Venkataraman (Venkat) Lakshmi

Carolina Trustee Professor
School of Earth, Ocean and the Environment
University of South Carolina, Columbia, SC 29208
Phone: (803)-777-3552; Fax: (803)-777-6610
Email: vlakshmi@geol.sc.edu

EDUCATION

Princeton University	Ph.D., Civil and Environmental Engineering, 1996
University of Iowa	M. S., Civil and Environmental Engineering, 1989
Indian Institute of Technology, Roorkee	B.E., Civil Engineering (Honors), 1987

EMPLOYMENT

2017-2018	Program Director, Hydrologic Sciences, National Science Foundation (rotator)
2015-2016	Cox Visiting Professor, Department of Geophysics, Stanford University
08/2015	Visiting Professorial Fellow, School of Civil and Environmental Engineering, University of New South Wales, Australia
04/15-07/15	Cox Visiting Professor, Department of Geophysics, Stanford University
2006-present	Professor, Department of Earth and Ocean Sciences University of South Carolina
2008-2011	Chairman Department of Earth and Ocean Sciences University of South Carolina
2003-2006	Associate Professor, Department of Earth and Ocean Sciences University of South Carolina
1999-2003	Assistant Professor, Department of Earth and Ocean Sciences University of South Carolina
2006-2007	Cox Visiting Professor, Department of Geophysics, Stanford University
1996-1999	NASA Goddard Space Flight Center Research Scientist
1990-1996	Research Assistant, Department of Civil and Environmental Engineering, Princeton University
1987-1990	Research and Teaching Assistant, Department of Civil and Environmental Engineering, University of Iowa

AWARDS AND HONORS

(1) Professional Engineer (PE), State of Maryland, Registration # 25394, 2002-present
(2) Senior Member, Institute of Electrical and Electronic Engineers, 2002-present
(3) NASA Group Achievement Award for the AQUA Mission 2003
(4) Cox Visiting Professor, Stanford University, 2006-2007; 2015-2016
(5) William Mong Visiting Research Fellowship, University of Hong Kong 2010
(6) Mortar Board Award for Excellence in Teaching, University of South Carolina, 2010-2011
(7) NASA Group Achievement Award for the SMAP Validation Experiment 2013
(8) Outstanding Associate Editor, Vadose Zone Journal 2014
(9) Carolina Trustee Professor, University of South Carolina 2016
(10) Nanshan Distinguished Lecture on the Environment, Southern University of Science and Technology, May 2017

GRADUATE STUDENT ADVISEE AWARDS

(1) Best Paper Award, Christel Purvis, M.S. (Biogeosciences) Ujjwal Narayan, PhD. (Hydrology) AGU Spring Meeting, 2006
(2) PhD Thesis award, Ujjwal Narayan, (PhD. 2006) Department of Geology, University of South Carolina, 2006
(3) Excellence in Graduate Studies University of South Carolina Ujjwal Narayan (PhD. 2006)
(4) NASA Earth System Science Fellowship (2005 – 2006) Ujjwal Narayan, (PhD. 2006)
(5) Taber Outstanding PhD Research Award Bin Fang (PhD 2015), Department of Earth and Ocean Sciences, University of South Carolina, 2015
(6) Taber Outstanding Teaching Assistant Award, Jessica Price Sutton, Department of Earth and Ocean Sciences, University of South Carolina, 2015
(7) Taber Outstanding PhD Research Award Jessica Price Sutton (PhD 2016), Department of Earth and Ocean Sciences, University of South Carolina, 2016

UNDERGRADUATE STUDENT ADVISEE AWARDS

(1) Stephen Taber Award for Outstanding Academic Record in Geological Sciences, Carsyn J Ames (2016) Eleanor McIntosh (2016)

EDITORIAL APPOINTMENTS

(1) Editor, EOS, Transactions of American Geophysical Union, 2001-2006
(2) Associate Editor, Water Resources Research, 1997-2001
(3) Associate Editor, Journal of Geophysical Research (Atmospheres), 2001-2003
(4) Associate Editor, Journal of Hydrologic Engineering, 2004-2007
(5) Associate Editor, Journal of Hydrology, 2007-present
(6) Editor, Vadose Zone Journal, 2014-present
(7) Editorial Board, Remote Sensing, Springer Books

