Syllabus – Spring 2010
Watershed Dynamics Through Time
RNEW 5990; cross-listed in Geology, Geography, and Ecology
Fridays, 2:10–3:00; 1 Credit

Instructors: Bryan Shuman, Paul Heller, Neil Humphrey and Cliff Riebe (Geology & Geophysics); Carl Legleiter (Geography) and Scott Miller (Renewable Resources)


Description: The aim of this seminar is to examine watershed processes from the scale of seconds to millions of years. Using a series of readings and presentations, we will discuss physical, biotic, geochemical and climatic processes that govern watershed dynamics from diurnal flow regimes to landscape evolution. Our aim is to be as cross-disciplinary as possible as a means to enhance fruitful connections between disciplinary perspectives. The specific topics covered will be chosen/adjusted based on the students involved.

Each graduate student is expected to team up with a faculty for a given day’s presentation. Everyone else is expected to read and participate in discussion.

Expected Course Schedule

15-Jan Introduction
22-Jan Miller: Watershed and channel intro
29-Jan Humphrey: Rivers and tectonics
5-Feb Riebe; Is there a topographic signature of life
12-Feb Shuman: sediment records of biogeochemistry
19-Feb Riebe: Biogeochemistry and erosion
26-Feb Miller: Green stuff and stream health
      Shuman: Vegetation-hydrology-climate interactions and feedbacks
5-Mar Miller: Human effects and dams
12-Mar Spring Break
26-Mar Legleiter: sediment delivery
2-Apr Easter Break
9-Apr Legleiter: river shape and behavior
16-Apr Shuman: Long-term droughts
23-Apr Heller: tectonics vs. climate
30-Apr Heller: catastrophic floods