DONALD M. HOOPER

Senior Research Scientist

Geosciences and Engineering Division

Ph.D., Geological Sciences, State University of New York at Buffalo, 1994
M.S., Geology, George Washington University, 1988
B.S., Geology, University of Missouri - Rolla, 1984

Dr. Hooper is a volcanologist and geomorphologist with research experience in landscape evolution-terrain analysis, surface processes, volcanic processes, volcanic hazards, digital topography and remote sensing, desert processes and landforms, numerical modeling, and planetary geology. As a Senior Research Scientist at the Center for Nuclear Waste Regulatory Analyses (CNWRA), he is the Principal Investigator of the Airborne Transport of Radionuclides project and a lead contributor to the Redistribution of Radionuclides in Soil project. A key component of his work within the High-Level Waste program involves implementing conceptual and mathematical models for atmospheric dispersal and subsequent deposition of volcanic ash from a potential eruption at Yucca Mountain, Nevada. Dr. Hooper has helped develop a process-level model to evaluate the long-term redistribution and remobilization of contaminated tephra or ash at the potential high-level waste repository at Yucca Mountain. This research encompasses a mass-balance approach to model sediment sources, transport processes, and storage elements for the Fortymile Wash drainage system at Yucca Mountain.

Prior to joining Southwest Research Institute, Dr. Hooper's research included developing a geomorphologic model of the erosion of scoria (cinder) cone volcanoes; geomorphologic studies of fault scarps with digital topographic data acquired by airborne radar; digital elevation model (DEM) development for volcanic flow modeling and hazard assessment for several volcanoes in Alaska, Mexico, and the West Indies; numerical modeling of magmatic bubble growth; Landsat Thematic Mapper (TM) data to map dune morphology and characterize spectral reflectance properties of stabilized dune sands in the northern Kalahari (Botswana); assessment of possible origins for the Medusae Fossae Formation, Mars; analysis of the spatial distribution of both lunar basins and martian craters; geologic mapping of Ganymede (Jg-10) from Voyager image data; and numerical modeling of the degradation of lunar craters. He has taught courses in geomorphology, physical geology, historical geology, environmental geology, digital data analysis for geologists, and scientific inquiry and exploration. Dr. Hooper has written or collaborated on numerous scientific papers and reports and along with his colleagues has made more than 40 presentations at conferences in the United States, Canada, Mexico, Europe, South America, and the Caribbean.

PROFESSIONAL CHRONOLOGY: Smithsonian Institution, Center for Earth and Planetary Studies: research assistant/geologist, 1985-9; Guggenheim postdoctoral fellow, 1994–5; University of Puerto Rico at Mayagüez: postdoctoral research associate, 1995–7; State University of New York at Buffalo: research assistant professor, 1997–9; State University of New York at Plattsburgh: visiting assistant professor, 1999–2001; Youngstown State University: assistant professor, 2001–3; Southwest Research Institute: 2003-[research scientist, 2003–6; senior research scientist, 2006-present].

MEMBERSHIPS: Geological Society of America, American Geophysical Union.

September 2006