Dr. Suzuki branched into science writing. He has a syndicated newspaper column and has written a number of science articles and books, including two books for children, *Looking at Plants* and *Looking at Insects*, published by General Publishing Ltd. of Don Mills, Ont.

The Canadian-born scientist joined UBC's zoology department in 1963 where he

established his scientific reputation in the field of genetics.

His research was distinguished particularly by his discovery of temperature-sensitive mutations in *Drosophila*, the fruit fly that is commonly used in genetics research.

He discovered flies that are normal at room temperature but become paralysed when the temperature is raised only a few degrees. These mutations are now used routinely by *Drosophila* geneticists.

In 1969 he won the E.W.R. Steacie Memorial Fellowship awarded to an outstanding research scientist under the age of 35. He became an Officer of the Order of Canada in 1977, was elected a Fellow of the Royal Society of Canada the following year and won the Sanford Fleming Medal of the Royal Canadian Institute in 1982.

Dr. Suzuki has received honorary degrees from four Canadian universities.

New financial system in effect April 1

A new and up-to-date accounting system that includes the latest techniques of financial management goes into operation at UBC on April 1, when the 1986-87 fiscal year begins.

Mr. Allen Baxter, director of Financial Systems Development, said the new system represents a "fresh start" for the UBC accounting system. "The existing system has been in place for some 20 years," he said, "and during that time has had only minor improvement."

There will be at least four major benefits for UBC when the system is operative, according to John Andersen, a management consultant with Arthur Andersen and Co. Mr. Bean was project manager for the new system, which has been under development since last year.

1. The system will generate prompt, accurate and current financial information for University administrators at all levels.

2. An on-line enquiry system will enable all UBC academic and administrative units to check the status of their accounts on a day-to-day basis.

3. A new commitment system for salaries, supplies and other expenses will enable UBC faculties and departments to manage their financial resources better because deans, directors and department heads will have an up-to-date picture of their financial position and commitments made.

4. Research reports can be generated on a project-year basis, a period which may differ from UBC's fiscal year.

Although he served as overall manager in the development of the new system, Mr. Bean is quick to add it took only eleven months to put it in place because of extensive involvement of a 35-member installation team that includes representatives from Financial Services, academic and administrative departments, Information Systems Management (ISM) and the Computing Centre.

A ten-member steering committee, which is

chaired by Mr. Baxter and includes senior academic and administrative executives, has been monitoring the status of the project and has approved major policy decisions.

Optimism about the new system stems from an extensive series of user interviews that were carried out in the course of development. "What we arrived at was a system developed from the bottom up rather than from the top down," Mr. Bean said.

Dave Frazer, a project leader in ISM who has coordinated a training program, estimates that some 1,000 UBC employees are involved in information and training sessions on the new financial system. Sessions have been held for deans and department heads, clerks in administrative and academic departments and for senior University administrators, who will be expected to use the reports the system will generate for improved financial management of their units.

There are also some 35 different sub-systems being interfaced with the new system. These include the systems that calculate such things as student fees and physical plant and telephone charges as well as the current payroll and personnel systems.

The new system, Mr. Bean said, also presents the University with an opportunity to redirect its resources. "The old system meant that many employees were doing manually what will now be generated as a matter of course."

The new management reports will be available for the April month-end. It's anticipated that on-line enquiry will be available starting in the fall of this year.

"Most academic and administrative departments should have on-line enquiry access by the end of the year," Mr. Baxter said.

Information about the new system is available from Mr. Baxter, 228-2661, or Mr. Frazer, 228-5867.

A focus on UBC centres of excellence

In the last issue of *UBC Reports* we looked at UBC's potential for centres of excellence in International finance and Pacific Rim studies -- two of the six areas outlined in the Fund for Excellence in Education announced by the provincial government on Feb. 11. In today's issue we'll focus on UBC's contributions in the areas of forestry research and links with cultural agencies. The final two areas designated for funding -- biotechnology and computer systems -- will be featured in the next issue of *UBC Reports*.

If there's one area of the arts in B.C. that can be described as "hot" these days, it's the film industry.

Prof. Joan Reynertson, who heads the Film Studies program in the Department of Theatre, says a combination of B.C. scenery, a devalued Canadian dollar and a pool of well-trained film production personnel -- many of them trained at UBC -- has been instrumental in drawing American companies to the province.

