

SIMON FRASER UNIVERSITY**Senate Committee on University Priorities
Memorandum****TO:** Senate**FROM:** John Waterhouse
Chair, SCUP
Vice President, Academic**RE:** Proposal for name and program
changes to the Forest Renewal BC
Endowed Chair in Terrain Analysis
and Forest Geoscience (SCUP 05-055)**DATE:** October 14, 2005

At its October 5, 2005 meeting SCUP reviewed and approved the proposal from the Vice-President, Research recommending changes to the FRBC Endowed Chair in Terrain Analysis and Forest Geoscience. The changes are to the title of the Endowed Chair and the program's focus, specifically on resource geoscience.

There are no changes to the management or disbursement of the endowment income, nor any changes to the Terms of Reference.

Motion

That Senate approve and recommend to the Board of Governors the change of the title of the "FRBC Endowed Chair in Terrain Analysis and Forest Geoscience" to the "FRBC Chair in Resource Geoscience and Geotechnics" and the changes to the proposed research program, reflecting a new emphasis on resource geoscience.

encl.

c: M. Pinto
M. Plishcke
D. Stead
S. Dench

SIMON FRASER UNIVERSITY

March 7th 2005

Proposal for a change in name

from

the "FRBC Endowed Chair in Terrain Analysis and Forest Geoscience"

to

the "FRBC Chair in Resource Geoscience and Geotechnics".

The current SFU Forest Renewal BC Endowed Chair, Dr. Doug Stead, took up this position in September 2000. The last four years have seen significant growth in both teaching and graduate research in forestry geoscience in the Department of Earth Science. The focus of the Chair has reflected the expertise of Dr Stead and others in the Department and has emphasized both forestry geotechnics and geoscience.

A prime mandate of the FRBC Chair was to set up both undergraduate and graduate programs in Forest Geoscience. Within two years of appointment these mandates were achieved. A Certificate of Forest Geoscience is now offered at SFU. As part of this certificate, four new undergraduate courses were developed and have been offered by the Chair (with the assistance of Dr. Brent Ward). Dr. Stead has developed and taught two new classes in soil and rock engineering, and Forestry Geotechnics, a specific requirement of the conditions of appointment. Two further industry-oriented field/visiting courses in Forest Harvesting Technology and Terrain Stability Assessment were also developed and offered.

A vibrant graduate research program has been established involving up to 7 graduate students (5 M.Sc. and 1 Ph.D.), 1 post doctoral fellow and several undergraduate research assistants (1 NSERC funded). Three M.Sc. students will have completed their studies by Spring 2005. Research has been undertaken in collaboration with the Ministry of Forests and the private forest sector. The Chair has been involved in national Earth Science advisory policy as President of the Canadian Geoscience Council and also as a member of the Geological Survey of Canada Advisory Board and the Ministers' National Advisory Board for Earth Sciences. Dr. Stead has served as the Department of Earth Sciences Graduate Program Chair and as Department Chair (each for one year).

In 2002, dissolution of Forest Renewal of British Columbia led to the negotiation of a new Endowment Replacement Agreement contract between Simon Fraser University and the Ministry of Advanced Education. Since the time of the demise of Forest Renewal BC

however, there has been a marked downturn in employment prospects for graduating geoscience students within the forest geoscience sector. Undergraduate students still enthusiastically enroll in the soil and rock engineering class, but are less inclined to study forestry-specific classes. In recognition of this, and with the agreement of the FRBC Advisory Panel, Dr. Stead renamed the "Forestry Geotechnics" course to "Resource Geotechnics". Earth science students who have taken the new classes in soil and rock engineering and geotechnics have become highly sought after by industry with several students obtaining employment in international consultancies and geotechnical instrumentation companies.

In addition to a declining interest in the Certificate of Forest Geoscience since the demise of FRBC, there has been a marked reduction in funding suitable for the support of graduate-based forestry geoscience research. Dr. Stead continues to undertake forestry-related research in collaboration with the Ministry of Forests and industry but in light of budgetary constraints (both internal and external) it is becoming increasingly necessary to diversify the activities of the SFU FRBC Endowed Chair.

An argument has already been made to both the Earth Sciences Department (during a recent external review) and to the Endowed Chair Advisory Panel to diversify the chair to encompass the broader mandate of Resource Geoscience. Such a move would maximize the benefits of the endowed chair to the province and to the university. This move would align with new initiatives in the Earth Sciences within Canada and BC. It would also align more closely not only with the expertise and experience of the incumbent Chair but also with recently hired new professors in the Earth Science department.

It is proposed that the SFU FRBC Chair be relabeled from the Chair in "Terrain Analysis and Forest Geoscience" to Chair in "Resource Geoscience and Geotechnics." A new emphasis on resource geoscience within the SFU Department of Earth Sciences would be strengthened by this development. The Chair's Professional Engineering status and expertise would also be recognized by the inclusion of "Geotechnics" in the chair title.