SERVICE AND PROFESSIONAL ACTIVITIES

(1) Member, Committee on Large Scale Field Experimentation (1996-2008), American Geophysical Union
(2) Convener, Large Scale Characterization of Land Surfaces: Surface versus Satellite Data, Spring Meeting of the American Geophysical Union, Baltimore, MD; 27-30 May 1997
(3) Convener, Observations and Modeling of the Land Surface Hydrological Processes, Fall Meeting of the American Geophysical Union, San Francisco, CA; 8-12 December, 1997
(4) Convener, Use of Remote Sensing for Land-Atmosphere Interaction Studies in the Mississippi River Basin, at the GCIP (GEWEX - Global Energy and Water Exchange Continental-Scale International Project) Mississippi River Climate Conference at St. Louis, MO June 8-12, 1998
(5) Member, *Drought Response Committee*, State of South Carolina, 1999-2006
(6) Member, International Geoscience and Remote Sensing Symposium, Technical Paper Committee, International Geoscience and Remote Sensing Symposium, 1999-2006
(7) Member, Committee on Surface Water (1996-2008), American Geophysical Union
(8) Co-Chair, Committee on Remote Sensing (1999-2004), American Geophysical Union
(9) Member American Geophysical Union Hydrology Section Outstanding Student Paper Award Committee (1997-2001)
(10) Associate Editor, *Water Resources Research* (1997-2001), American Geophysical Union
(11) Convener, Observations and Modeling of the Land Surface Hydrological Processes, Fall Meeting of the American Geophysical Union, San Francisco, CA; 7-11 December, 1998

(12) Convener, Observations and Modeling of the Land Surface Hydrological Processes, Fall Meeting of the American Geophysical Union, San Francisco, CA; 13-17 December, 1999
(13) Member, Global Energy and Water Exchanges (GEWEX) International Sub-panel on Remote Sensing (1999-2006)
(14) Member, Committee on Instrumentation and Future Technologies, 2000-2010, IEEE Geoscience and Remote Sensing Society
(15) Convener, Remote Sensing and Hydrology, Spring Meeting of American Geophysical Union, Washington DC; May 26-30, 2000
(16) Member, Committee on Instrumentation and Future Technologies, 2000-2010, IEEE Geoscience and Remote Sensing Society
(17) Member, Committee on Data Fusion, 2000-present, IEEE Geoscience and Remote Sensing Society
(18) Co-convener, Soil Moisture and Hydrological Modeling I, International Geoscience and Remote Sensing Symposium, Honolulu, July 24-28, 2000
(19) Member, U.S. Committee on Coordinated Enhanced Observation Project (2000-2007)
(20) Member, Writing Team, Integrated Global Observing System (2000-2001)
(21) Co-convener, Remote Sensing of Soil Moisture, International Geoscience and Remote Sensing Symposium, Honolulu, July 24-28, 2000
(22) Co-convener, Agriculture and Land Surface Processes, International Geoscience and Remote Sensing Symposium, Honolulu, July 24-28, 2000
(23) Convener, Observations and Modeling of the Land Surface Hydrological Processes, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 11-15, 2000
(24) Convener, Remote Sensing and Hydrology, Spring Meeting of American Geophysical Union, Boston, MA, May 28-June 1, 2001
(25) Co-convener, Soil Moisture and Remote Sensing, International Geoscience and Remote Sensing Symposium, Sydney, Australia, July 9-13, 2001
(26) Editor, Special issue, Large scale passive remote sensing of soil moisture, IEEE Transactions on Geoscience and Remote Sensing, 2001
(27) Convener, Observations and Modeling of the Land Surface Hydrological Processes, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 10-14, 2001
(28) Editor, "Land Surface Hydrology, Meteorology and Climate: Observations and Modeling" (2001), Book, American Geophysical Union
(29) Editor, *EOS* (2001-2006), American Geophysical Union
(30) Associate Editor, *Journal of Geophysical Research* - Atmospheres (2001-2003), American Geophysical Union
(31) Member of the Scientific Steering Group for Prediction of Un-gaged Basins 2002-2004, International Association of Hydrological Sciences
(32) Convener, Remote Sensing and Hydrology, Spring Meeting of American Geophysical Union, Boston, MA, May 28-31, 2002
(33) Member, Validation and Science Team for Advanced Microwave Scanning Radiometer (AMSR) (2002-2008), NASA
(34) Member, Inter-Disciplinary Science (IDS) Working Group (2002-2006), NASA
(35) Convener, Observations and Modeling of the Land Surface Hydrological Processes, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 6-10, 2002
(36) Short course – "Remote Sensing Methods in Hydrology", Mahadevan Center, Hyderabad, India, December 2002
(37) Co-convener, Microwave Remote Sensing of Soil Moisture, International Geoscience and Remote Sensing Symposium, Toulouse, France, July 22-29, 2003

