



Branch LINES

Volume 8 No. 2

September, 1997

From the Dean's Desk

Strategic Planning in the Faculty of Forestry

SEVEN years ago this September the Faculty of Forestry started the first round of a strategic planning exercise and in 1994 completed a second. Our objective was to respond affirmatively to the emerging needs of society related to education and research in forestry — forest conservation, management, products and production processes. Through the hard work of the faculty and staff, the thoughtful advice of the Forestry Advisory Council and the support of our alumni and others, we have been able to accomplish a great deal:

- a major review of the professional forestry program, with extensive revisions currently underway (see page 5) and the establishment of a Diploma in Forestry (Advanced Silviculture) in collaboration with the Silviculture Institute of BC;
- a new B.Sc. program in Natural Resources Conservation (apparently the first of its kind in Canada), and the establishment of our Centre for Applied Conservation Biology to bring the scientific information from conservation biology to the management of forests in B.C. and elsewhere in the world;
- a new, innovative initiative in wood products education and research, including a five-year, co-op B.Sc. program in Wood Products Processing and the Centre for Advanced Wood Processing;
- establishment of the BC Forestry Continuing Studies Network in collaboration with UNBC, University College of the Cariboo, Malaspina College, Selkirk College and Northwest Community College;

- an emerging presence in international forestry through conferences, research projects and student exchanges;
- appointment of 20 new faculty members (representing almost 50% faculty renewal), many of whom carry joint appointments with such departments as Agricultural Economics, Landscape Architecture, Civil Engineering, Mechanical Engineering, Sociology and Political Science.
- development of a strong cadre of professional management staff to handle the administration of the Faculty, student services (recruiting, counselling, and job placement, and faculty development).

As a consequence of these developments, our enrolment has grown to the highest in the history of the Faculty, with 620 undergraduates, 212 graduate students and 110 diploma students. At the same time, our research program has expanded to make the Faculty of Forestry the most research intensive faculty in one of Canada's most research-intensive universities. And many faculty members are directly involved with forestry issues with government, industry and environmental organizations.

These developments in the Faculty — and changing needs of society — suggest a need to re-engage strategic planning. Faced with declining government support (we have taken budget cuts over this period totalling about 15%), how can we sustain excellence? How should we organize ourselves to best meet society's needs for forestry education, research and service?

What new areas should we develop and what old ones should we drop?

The new President of the University, Dr. Martha Piper, is initiating a similar effort for the University, so renewed planning within the Faculty is particularly appropriate at this moment. Her first step will be to prepare a "white paper" on the societal context that frames university decisions. She intends to circulate this paper widely with interested individuals such as yourself. With that and other input, during the next three months we plan to articulate the directions for the Faculty into the next millennium. Your thoughts and advice on these questions are particularly welcome.

Strategic planning usefully evolves from a clear understanding of the context for decisions. To this end, we are particularly interested in your thoughts on:

- what are the most significant societal trends affecting forestry — conservation, management, products and production processes?
- what are the key challenges that will face forestry in the next five to ten years?
- what specific actions should the UBC Faculty of Forestry be taking to respond to these challenges?

Please send your response by letter, fax (604) 822-8645 or e-mail binkley@unixg.ubc.ca.

Unless you tell us otherwise, I will plan to share your comments with our planning committee and the faculty more broadly.

Clark S. Binkley

RESEARCH HIGHLIGHT

Landslide initiation in clearcuts

WINTER storm activity led to a series of landslides in the watersheds of the GVRD in 1990/91, including the debris flow at Jamieson Creek (*left photo*). This site, together with three others at Sand River and Carnation Creek on the west



Jamieson Creek landslide

coast of Vancouver Island, and Holberg Inlet near Port Hardy, was selected for a university/government/industry study at UBC to develop improved tools and techniques for assessing potentially unstable terrain. Partners on the project were the BCMoF, MacMillan Bloedel, Western Forest Products and NSERC. Fieldwork has included measurements of soil strength (*centre photo*) and, in recent follow-up work supported by FRBC (1996/98), groundwater parameters at the headscarp of the Jamieson Creek slide (*right photo*).

