

24 October, 2007

To: Dr. Edward F. Duke, SD NASA EPSCoR Director;

Subject: 2007 South Dakota NASA EPSCoR Travel Grant Report

1) Name of Traveler: Pravara Thanapura, Research Associate, Engineering Resource Center, College of Engineering, South Dakota State University (SDSU), Box 2220, Harding Hall, SDSU, Brookings, SD, 57007; Phone: (605) 688-5487; Fax: (605) 688-5880; E-Mail: pravara.thanapura@sdstate.edu

2) Date of Meeting/Event: Tuesday, June 19, 2007

3) Destination: NASA Goddard Space Flight Center (GSFC), Greenbelt, Maryland

4) Original Objective/Goal

To visit Goddard Space Flight Center and NASA for face-to-face discussions, present my PhD research results and make some personal network connections to firm up NASA collaborations to support my on-going NASA funded research project entitled "Testing the Composite Runoff Index Geographic Model Using Medium-High-Resolution Digital Imagery & GIS for Urban Rainfall-Runoff Estimation: The Rational and the NRCS-CN Methods, Las Vegas, NV," funded by South Dakota NASA EPSCoR Program—the 2007 and the 2006-2007 Research Initiation Grants (RIGs) [Role: Principal; Investigator].

A) NASA Advisor/Collaborator:

Dr. Edwin T. Engman, Physical Scientist, GSFC

David L. Toll, Physical Scientist, GSFC

Hydrological Sciences Branch, Hydrospheric and Biospheric Sciences Laboratory, GSFC

B) Accomplishments—Activities and Potential Research Collaboration and Proposal

- Presented my published PhD research results. Presentation entitled “Mapping Urban Land Cover Using QuickBird NDVI and GIS Spatial Modeling for Runoff Index Estimation.” Discussed the research findings at the NASA: Code 614—Hydrological Sciences Branch Seminar (Attendees: ~8-10) [Reference: <http://neptune.gsfc.nasa.gov/calendar/view.php?id=64&year=2007&month=06&day=19>].
- Visited with selected scientists within the Hydrological Sciences Branch arranged by my NASA advisor and collaborator, Dr. Edwin T. Engman. Learned about current NASA research activities in advancing NASA water management, one of the NASA national priorities.
 - Satellite remote sensing of snow and its applications—an example of water storage estimation and irrigation research in South Dakota (Contact: James Foster, Physical Scientist).
 - The Land Data Assimilation System (LDAS) and associated land cover information to output water and energy budgets for the primary purpose of improving weather and climate prediction (Reference: <http://ldas.gsfc.nasa.gov/>) [Contact: Kristi Arsenault, Research Associate].
- Visited with Dr. Engman for his advice on a South Dakota NASA EPSCoR research white paper entitled “Remote Sensing for Water Quality Monitoring and Watershed Assessment on the Sisseton-Wahpeton” submitted on May 10, 2005, by Dr. Boris A. Shmagin, Research Associate and David R. German, Research Associate, SDSU Water Resources Institute and Mary O’ Neill, Program Manager, Engineering Resource Center. There may be potential interest and future collaboration with NASA. Reviewing and developing the white paper for a proposal were suggested.
- Visited with Dr. Engman for his guidance on my on-going EPSCoR projects and academic study. Please note that Dr. Engman is serving as my EPSCoR technical advisor as well as a member of my PhD committee (Reference: http://wmp.gsfc.nasa.gov/reports/WM_ProgRep_July2007.doc).