

SUDERSHAN GANGRADE

Environmental Sciences Division

Oak Ridge National Laboratory

Oak Ridge, Tennessee

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EDUCATION

Clemson University, SC
M.S., Environmental Engineering and Science

August, 2012

Indian School of Mines, Dhanbad, India
B.Tech., Environmental Engineering

May, 2010

RELEVANT PROFESSIONAL EXPERIENCE

Oak Ridge National Laboratory (Environmental Sciences Division), Oak Ridge, Tennessee

Post Masters Research Associate (March, 2014 – Present)

- Conducted high resolution distributed hydrological modeling to study extreme flood events and assess the impacts of climate change and land-cover on such events.
- Setup and calibrated Distributed Hydrology Soil Vegetation Model (DHSVM) for over forty hydrological subunits (HUC08 regions) in the United States.
- Enabled development of integrated modeling framework by conducting high resolution hydrological and flood modeling to generate estimates of probable maximum flood from probable maximum precipitation.
- Performed site specific flood hazard reevaluation assessments for Nuclear Regulatory Commission (NRC) for selected nuclear power plants in the U.S.
- Collected and processed hydrological data, digital elevation data, landuse and soil data to generate inputs for hydrological model.
- Performed statistical modeling to predict stream temperatures using statistical relationship between historical air temperature data and observed stream temperature.

Mundell & Associates, Inc., Indianapolis, Indiana

Environmental Engineer/Geophysicist (January, 2013 –March, 2014)

Engineering Intern (October 2012 – December, 2012)

- Worked on a wide variety of projects in the fields of environmental engineering, geophysics and geology including water resource exploration, karst mapping and preferential flow pathway detection.
- Downloaded extensive datasets and utilized ArcGIS, SURFER V.11 and Global Mapper to analyze data to accomplish project objectives and prepare technical reports.
- Performed analysis on spatial geophysical data by using several spatial interpolation techniques like kriging, nearest neighbor, inverse distance weighted and minimum curvature.
- Hands on experience in conducting survey and GPS data acquisition of environmental data and analyze it to prepare maps, figures for technical reports.

Clemson University, Clemson, SC

Graduate Research Assistant (August, 2010- August, 2012)

Summer Intern, SEG-GWB Project, (June – July 2010 & May – June, 2009)

- Lead Student Researcher for year 2010-11 for Society of Exploration Geophysicists – Geoscientists Without Borders Project (SEG-GWB) named “Addressing water crisis in rural India” led by Clemson University.
- Developed a novel analysis technique for transient Electromagnetic Induction (EMI) using statistical classification methods like cluster analysis aiming for improved water resource management.

- Conducted spatio-temporal data analysis and utilized classification techniques such as Gaussian Mixture Models, K-mean, and Principal Component Analysis to delineate meaningful zones for irrigation purposes.
- Extensively utilized ArcGIS and prepared scripts in MATLAB to perform spatial analysis of georeferenced time-lapse conductivity data.
- Developed and implemented a GIS database to store, query and process the collected data such as EMI, temperature precipitation, soil moisture and stream flow for the project.
- Installed and monitored of hydrologic instruments (moisture probes, lysimeter and weather station).
- Facilitated in the education of local villagers on project related topics such as water resources availability and management to create awareness.

PRESENTATIONS

- **Gangrade, S.**, B. S. Naz, S.-C. Kao, M. Ashfaq, R. Mei, D. Rastogi, B. L. Preston, E. D. Kabela, N. Singh, and V. Anantharaj (2015), High Resolution Distributed Hydrological Modeling for Extreme Flood Events, World Environmental & Water Resources Congress 2015, May 17 – 21, Austin, TX.
- Kao, S.-C., B. S. Naz, **S. Gangrade**, M. Ashfaq, R. Mei, and D. Rastogi (2014), Projection of Climate Change Impacts on Watershed Storage and Hydropower Generation, American Geophysical Union 2014 Fall Meeting, Dec. 14–19, San Francisco, CA.
- Naz, B. S., S.-C. Kao, M. Ashfaq, **S. Gangrade**, R. Mei, and D. Rastogi (2014), Climate Change Impacts on Reservoir Inflow in the United States, American Geophysical Union 2014 Fall Meeting, Dec. 14–19, San Francisco, CA.
- Ashfaq, M., D. Rastogi, R. Mei, S.-C. Kao, B. S. Naz, and **S. Gangrade** (2014), Ultra High-resolution Ensemble Projections of the Near-term Climate Change over the U.S., American Geophysical Union 2014 Fall Meeting, Dec. 14–19, San Francisco, CA.
- **Gangrade, S.** and S. Moysey (2012), Evaluation of Transient Electromagnetic Induction Measurements as a tool to Delineate Soil Management Zones in Agricultural Fields, Clemson Hydrogeology Symposium, Clemson, SC.
- **Gangrade, S.** and S. Moysey (2011), Evaluation of EM38 as a Tool for Improving Irrigation Practices in Rural India, 24rd EEGS Symposium on the Application of Geophysics to Engineering and Environmental Problems, Charleston SC.
- Moysey S., D. Matz, C. Guha, R. Ravindranath, M. Choudhary, **S. Gangrade** (2011), Integrating Hydrology and Geophysics to Evaluate the Impacts of Artificial Recharge on Groundwater in Rural India, Near Surface 2011-the 17th European Meeting of Environmental and Engineering Geophysics, Leicester, U.K.
- Moysey, S. M., S. P. Loheide, **S. Gangrade**, A. R. Mangel, A. Creighton, E. G. Booth, M. Weber, A. Striegl (2011), Mapping soil variability at the East Branch Pecatonica River Restoration Observatory using GPR and EM Induction, American Geophysical Union, Fall Meeting 2011 San Francisco, CA.

CERTIFICATIONS

- Engineer In Training (E.I.T)

PROFESSIONAL SERVICE / HONORS AND LEADERSHIP ROLES

- Member – ASCE Environmental and Water Resources Institute’s Hydrological Technical Committee
- Member – Oak Ridge Post-Doctoral Association Executive Committee
- Featured in ‘The Leading Edge’ Magazine (November 2013 issue), a publication for geoscience disciplines. (http://www.tleonline.org/theleadingedge/november_2013?pg=17#pg17)
- Invited as the only international student representative in *Society of Exploration Geophysicists – Geoscientist Without Borders* Project Board Meeting, Tulsa, Oklahoma (August 2012) to discuss and shape the future of the program.
- Graduate Research Assistantship, 2010-2012 at Clemson University, Clemson, SC.
- Member - Student Advisory Committee, Environmental Engineering and Earth Sciences, Clemson University.