As a result, the film industry is more active in B.C. than in any other province in Canada. UBC's Film Studies program, now in its

11th year of operation, already has close ties with the B.C. film industry, Prof. Reynertson says, and she welcomes the provincial government initiative to encourage further development of the links.

Currently, the department offers an undergraduate program leading to a bachelor's degree, which includes a balanced array of courses in production, history, theory and aesthetics, and master's degrees in film and television production and in history, theory and criticism.

Equipment and staff limitations have forced the program to limit its annual intake of undergraduate students to 12. The program could treble its annual intake given improved equipment and additional faculty. Seven graduate students are currently registered in the department.

Prof. Reynertson sees the department's primary mission as providing students with a solid grounding in scriptwriting, directing, cinematography, editing, sound recording and animation as well as the history and aesthetics of film.

"Our most pressing need at the moment," she says, "is the replacement of aging equipment with a state-of-the-art production facility that will serve as an on-campus training and production centre."

She would also like to see the University's film activities linked to the industry through establishment of an internship program that would provide students with "hands-on" experience.

Among notable graduates of the UBC program are Robert Fredericks, executive producer of *The Beachcombers*, the longest running series in TV history; Cal Schumiatcher, producer of the feature film *My Kind of Town*, recently screened across Canada; and Sturla Gunnerson, whose feature-length

documentary *After the Axe*, produced for the CBC, was nominated for an Academy Award.

Theatre at UBC is almost as old as the University itself. Until a Department of Theatre was formally organized in the Faculty of Arts in 1958, much of the theatrical activity at the University centred on the Players Club, organized by the legendary Prof. Frederic "Freddie" Wood shortly after UBC opened its doors to students in 1915.

In the late 1930s, through its Extension Department, the University responded to the needs of theatrical groups in all parts of B.C. by providing travelling instructors who visited

Please turn to Page 2
See CENTRES

'Olympics' set for Saturday

Nearly three hundred of B.C.'s top secondary school science students will take part in the ninth Science Olympics at UBC on Saturday (March 22).

A total of 56 teams -- five students and one advisor teacher to a team -- will spend the day trying to solve seven mind-boggling problems thought up by Faculty of Education students who are training to be physics teachers.

Each team will be required to solve problems in the fields of optics, electricity and bridge design.

One member of each team will take part in the world's slowest bike race, using a bike pre-modified by changes in wheel size or gear ratio to slow it down.

Each bike will have to negotiate a 30-metre course and go over a half-metre high ramp positioned approximately in the middle of the course. The longest period of time for the full run will determine the winner.

Merritt secondary school is sending a team to defend the overall title it won last year.

The Physics Olympics is organized by the Faculty of Education's Department of Mathematics and Science Education with the cooperation of the Department of Physics.

Centres continued from Page 1

provincial centres to advise and teach. Today, the UBC department provides courses for more than 1,000 students annually, including 75 students who are majoring in theatre and film.

The department's facilities include two fully equipped theatres -- the Freddy Wood main stage seating 410 and the Dorothy Somerset Studio -- named for the first head of the department -- with a capacity of 90. The theatre offers a minimum season of eight plays during the UBC winter session and a season of summer stock, run entirely by a group of the most promising students.

Graduates of the theatre program have achieved local, national and international recognition and include Richard Ouzounian of the Stratford Festival, John Gray, author of *Billy Bishop*, and noted actors Brent Carver and Alan Scarfe.

MUSIC

UBC's music department, which celebrated its 25th anniversary in 1985, has established itself as a leading Canadian centre for professional and academic training in music. Some 300 students are currently enrolled for two undergraduate degrees and four graduate degrees.

Departmental activities are concentrated in the Music Building, which contains a 289-seat recital hall, 37 teaching rooms and offices, 32 practice rooms, an electronic music studio and a Music Library of 60,000 books and scores, 10,000 sound recordings and 150 music periodicals. A stone's throw from the building is the Wilson Recording Collection of 40,000 records, a public facility housed in the Sedgewick Library.

Quite apart from its academic activities the department provides a year-round program of public performances -- most of them free -- which link the University with the community. Concerts and recitals are provided by a variety of groups ranging from string trios through a wind symphony to a full-scale symphony orchestra. The University Chamber Singers and the Opera Workshop and Theatre provide opportunities for voice training.