(38) Co-convener, Microwave Remote Sensing of Soil Moisture, International Geoscience and Remote Sensing Symposium, Seoul, South Korea, July 20-24, 2003
(39) Convener, Hydrological Prediction in Ungaged Basins III, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 8-12, 2003
(40) Convener, Remote Sensing of the Land Surface I, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 8-12, 2003
(41) Convener, Observations and Modeling of the Land Surface Hydrological Processes I-IV, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 8-12, 2003
(42) Co-chair, Technical committee on User Applications, 2003-2007, IEEE Geoscience and Remote Sensing Symposium
(43) Member, Administrative Council Geoscience and Remote Sensing Society, 2003-2008
(44) Member, Committee for Hydrological Information Systems (2004-2009), Consortium of Universities for the Advancement of Hydrological Sciences
(45) Associate Editor, Journal of Hydrologic Engineering (2004-2007), ASCE
(46) Convener, Observations and Modeling of the Land Surface Hydrological Processes I-IV, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 13-17, 2004
(47) Course lecturer, "Transboundary aquifers", United Nations Educational and Scientific and Cultural Organization, Paris, France, March 2005
(48) Convener, Observations and Modeling of the Land Surface Hydrological Processes I-III, Fall Meeting of the American Geophysical Union, San Francisco, CA; December 5-9, 2005
(49) Board of Directors for Consortium for the Advancement of Hydrological Sciences (CUASHI) (2006-2009)
(50) Convener, Remote Sensing, Hydrology and Field Experiments, Posters, Spring Meeting of the American Geophysical Union, Baltimore MD; May 23-26, 2006
(51) American Geophysical Union Hydrology Section, Fall, Program Co-Chair (2006-2008)
(52) Associate Editor, *Journal of Hydrology*, 2007-present
(53) Hydrology Executive Committee: 2001-2008, American Geophysical Union
(54) Member of Consortium of Universities for the Advancement of Hydrological Sciences, Science Agenda Team [SAT] (2007-2009)
(55) Member, Technical Working Group, Agriculture, Forestry and Waste Management of the South Carolina Governor's Climate Change Panel 2007-2009
(56) Member, Hydrological Measurement Facility [HMF] External Advisory Team (2008-2009), Consortium of Universities for the Advancement of Hydrological Sciences
(57) Co-chair South Carolina Princeton Alumni School Committee 2009-2014
(58) NOAA Drought Panel (2011-present)
(59) Board of Governors for Asian American Alumni Association of Princeton 2011-2015
(60) Board of Advisors for Sustainable Midlands (2011-2013), Columbia SC
(61) Chair, Rocky Branch Watershed Alliance, City of Columbia SC (2012-2013)
(62) Convener, Chapman Conference on Remote Sensing of the Terrestrial Water Cycle, Kona Hawaii February 2012, AGU
(63) Co-chair Asian American Alumni Association of Princeton 2013-2015
(64) Member, Princeton Alumni Executive Council, 2013-2015
(65) Co-convener, Remote Sensing of Soil Moisture, International Geoscience and Remote Sensing Symposium, Melbourne, Australia, July 22-26, 2013
(66) American Geophysical Union Chapman Conference Committee Chair (2013-2016)
(67) Convener, Observations and Modeling using Remote Sensing, Fall Meeting of the American Geophysical Union, San Francisco CA; December 9-13, 2013
(68) Chair, Trans-disciplinary conference committee (2014-2015), American Geophysical Union