Soil strength parameters have been found to be very similar at each of the four sites,

lending confidence to development of regionally-based techniques incorporating quantitative as well as qualitative factors. Interestingly, the strength values are consistently higher than previous studies in the Pacific-Northwest suggest. Groundwater behaviour is generally controlled by regional features, but subject



Field shear strength testing

to very significant localized terrain. It is a crucial factor in the triggering of landslides. A companion interpretation of long-term groundwater records at Carnation Creek, in partnership with the Canadian Forest Service, reveals the potential for occasional, large pulses of water pressure in the hillslope soils. Although the phenomenon is understood, the new analysis suggests these groundwater pressures exhibit long-term trends that are well-suited to incorporation in a risk-based approach to assessment of slope stability.

The follow-up work at Jamieson Creek has involved installation of an automated groundwater monitoring system, with radio-telemetry of data to UBC for analysis during storm activity this winter and spring. It is intended to characterize trigger mechanisms at a site where failure has occurred, and validate the applicability of proposed new techniques.



Groundwater monitoring probe

This research is intended to improve the ways in which we map and assess landslide-prone terrain. Thanks and recognition are given to the many individuals in government and industry who have contributed to the success of this collaborative work, and the related graduate studies of John Wilkinson and Jussi Jaakkola.

For further information on landslide initiation and runout contact Dr. Jonathan Fannin, P. Eng., at (604) 822-3133; fax (604) 822-9106 or e-mail fannin@civil.ubc.ca. □

DEPARTMENT NEWS

The face of the Department is changing. We have two new members. Dr. Roy Sidle, a hydrologist, has joined us by accepting the Forest Renewal BC (FRBC) Chair in Forest Hydrology which is a joint position with the Department of Geography. Also, Dr. Stephen Shepperd has accepted a joint position, this one between Forest Resources Management and Landscape

Architecture. The search for the FRBC Chair in forest management continues, as it is proving to be difficult to locate appropriate candidates. On the other side of the ledger Dr. Joe McNeel, who taught in the Operations program, has left to take a position in West Virginia. Patrick Matakala, a Ph.D. graduate who served as a lecturer for several years, has left the

Department to work for FAO. The latter two are something of a homecoming for Joe and Patrick and we wish them well.

We are currently searching for an instructor in Forest Operations to assist in our undergraduate teaching and field schools. □

RESEARCH HIGHLIGHT

New lumber properties for Japanese "2x4" housing

THE Japanese building codes for the "2x4" and the traditional Japanese post and beam ("P and B") house are being revised by the Japanese Ministry of Construction (MoC) as part of a broad effort to open building products markets, increase competitiveness and reduce building costs.

In early 1997, the Ministry of Construction approved a new performance-based design standard for Japanese "2x4" housing. In August 1997, the MoC assigned new engineering design properties for Canadian

and U.S. dimension lumber¹ used in the "2x4" housing system. Procedures for calculating design properties for lumber differ from the previous Japanese practices in two fundamental ways. First, the new design properties include a larger safety factor. The safety factor of 2.1 in "old" "2x4" code² was increased to 3 so that design properties for visually graded dimension lumber are now consistent with other wood products. Second, the MoC adopted the practice of calculating design properties from tests of full size members.

Bending strength properties for Douglas-fir, Canadian Hem-Fir, SPF and US Hem-Fir are summarized in Table 1. Increasing the safety factor and introducing full-size test data (including size effects) has reduced design stresses for Canadian and US lumber and changed species relationships.

The new code provisions recognize the superior performance of "2x4" systems over single members. Design stresses are up to 25% higher for floors and roof systems. In addition, the MoC adopted a 50-year basis for design for 2x4 housing

and introduced new duration of load factors which provide for further increases in design properties for "2x4" systems.

The new assigned properties and the new performance-based design criteria impact the span tables. For a typical floor system — 15 mm sheathing on 2 x 10 joists spaced at 455 mm — the maximum floors spans (Table 2) have increased for Canadian SPF and Hem-Fir.

Table 2

Spans for No. 2 grade 2x10 floor joists

Species	Old code (m)	New code (m)
D-Fir	4.58	4.16
Hem-Fir (N)	4.25	4.39
SPF	4.07	4.16
Hem-Fir (US)	4.25	4.08

Performance-based building codes can have a positive impact on markets for "2x4" and "P and B" building products from B.C. The new "2x4" span tables should support further growth in market share for B.C. wood products. The proposed performance-based "P and B" code could create similar opportunities for B.C. products in "P and B" or "hybrid" systems for new multi-storey and semi-fireproof building applications.