Many of these groups visit various areas of B.C. annually on concert tours, a program that could expand with additional financial support.

The department is justifiably proud of its students and graduates. Students have topped the annual Eckhardt-Grammate Music Competition on five occasions, John Kimura Parker was the first-prize winner in the Leeds International piano competition in 1984 and viola student Leslie Robertson won first prize in the 1985 Tri-Bach Competition in Edmonton.

Graduates of the department are teachers at major universities in Canada and the U.S., performers with major symphony orchestras and singers with opera companies in Canada and abroad.

CREATIVE WRITING

The department had its origins in a series of workshops offered by former UBC faculty member and poet Earle Birney in 1946. A formal program within the Department of English began in 1957 and a separate department was created in 1965 headed by novelist Robert Harlow.

The department has a notable record of achievement. Many of its students are already published authors and its graduates have been awarded most of the major literary awards offered in Canada.

The offerings of the department cover all forms of creative writing, including writing for the screen and television, thus complementing the work of the film program in the Department of Theatre.

The department cooperates with the Vancouver School Board by sending instructors to secondary schools to hold workshops with students who are interested in a career in writing. Department head George McWhirter is eager to expand this program into other school districts, given additional resources.

FINE ARTS

The fine arts department, which last year marked its 30th birthday as an independent academic unit, offers a full range of programs at both the undergraduate and graduate levels in the areas of art history and studio art.

Graduates and faculty associated with the department have had a significant impact on the art scene in Vancouver and elsewhere over the years. The major inaugural exhibition in Vancouver's new art gallery, entitled

Vancouver Art and Artists 1933-1983, featured the work of 37 graduates and past and present faculty members. A total of 54 of the 147 artists in the show were associated in some way or other with UBC, either with the Department of Fine Arts, Art Education, Theatre, etc.

Art history graduates hold senior administrative and curatorial posts as well as teaching positions in every major art and teaching centre in Canada. Five members of the professional staff at the new Vancouver gallery are master's degree graduates and others hold important curatorial posts at the Art Gallery of Ontario and the Canada Council's art bank in Ottawa, which is headed by a UBC graduate William Kirby.

Faculty members in the department are active as producing artists and are featured regularly in group and one-person exhibitions. Art historians are active as writers of articles and books and several have prepared essays and catalogue entries for major exhibitions in Venice, Washington, D.C. and London, England.

Two sculptors associated with the department, Richard Prince and Geoffrey Smedley, have created major works that will be on display at Vancouver's international fair, Expo 86.

MUSEUM OF ANTHROPOLOGY

UBC's anthropology museum, which has one of the outstanding collections of West Coast Indian art in the world, makes its resources available through off-campus exhibitions and permanent loans as resources are available. Additional funding would permit the museum to organize an increased number of exhibits for display in other Canadian centres.

In recent years, the museum has circulated paintings by native Indian artists Robert Davidson and John LaFord, and displays on the making and using of stone tools in prehistoric B.C., the graphics of the Kwagwilt Indians of B.C. and an exhibit entitled *The Four Seasons, Food-getting in Prehistoric B.C.* Some of the displays were prepared by students, while others reflect the research interests of the museum's curatorial staff.

ADMINISTRATION

This proposed program reflects the fact that as interest in the arts expands, there is a growing need for an academic program in arts and museum administration. It could train experts in everything from the management of symphony orchestras and theatre companies to curatorial staff for art and anthropology museums.

UBC's dean of Arts, Dr. Robert Will, believes that UBC has developed a sound performing arts program that would serve as the basis for an academic program in arts administration. He anticipates an interdisciplinary program that would draw on expertise in other UBC faculties, e.g. Commerce and Business Administration.

An Arts Administration program, he said, would add another dimension to a performing arts program that already has close links with the cultural world in all parts of Canada.

FORESTRY

Dean Robert Kennedy of UBC's Faculty of Forestry has outlined several specific areas in which UBC has already established centres of excellence or has the potential to build such research programs. Results of study in these areas will have a direct and significant effect on the efficiency and cost effectiveness of the B.C. forest industry.

One of these areas involves the quality of tree seedlings used in reforestation, which presently have a poor survival rate. Many of the seedlings die or don't reach their full growth potential because of the trauma incurred during transportation and planting, and because of weather conditions after planting. UBC is carrying out several research projects to minimize these problems.

