



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** 2004OR45B

**Title:** Satellite Remote Sensing of Wildfire Induced Changes in Hydro-Geomorphological Landscape Patterns and Processes

**Project Type:** Research

**Focus Categories:** Geomorphological Processes, Hydrology, Sediments

**Keywords:** Channel, erosion, geomorphology, hydrology, remote sensing, sediment, wildfire

**Start Date:** 02/15/2004

**End Date:** 02/14/2005

**Federal Funds:** \$10,618

**Non-Federal Matching Funds:** \$21,563

**Congressional District:** Oregon 5th

**Principal Investigator:**  
Stephen Schoenholtz

### Abstract

Severe wildfires result not only in dramatic changes in vegetation cover, but also induce significant changes in hydro-geomorphology. These changes may include decreased infiltration, increased overland flow, increased soil erosion, and debris-flow initiation during post-fire storm-events. A number of geomorphic variables (e.g., fire severity) have been identified that can lead to increased erosion activity; however, present methods of characterizing these variables within burnt basins may be both time-consuming and labor-intensive. Satellite remote sensing holds great potential for rapid assessment of these variables. This research proposes to use data from the Moderate resolution Imaging SpectroRadiometer (MODIS) and the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) to map and characterize burn-induced erosion variables at multiple spatial scales.