To fully exploit the potential for B.C. products, we must create state-of-the-art wood building design research programs and participate in performance-based code development in Japan. At UBC, we are collaborating with industry to address these research and building code needs internationally.

For more information, please contact Dr. J.D. Barrett at (604) 822-5852; fax (604) 822-9104 or e-mail dbarrett@unixg.ubc.ca. □

Table 1

Design properties for Canadian and U.S. dimension lumber in Japan (units: kg f/cm²)

Species	Grade	Old code (all sizes)	New code	
			2x4	2x10
D-Fir	SS	140	122	83
	N2	100	72	49
Hem-Fir (N)	SS	120	103	70
	N2	90	80	54
SPF	SS	110	102	69
	N2	75	72	49
Hem-Fir (US)	SS	120	115	78
	N2	90	69	47

¹The dimension lumber (2x4, 6, 8, 10 and 12) used in Japanese "2x4" housing system is imported exclusively from Canada and the US. The design properties were based on a submission made by the Council of Forest Industries with technical support from UBC.

²The Japanese "2x4" housing system was introduced from Canada in the early 1970's.

³The Hem-Fir (N) designation is used to differentiate Canadian (N) and US Hem-Fir.

DEPARTMENT NEWS

The undergraduate Wood Products Processing Program attracted 34 new students (Year 1: 22; Year 2: 11 and Year 3: 1) for September 1997 — the most new students ever. The total undergraduate enrolment stands at 75 students. Industry interest in the students remains high. All students eligible for the Coop program were placed successfully in industry.

Our graduate program is the key component of our education and research mission. The Graduate program enrolment in-

creased by 7 to bring the total enrolment to 51 students.

Delivering high quality education requires that we attract national and international specialists to deliver the undergraduate program. For the Fall term of 97/98, Professor Scholz (wood machining, FH Rosenheim), Dr. Tröger (wood machining, U. Stuttgart), Mr. Mark Bramer (wood processing, Conestoga College) and Mr. Sepp Gmeiner a wood processing specialist from Schuler Associates, are visiting lecturers in

Wood Products Processing.

We are pleased to announce that Drs. Paul Morris and David Plackett of Forintek Canada Corp. have been appointed as Adjunct Professors. Michael Flach, Professor of Construction and Architecture in the School of Architecture in Lyons, France, is visiting UBC to collaborate in the wood building design and construction field.

Dr. Stavros Avramidis is taking sabbatical leave in Europe. Dr. David Cohen is on sabbatical leave at Forintek Canada Corp. □

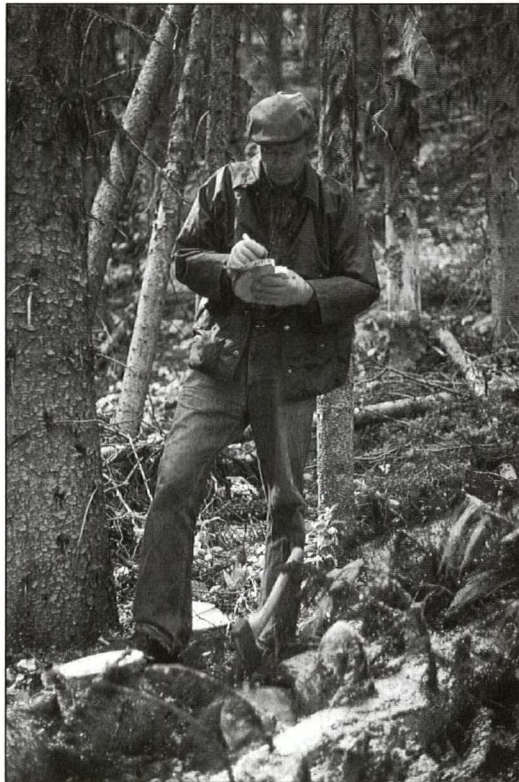
RESEARCH HIGHLIGHT

The return of dendrochronology to the Forest Sciences Department

WE are quite familiar with the estimation of the age of a tree by counting the growth rings from a disk or core extracted from the lower part of a tree stem. However, within the growth rings there lies much more information. The growth of trees is affected by year-to-year variation in weather, resulting in a recorded sequence of wide and narrow rings. Trees that show the most pronounced ring pattern in relation to weather conditions occur on sites that are sensitive to fluctuations in weather, thus are most likely to reflect the influence of weather in their rings. It is the study of this tree-ring pattern and the assigning of specific dates to the tree rings that forms the basis of the field of *dendrochronology*, a field that has been applied to a variety of situations. More than 25 years ago our Faculty organized a conference on biology of tree-ring formation, methods of measurements of tree rings, methods of analysis, and uses of tree-ring data (Smith, J. Harry G. and John Worrall. 1970. Tree-ring analysis with special reference to Northwest America. Bulletin No. 7, Faculty of Forestry, University of British Columbia).