UBC has recently established a containerized nursery/greenhouse complex with 1.3 million tree seedlings on the campus, which serves as a teaching/demonstration/research facility and pilot plant. Research on developing stronger and better seedlings is conducted using some of the material in the nursery. Seedlings are purchased by the B.C. Ministry of Forests for

reforestation programs.

Researchers in the faculty are also conducting studies to reduce the "trauma" seedlings undergo in storage -- the time between removal from the nursery and planting. They are working with plant growth regulators -- hormones which induce dormancy in seedlings -- to create an effect equivalent to a sleeping pill, so that seedlings are in a deep sleep during transportation. This procedure promises to greatly increase the survival rate and subsequent growth of transported seedlings.

Related to this area is the work of Prof. Oscar Sziklai, who is carrying out research in forest genetics to develop "super trees" -- trees which are genetically altered to grow stronger and faster than the normal growth rate.

Another critical factor in the successful growth of tree seedlings is the control of surrounding vegetation which can kill or impede the growth of seedlings through competition for sunlight, land and nutrients in the earth. UBC researchers are investigating several methods of controlling vegetation, and Prof. Hammish Kimmins is establishing demonstration areas in the University Research Forest and in forest stands in other parts of the province where different methods of vegetation management can be tested.

Another area Dean Kennedy cited as essential in the development of the forest industry is research into better harvesting and transportation methods. "Approximately 50 per cent of the total operating costs of most saw mills are incurred in harvesting and delivery of raw logs to the mill," said Dean Kennedy. "Research in this area could dramatically reduce the overall cost of producing lumber."

A leading researcher in this field is Prof. Glen Young, who is working on the application of computer programs to determine the most efficient and cost effective combinations of manpower and machines to harvest specific forest stands and handle logs between stump and millsite.

Research into the physical and engineering properties of wood is also a critical component of UBC's centre of excellence in forestry. At the moment building codes may specify more lumber than necessary in structures because there isn't enough information available on factors such as wood strength and load distribution. This results in conservative building practices, high building costs and an inefficient use of wood resources.

Dean Kennedy said increased information about the physical and engineering qualities of wood will lead to a more rational use of wood and the development of higher-value wood products capable of competing with other materials. Dr. David Barrett, head of the Harvesting and Wood Science Department, is carrying out research in this field.

MANAGEMENT

There are several other areas of research which contribute to a centre of excellence in forestry at UBC.

Prof. Peter Pearse, Canada's leading expert on forest management, is producing a model of the economically-recoverable timber supply in B.C. and Canada. He is also producing a model of the forest products trade. For example, he can tell what effect a five per cent reduction in the value of Swedish currency (or any other factor) will have on Canada's trade of forest products. A third project he is working on is the economics of reforestation. There are currently two million hectares of NSR (not sufficiently restocked) land in B.C. Prof. Pearse has worked out recommendations on the most efficient and cost effective means of reforestation for these areas.

In another area of research Prof. Peter Murtha is using sophisticated remote sensing (satellite imagery) equipment to operate a prototype geographic information system which is being considered for installation in each of the 48 district ranger offices of the B.C. Forest Service. This satellite system has the potential of updating forest maps at 16-day intervals to record fire damage, harvesting and spread of insects and disease. Prof. Murtha is also using remote sensing to detect the outbreak of disease in forest stands. The diseased trees are distinguished by a different color on the satellite screen. Using satellite imagery Prof. Murtha can detect specific diseases in tree stands that cannot be reached easily by road. The technology also gives "early warning" information on disease outbreaks.

The use of remote sensing in forestry has enormous implications for improved forest management in B.C.



Bronze sculpture Raven Bringing Light to the World by Haida artist Robert Davidson was unveiled recently at the Museum of Anthropology. After two months on display at the museum, the sculpture will be displayed at Canada Harbour Place until the end of Expo 86 and will be shown across the country before being placed permanently at the National Museum of Man in Ottawa.

Universities disappointed by funding

The two organizations that represent Canada's university community have issued a joint statement expressing "grave reservations and disappointment" about the federal stand on university-based research outlined in Finance Minister Michael Wilson's budget.

The 79-member Association of Universities and Colleges of Canada (AUCC) and the Canadian Association of University Teachers (CAUT) representing 27,000 university faculty have taken issue with Ottawa's claim that it is increasing funding to the three federal research granting councils by \$300 million over the next five years.