This change would emphasize activities related to sustainable resource development and offer resource geoscience/geotechnics expertise within the following sectors:

- Forestry
- Mining
- Hydrocarbons
- Hydro-electric power
- Agriculture
- Groundwater/Surface Water
- Urban development
- Tourism.

Given the developing importance of several of these sectors within both BC and Canada this development is seen as a crucial and forward looking strategy - if the endowed chair

is to function to the maximum benefit of the university and province. Such a move would provide:

- Increased resource-related geoscience education opportunities at the undergraduate and graduate level. (Serious consideration would be given to reorienting the Certificate in Forestry Geoscience toward a Certificate in Resource Geoscience. This could provide streams relevant to the various resource sectors).
- Increased external research funding opportunities for the incumbent endowed chair and other faculty.
- Increased flexibility to allow the incumbent chair to direct research toward critical resource sectors of the day.

As the current chair reaches the end of the final year of the original five year contract the successes during this period have been marked, particularly in light of external developments which have seen reductions in both employment, educational and research opportunities in forestry geoscience. The FRBC Chair has developed a unique earth science-physical geography-geotechnical student approach to natural hazards. This originally was solely forestry-related but has diversified to relate to more wide reaching geohazard environments. International and national research collaboration in this area has been widespread. Advanced numerical modelling courses have been offered to industry and SFU has been recognized as an international leader in the application of state-of-the-art geomechanical modelling of landslides. Strong research ties are being developed with several departments at UBC including mining engineering and earth sciences. Industry participation in teaching has increased significantly in the geo-engineering sphere. The Certificate of Forestry Geoscience has been received with interest. When presented at the GSA in Seattle in 2003 it was seen as an excellent initiative. This initiative should be extended to take advantage of a wider group of resource oriented students. SFU has become a provincial centre of excellence in terrain geoscience and forestry geotechnics through the expertise of Drs Stead, Clague, Ward and Allen in addition to physical geography colleagues. A multi-disciplinary approach to resource and environmental teaching and research extending across the earth science, geography and resource and environmental management departments has led to both national and international recognition. The Department of Earth Sciences has recruited three new faculty with direct relevance to these areas since the appointment of the FRBC Chair. An increased supply of much-needed highly trained personnel in the fields of environmental geoscience, forestry geoscience and resource geotechnics has been accomplished. As the demand varies in these disciplines faculty at SFU remain able to provide high level education to the varied aspects of the environmental and resource geoscience. Research results from the Forestry Geotechnics and Engineering Geology research group have been presented at a wide variety of fora; from APEBG BC DEGIFS sessions to national and international conferences. Publication venues have ranged from international journals and conferences to ASPECT. The awareness of the FRBC Chair activities have been publicized in several venues including a major one page national Globe and Mail article on careers in geoscience and through senior administrative duties in national (Ottawa-based) bodies. The FRBC chair has been an invited attendee at landslide workshops both nationally and internationally (through NATO). He has participated in advanced landslide modelling

courses offered to industry in collaboration with UBC and has also been on the organizing committee of several national and international conferences.

The FRBC Chair has todate received support from both the FRBC Advisory Panel and the Department of Earth Science to reposition the chair in the general area of resource geoscience/geotechnics. It is suggested that the prime mandate of the Chair would be to ensure sustainable development of land and resources in BC and Canada. This would be achieved through combined roles in education and research relevant to the economic and environmentally safe exploitation of Canada's resources. The Chair would continue to strive to maintain Canada's reputation as a nation which uses innovative technologies in the responsible exploitation of its resources. It is argued that the reorientation of the SFU FRBC Endowed Chair to recognize all natural resource sectors would not only maximize the provinces investment in the Chair but would also be clear evidence of a genuine desire for sustainable resource development. These goals would be accomplished through:

- The offering of high level courses in resource geoscience and geotechnics at the undergraduate and graduate levels.
- The establishment of a Certificate in Resource Geoscience
- Masters and Doctoral Research in Resource Geoscience and Geotechnics.
- The initiation of a Provincial Centre of Excellence for Resource Geoscience and Geotechnics. This would include relevant departments at SFU, UBC and other BC universities. This centre would not only provide academic leadership in resource issues but could liaise with government to address the resource/environmental issues of tomorrow. Issues such as sustainability are common to all resource sectors and would benefit from interchange of ideas.
- Conference and workshops related to resource geoscience/geotechnics research.

It should be strongly emphasized that the Chair will continue to strongly support the forestry geoscience/geotechnics sector. The Chair would however also endeavor to diversify activities to provide expertise in research and training to other BC resource sectors.