Dr. Jaroslav Dobry, a visiting scientist from the Academy of Sciences of the Czech Republic, has been at the Forest

Sciences Department for the past five years applying his dendrochronological expertise to British Columbia. Apart from



Dr. Dobry examines a subalpine fir disk for the presence of compression wood in the ESSF zone near Merritt, B.C.

helping students, he has been working in two areas, in particular, assigning a date to ecological events, and reconstructing past climate.

Dr. Dobry uses a procedure for matching the ring pattern of known dates with the ring pattern from wood of unknown dates in a given area, referred to as *crossdating*. For example, he has developed chronologies of western redcedar (*Thuja plicata*), the species mostly avoided because of its complacent growth. This way he determined the date of death of western redcedar snags and downed logs. Dr. Dobry is assisting forest ecologists in stand dynamics studies in old-growth stands. Additionally, he is working on reconstructing the fire history of Douglas-fir stands in the Alex Fraser Research Forest, on Pacific silver fir (*Abies amabilis*) and western larch (*Larix occidentalis*) chronologies, and will be attempting to correlate the ring pattern of lodgepole pine (*Pinus contorta*) with bog formation and dynamics in the Prince Rupert area.

For further information, please contact Dr. Jaroslav Dobry at (604) 822-3415 or Dr. Karel Klinka at (604) 822-3047, fax (604) 822-5744 or e-mail klinka@unixg.ubc.ca. □

DEPARTMENT NEWS

Effective July 1, 1997, Dr. Cindy Prescott has been appointed as Assistant Professor in Forest Nutrition.

Dr. Gordon Weetman has been appointed to the FRBC Endowed Chair in Silviculture.

Dr. Tom Sullivan, Associate Professor in Forest Wildlife, resigned as of June 1997. He is currently appointed as an Adjunct Professor in the Department. Dr. Walt Klenner, our first Visiting Professor in Conservation Biology under FRBC, will be

teaching Tom's courses for the current academic year.

Drs. Fred Bunnell, Hamish Kimmins and Bart van der Kamp are on sabbatical leave for the current academic year.

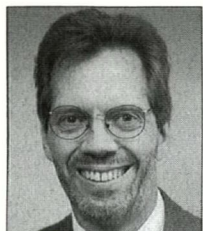
In August, Dr. John McLean presented a paper on "*Silvicultural controls and management of genetic resistance in rapidly growing plantations*" at the IUFRO International Forest Insect Workshop in Chile. John is on administrative leave until July 1998. Dr. Lisa Poirier,

who has recently joined our Department as a teaching support technician, will be teaching his third year entomology class while he is away.

Dr. Karel Klinka is producing summaries of results of recent studies in silvics and forest ecology at his website: <http://www.interchg.ubc.ca/klinka>.

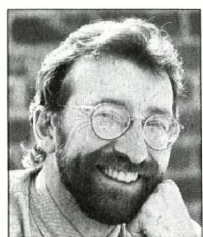
Dr. Kermit Ritland has been appointed as Associate Editor for the Canadian Journal of Botany and the American Naturalist. □

New appointments



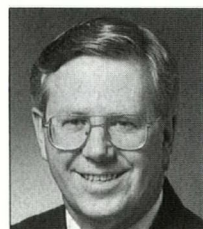
Dr. Roy C. Sidle has joined the Department of Forest Resources Management as Professor and FRBC Chair in Forest Hydrology. This is a joint appointment with the Geography Department. After completing his Ph.D. at Pennsylvania State University in 1976, he was a research hydrologist for the USDA Agricultural Research Service in West Virginia and then moved to Oregon State University where he led the Watershed Extension Program from 1978 to 1980. Since that time he has been in research and project leadership positions with US Forest Service Research in Juneau, Alaska, and Logan, Utah. His research focused on slope stability, watershed processes, and water quality. For the past 3 years, Roy has been conducting research and managing an international program within IGBP in Denmark and Holland. His current research interests include cumulative watershed effects, headwater hydrology, and landslide studies.