The two associations claim that funding levels for the core activities of the councils will, in fact, decline in real terms over that period and have serious consequences for Canada's future research capabilities.

It's also claimed that the effects of the Feb. 26 budget announcement will put Canada even further behind its international competitors in terms of spending on research and development.

The two associations gave mixed reviews to Ottawa's plan to set up a matching grants scheme to encourage the private sector to channel research dollars through the three major councils that make grants for research -- The Natural Sciences and Engineering Research Council, the Social Sciences and Humanities Research Council and the Medical Research Council.

The two associations note that while the academic community welcomes opportunities to work with the private sector, it is already contributing to university-based research and that it remains to be seen if Mr. Wilson's proposal will result in the significant increases predicted by the government.

UBC Reports seeks input from readers

The Community Relations Office is currently reviewing the format and editorial content of *UBC Reports*. An editorial advisory committee with members from on and off the campus is developing a new framework for *UBC Reports* and questionnaires have been sent to a random sample of UBC faculty and staff for comments on what our readers would like to see in the paper. After reviewing the questionnaire responses the advisory committee will make recommendations on how *UBC Reports* can offer the best possible service to the campus community.

Commerce produces videos on real estate investment

Forget the "get-rich in real estate" schemes being marketed from the U.S. Ignore the workshops that will allegedly show you how to buy real estate with no money as a down payment.

In contrast to some controversial workshops currently being advertised in the U.S. as a method of making fast money in real estate, UBC has completed a series of 12 half-hour video tapes that give accurate and unbiased information on real estate investment.

The purpose of the series is to provide investors, advisors and lecturers with a fundamental overview of how to analyse real estate investments.

"The series isn't designed to turn anyone into an overnight estate millionaire," said Dr. George Gau, chairman of the urban land economics division of UBC's Faculty of Commerce and Business Administration, who hosts each episode. "We want to give viewers tools that will allow them to make rational investment decisions."

The series was produced in UBC's Department of Biomedical Communications. Producer-director of the series was Donna Alstad.

"We did a number of shootings on location. As backdrops we used such places as banks, the Vancouver Stock Exchange, the Daon Centre, the Pan Pacific Hotel, and buildings in Gastown and Yaletown," Ms. Anstad said.

"We wanted to make the point that the principles of investment covered in the programs related to real estate that many viewers were familiar with.

"Part of the exercise involved 'buying' a warehouse in Yaletown that had been remodelled and converted into architects' offices."

Copies of the video tapes are being sold for \$30 each through Bev Spicer, director of the Faculty of Commerce and Business Administration's real estate division (224-8444). The price of the complete series is \$300.

A preview tape consisting of a 10-minute overview and all of the second program, Investment Advantages and Disadvantages, is available for a refundable \$30.

Dr. Gau, who provided the content for the series, has an international reputation for his research in real estate economics. He is currently president of the American Real Estate and Urban Economics Association, the second Canadian to hold the position.

The first was Dr. Michael Goldberg, also of UBC's business school, who was president in 1984.

The 1,000-member association is the leading organization for academics and professionals who teach or do research in the field.

Dr. Gau's research has had a major impact on the real estate industry and on government real estate policy. He assisted the Toronto Stock Exchange in developing plans to introduce trading in mortgage options and with UBC colleague Dr. Dennis Capozza, he has conducted research on mortgage renewal insurance for the Canadian Mortgage and Housing Corp.

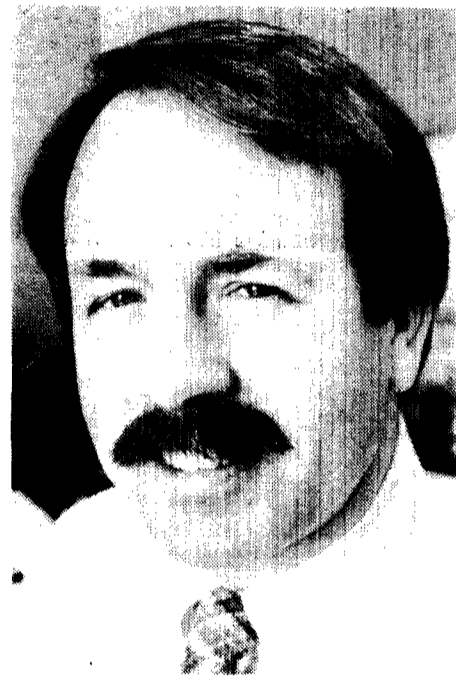
New plants for B.C. gardeners

The UBC Botanical Garden introduced two new plants to the B.C. public earlier this month through its unique Plant Introduction Scheme.

