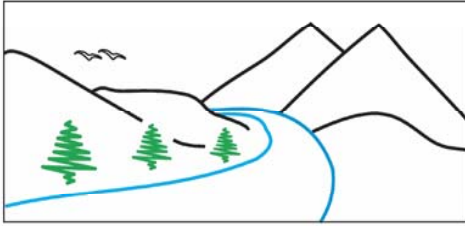


NRESi



"Our environment is our future"

RESEARCH COLLOQUIUM SERIES

Dr. Tobias Bolch



UNBC
Geography
Program



FRIDAY

Feb. 15, 2008

3:30 - 4:30

LECTURE
THEATRE

7-150

LIGHT
REFRESHMENTS
SERVED AT 3:20 PM

Glacier Change in the Mountains of Asia

Glaciers are key indicators to assess climate change in remote mountain areas where climatic stations are rare or non-existent. Glaciers are also an important source of fresh water. Since the end of the Little Ice Age, and especially since the end of the last century, there has been a nearly global glacier recession. However, this does not imply a synchronous behaviour of all glaciers.

There are local differences and even advancing glaciers. Multi-temporal satellite imageries are ideal to study glacier changes in detail and the best way to investigate glaciers in remote mountainous areas.

Following an overview of the climatic conditions and the glacier changes in the whole Asian mountain ranges, the talk focuses on two specific areas: the Northern Tien Shan, influenced mainly by westerly cyclones and situated at the north-east edge of the Asian mountains, and the monsoon influenced Khumbu Himal at Mt. Everest, situated on the southern edge.

The talk presents not only details on the glacier changes and climatic variables but also the usage of different space imagery such as the early Corona spy images, Ikonos, Landsat TM, and Terra ASTER data. Besides the visual interpretation, these data can be utilized to automate glacier mapping, to generate multi-temporal digital elevation models, and to calculate the glacier velocity.

At the end of the talk glacier changes in the Asian mountains are compared with the situation in the European Alps and the results from the recently completed Western Canadian Glacier Inventory.