Dr. Sidle can be reached at (604) 822-3169, e-mail sidle@unixg.ubc.ca.



Dr. Stephen Sheppard is joining the Faculty of Forestry (Forest Resources Management) and Landscape Architecture Program as Associate Professor. He obtained his M.Sc. in Forestry at UBC in 1976, and his Ph.D. in Environmental Planning at UC Berkeley in 1982. He has worked in private practice in the US and UK for over 20 years, both as a specialist in visual resource management and visualization techniques, and as a senior planner applying GIS and environmental impact assessment techniques. His research interests at UBC will focus on the integration of GIS, computer visualization, and public involvement techniques to support decision-making on forest resource and land planning issues where there are aesthetic or social/community concerns. He is charged with developing a centre of excellence at UBC in this area. He will teach courses in GIS, visual resource management, outdoor recreation and conservation, and open space planning.

Dr. Sheppard can be reached at (604) 822-4481, e-mail shep@unixg.ubc.ca.



Mr. Pat Cramond has joined UBC as an Instructor in Mechanical Engineering, after spending 23 years in industry, working mainly with forest products processing machines. As Product Development Engineer for a major B.C. machinery manufacturer, he worked on the design and development of waferizers and blenders for the OSB industry, as well as bandmills, chippers, optimizers, and carriages for the sawmill industry. Pat is appointed jointly between the Department of Wood Science and the Department of Mechanical Engineering (Faculty of Applied Science). His teaching will include a course on machine component design to forestry students and industry training courses at the new Centre for Advanced Wood Processing. Pat has a B.A.Sc. degree from UBC in Mechanical Engineering. He strongly believes that technology can do more to improve quality and productivity in wood processing, and he looks forward to instilling the same belief in others.

Mr. Cramond can be reached at (604) 822-1287, e-mail pcramond@mech.ubc.ca.

Associate Deans

After five years of superb service to the Faculty, Dr. John McLean has taken a well deserved year of administrative leave. In his place, two new associate deans have been named for the upcoming academic year.

Dr. Chris Chanway — Associate Dean of Graduate Studies

Dr. Rob Guy — Associate Dean of Research

(604) 822-3716
(604) 822-6023

Forestry Alumni Fundraising Campaign

The Forestry Alumni Campaign continues to grow each year and *now has the highest participation rate of all Faculties on campus*. Special thanks go to Gerry Burch for his hard work as campaign chair for the past three years. We must also thank our alumni who have helped us obtain such impressive results. Foresters truly are a generous and cohesive group.

Co-chairs for the 1997 campaign are Mr. R.J. (Russ) Clinton, Senior Vice-President, Corporate Development, West Fraser Mills Ltd. and Mr. C.M. (Charlie) Johnson, Chairman, PRT Management Inc. Russ and Charlie are looking forward to working with their fellow Alumni to support forestry education at UBC.

Increasing student enrolment is an expression of the high level of education received in the Faculty of Forestry, as well as the growing demand within the forest community for highly qualified people.

You will be receiving a phone call this fall from a classmate or fellow alumnus, asking you to support the annual alumni appeal. Your annual gift will help ensure that others have the opportunity to join our ranks as forestry professionals. Funds raised will be used to support undergraduate scholarships, the UBC Research Forests, and the Forestry Endowment Fund. This year's phonathon is scheduled for **October 14, 15 and 16th**.

For further information please contact Tara Scott MacKenzie at (604) 822-8716, fax (604) 822-8645, e-mail tarscott@unixg.ubc.ca.

BSF – revised 4-year program

At a recent Faculty Meeting the recommendations of the review of the BSF (management) program were considered, and the Faculty chose by vote to continue with a 4-year program. Our thanks go to the hard-working Task Force members: Drs. Baskerville, Marshall, Nelson, Tait and van der Kamp. The Curriculum Committee, chaired by Dr. David Haley, has been charged with creating a 4-year program consistent with the intent of the Task Force, and moving this through the University approval process promptly. We hope to have the new program implemented by 1999.