The goal of the program, which is carried out in conjunction with the B.C. Nursery Trades Association and the B.C. Society of Landscape Architects, is to introduce attractive, useful but largely unknown or new plant varieties to B.C. gardeners. The program has captured the interest of nursery associations internationally and has been copied by several countries around the world.

Last year the UBC Botanical Garden introduced four new plant varieties to the province. Approximately 1 million plants were made available to the public through nursery outlets participating in the program. The two new varieties introduced on March 1 were *Anagallis monelli* (Pacific Blue) and *Viburnum plicatum* (Summer Snowflake).

Material made available through the Plant Introduction Scheme is being used to landscape areas of the EXPO site, Canada Place, the SeaBus terminal and many parks in the Lower Mainland.



George Gau



Team of 12 UBC law students won the Begbie Trophy for the third year in a row at the annual B.C. Law Schools Competitive Moot. Shown with faculty advisor Howard Kushner, centre, are students David Allman, Daniel Bennett, Nerys Blown, Bruce Davies, Lucinda Dobbs, Greg Gardner, Scott Huyghebaert, Bonnie Lepin, Helen Low, Gordon Maynard, Keith Mitchell and Darcy Moch.

Research conducted in China

Dr. Paul J. Harrison of UBC will be part of a team of six Canadian scientists who will carry out oil pollution research in China this summer.

Their work will be conducted off the coast of Xiamen, formerly Amoy, in southern China. Xiamen is earmarked as a new industrial zone and free port.

"But the area has an extremely valuable fishery and the Chinese do not want industrial activity to harm the existing economy based on fish," Dr. Harrison said.

"They are already drilling for oil off the coast and they want the basic scientific information needed to plan any clean-up that will be required in case of an oil spill."

Dr. Harrison, who has a joint appointment in UBC's botany and oceanography departments, said the tests will be conducted in four huge "test tubes" two metres in diameters and 10 diameters deep suspended from the surface of the water one-half kilometre off shore.

The tubes were manufactured in Calgary. Two types of oil will be used in two tubes, oil plus a chemical dispersant in another and the dispersant only in the fourth.

The work is similar to pollution research carried out by an international team of scientists led by UBC oceanographers in Saanich Inlet on Vancouver Island in the late 1970s.

"We can't apply the Saanich results to the sub-tropical conditions of the South China Sea because of differences in the temperature of the water," Dr. Harrison said.

"The water there is about 25 degrees Celsius compared with 12 to 14 degrees at Saanich. The Chinese have different organisms in their marine food chain and

chemical reactions in the organisms occur at a faster rate than in colder water. The increased reaction rates speed up the effect of pollutants."

The work is part of a \$1.4-million project financed by the federal International Development Research Centre, Department of Fisheries and Oceans and the Chinese National Bureau of Oceanography.

The four-year project was initiated by Dr. Timothy Parsons of UBC's Departments of Oceanography and Zoology and Dr. C.S. Wong of the federal Institute of Ocean Science at Patricia Bay in Saanich Inlet. Work began in 1983 and will conclude with a scientific meeting in China next year.

Part of the project involves training Chinese scientists in Canada. Each year four or five Chinese spend three to five months at the Institute of Ocean Science. Last year nine Chinese scientists took a six-week course on marine ecology and laboratory techniques at UBC.

Dr. Harrison leaves for China April 15 and will return on May 15.

Man-in-Motion

UPDATE: MARCH 20, 1986: Rick Hansen has travelled 13,300 miles on his round-the-world wheelchair tour to raise funds for spinal cord research and rehabilitation, and is currently in Brisbane, Australia. Contributions so far total \$800,000. If you'd like to make a contribution, please call 687-5200.

UBC CALENDAR

Calendar Deadlines

For events in the period April 6 to April 19, notices must be submitted on proper Calendar forms no later than 4 p.m. on Thursday, March 27 to the Community Relations Office, 6328 Memorial Road, Room 207, Old Administration Building. For more information, call 228-3131.