FOREST NEWS

from the Malcolm Knapp Research Forest

EMAN site established

We have a number of long-term research and monitoring projects at the Malcolm Knapp Research Forest. The newest addition is an EMAN site (Ecological Monitoring and Assessment Network). This federally initiated network aims to span all ecozones and to provide comparable data (monitoring of environmental change) over a long period of time from across the country.

We are currently beginning the set-up of our 20-hectare EMAN site in an area bordering Golden Ears Provincial Park. The area includes a small creek and a lake, and a diverse variety of landscapes — everything from small floodplain areas to rocky outcrops. Two 1 hectare plots will be set aside for monitoring tree growth, and the rest of the area will be available for different kinds of monitoring work. In the initial stages, we plan to monitor water quality, soils, forest invertebrates, trees, herbaceous vegetation, and bird populations.

However, we hope that as the EMAN site becomes a long-term project, other environmental factors will be monitored and added to the common database. So far, several volunteer groups have expressed interest in helping with this project at the Malcolm Knapp Research Forest, and a local high school in Maple Ridge will use the area to teach environmental education to their brightest science students. In the future, some of these students may be able to assist researchers working in the area. Our EMAN site is an extremely valuable addition to the Research Forest, from an educational, research and environmental point of view, and we are very excited to be involved in this cross-country network.

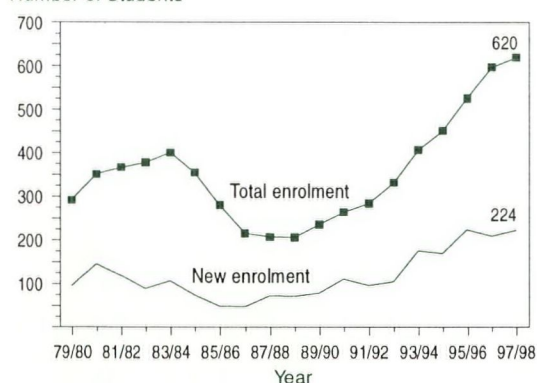
For further information, please contact Peter Sanders, Research Forests Director at (604) 463-8148, fax (604) 463-2712 or e-mail sanders@unixg.ubc.ca. □

Undergraduate enrolment

These enrolment statistics are preliminary and will be finalized in mid October

Our undergraduate enrolment for the 1997/98 session is up 4% from last year and now stands at 620 students (not including visiting and exchange students) — a new record. In total, 224 new students entered the faculty this year (compared with 217 new students in 1996). After a highly successful year of recruiting, the new Wood Products Processing Program attracted over 80% more new students than last year.

Number of Students



Both the B.S.F. and B.Sc. (Natural Resources Conservation) degrees are operating at near capacity, with a total of 388 and 131 students enrolled respectively. New student enrolment reached 131% of target for the first year of the B.S.F. degree and 140% for the Natural Resources Conservation program. □

Upcoming... Careers Evening

Planning is underway for the **6th Annual Careers Evening** for all forestry undergraduates. The event will take place on **Wednesday, October 29**. Guest speakers will be discussing employment options within the resources sector.

All alumni are invited!

Further information can be obtained from Helen Driscoll, Coordinator of Student Services at (604) 822-3547 or e-mail hdriscol@unixg.ubc.ca.

Upcoming...

Schaffer Lecture

The Leslie L. Schaffer Lectureship in Forest Sciences was established in 1981 in the memory of Leslie L. Schaffer, D.Sc., former Executive Vice-President of Western Plywood Co. Ltd. The fund was established by Mrs. Leslie L. Schaffer to finance lectures and publications by visiting forest scientists at the Faculty of Forestry, UBC.

This year's Schaffer Lecture will be held on **Monday, November 3, 1997**, when Dr. Daniel Botkin will speak on "*Getting the paradigm right: The essential ecological foundation for the conservation and sustainable management of B.C.'s forests.*" Dr. Botkin is President of the Center for the Study of the Environment, Santa Barbara, CA, and Professor of Biology, George Mason University, Fairfax, VA.

The lecture will be held at the Faculty of Forestry in conjunction with an evening of poster displays on faculty and student research. Invitations to this free public event will be mailed out shortly.

Further information can be obtained from Dr. Susan Watts at (604) 822-6316 or e-mail suwatts@unixg.ubc.ca.

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