The Vancouver Institute.

Saturday, March 22.

Bodily Idioms of Distress. Dr. Arthur Kleinman, *Medical Anthro. and Psychiatry*, Harvard University. (Cecil and Ida Green Lecture).

Saturday, March 29

The Courts: The Citizen's Non-Nuclear Deterrent. The Right Honourable Sir John Donaldson, Master of the Rolls, Court of Appeal, England.

Lecture Hall 2, Woodward Instructional Resources Centre, 8:15 p.m. Free admission.

MONDAY, MARCH 24

Botany Seminar.

Nuclear Transfer and Cell Transformation in Algal Host-Parasite Interactions. Linda Goff, University of California, Santa Cruz. Room 3219, Biological Science Building. 12:30 p.m.

Mechanical Engineering Seminar.

Dynamics and Aerodynamics of Vertical Axis Wind Turbines. Prof. H. Ashley, Stanford University. Room 1202, CEME Building. 3:30 p.m.

Applied Mathematics Seminar.

Geophysical Inverse Scattering. Mr. Ken Whittall, Geophysics and Astronomy, UBC. Room 229, Mathematics Building. 3:45 p.m.

Preventive Medicine and Health Promotion Seminar

Columbia Centre Student Nurses Project: An Experiential Health Promotion Model for the Health Professional. Martin Shoemaker, director of Programs & Personnel, Columbia Centre for Integrated Health Services & Research Associate, Division of Preventive Medicine & Health Promotion. Free admission. For information, call 228-2258. Room 253, James Mather Building, 4-5:30 p.m.

Biochemical Discussion Group/Biochemistry Seminar.

Electrochemical Characterization of the Metal-Binding Proteins. Bob Olafson, University of Victoria. IRC 4. 4 p.m.

Zoology "Physiology Group" Seminar.

Birds and Bees: Mechanical and Physiological Determinants of Feeding Strategies. Dr. T. Daniel, Zoology, University of Washington. Room 2449, Biological Science Building. 4:30 p.m.

TUESDAY, MARCH 25

Botany Seminar.

Breeding Systems and Gynodioecy in Hawaiian Bidens. Mei Sun, Botany, UBC. Room 3219, Biological Science Building. 12:30 p.m.

Chemistry Seminar-C-I-L Lecture.

Critical Points and the Interfaces Between Phases. Prof. Benjamin Widom, Chemistry, Cornell University, Ithaca, N.Y. Room 250, Chemistry Building. 1 p.m.

Electrical Engineering Seminar.

Intermodulation Effects in Satellite Communication Systems. Dr. X. Vuong, manager, Communications Systems Analysis, GTE Spacenet, Virginia. Room 402, Electrical Engineering Building. 1:30 p.m.

Metallurgical Engineering Seminar.

Energy Conservation and Computer Simulation of the Reheating Furnace. Zongyu Li, Metallurgical Engineering, UBC. Room 317, Frank Forward (Metallurgy) Building. 3:30 p.m.

Oceanography Seminar.

Physiology and Biochemistry of Nitrogen Uptake by Phytoplankton - An Increasingly Complex Story. Dr. Quay Dortsch, Bigelow Laboratories, Boothbay Harbor, Maine. Room 1499, Biological Science Building. 3:30 p.m.

Economics Seminar.

Towards Incorporating Money in GE Models. Jean Waelbroeck, Free University, Brussels, and UBC. Room 351, Brock Hall. 4 p.m.

UBC Sailing Club General Meeting.

General meeting, spring cruise meeting, and a social event afterwards - refreshments will be sold. John Kinahan, UBC Sailing Club. Room 205, Student Union Building. 7:30 - 12 p.m.

WEDNESDAY, MARCH 26

Pharmaceutical Sciences Seminar.

Diphenhydramine: Drug Measurement, Pharmacokinetics and Fetal Effects in Pregnant Sheep. Sun Dong Yoo, Pharmaceutical Sciences, UBC. Room 202, The Research Centre, 950 W. 28th. Ave. 12 noon.

Pharmacology & Therapeutics Seminar.

Associative Synaptic Potentiation in Hippocampus. Mr. A. Auyeung, Pharmacology & Therapeutics, Faculty of Medicine, UBC. Room 317, Basic Medical Sciences Building, Block C. 12 noon.

Continued on Page 4