(69) Convener, Observations and Modeling using Remote Sensing, Fall Meeting of the American Geophysical Union, San Francisco CA; December 15-19, 2014
(70) Vice-Chair, Southeastern Section, Geological Society of America 2015-2016
(71) Co-convener, Downscaling of Soil Moisture, International Geoscience and Remote Sensing Symposium, Milan, Italy, July 27-31, 2015
(72) Convener, Observations and Modeling using Remote Sensing, Fall Meeting of the American Geophysical Union, San Francisco CA; December 14-18, 2015
(73) Editor-in-Chief: "Remote Sensing of the Terrestrial Water Cycle", John Wiley Books (2015)
(74) Editor, *Vadose Zone Journal*, 2014-present
(75) Editorial Board, Remote Sensing topical area, *Springer Books,* 2015-present
(76) Short course organizer "New Methods in Hydrology – Statistics and Remote Sensing", Indian Institute of Technology Roorkee, January 2016
(77) General Chair, Southeastern Geological Society of America Meeting, March 31-April 1 2016, Columbia SC
(78) Chair-elect Southeastern section Geological Society of America, 2017-2018
(79) Program committee and session chair, Land surface and Cryosphere Remote Sensing, Asia Pacific Remote Sensing Conference, SPIE – International Society for Optics and Photonics, April 4-7, 2016, New Delhi, India
(80) Editor, Remote Sensing of Hydrological Extremes, Springer Verlag, 2016
(81) Member, Global Hydrology and Water Resources Panel, National Academy Decadal Survey, Earth Science Applications from Space, 2016-2017
(82) Co-convener, Passive Soil Moisture Remote Sensing I, International Geoscience and Remote Sensing Symposium, Beijing, China, July 10-15, 2016
(83) Co-convener, Water Resources Application, Fall Meeting of the American Geophysical Union, San Francisco CA, December 12-16, 2016
(84) Member, Advisory Board, Southeastern Conference Academic Conference on Water, Mississippi State University, Starkville, Mississippi, March 27-28, 2016
(85) Founding Editor in Chief, journal, "Remote Sensing in Earth System Sciences", Springer, July 2017
(86) Course organizer for workshop, "Detailed assessment of groundwater resources for preparation of catchment management plan and water sources protection guidelines", Entebbe, Uganda, August 2017
(87) Co-convener, Observations and Modeling using Remote Sensing, Fall Meeting of the American Geophysical Union, New Orleans, LA; December 11-15, 2017

REVIEW PANELS

(1) NASA Earth Sciences, Radar Hydrology, May 2000
(2) NASA Young Investigator, May 2001
(3) Global Water and Energy Cycle, June 2002
(4) CRDF, December 2003
(5) CRDF, May 2004
(6) CRDF, December 2004
(7) NASA Decision Panel, March 2005
(8) USDA Water and Watersheds Panel, June 2005
(9) NOAA CPPA Review Panel March 2008
(10) NASA Terrestrial Hydrology Review Panel September 2008
(11) CRDF BRHE Panel, September 2008
(12) NOAA CPPA Review Panel January 2009

(13) NASA Instrument Incubator Panel October 2010
(14) NASA Theory of Remote Sensing February 2011
(15) NASA Earth Science Technology Panel June 2011
(16) NASA Climate Indicators Panel, April 2013
(17) NASA Terrestrial Ecology Panel September 2013
(18) NASA Instrument Indicator Panel December 2013
(19) NASA GNSS Panel June 2015
(20) NSF Big Data Spokes Panel, May 2016
(21) NASA Biodiversity Panel November 2016
(22) NASA Modeling Panel January 2017
(23) NASA Earth System Science Fellowship April 2017

JOURNAL REVIEWS

Articles for: Water Resources Research, Journal of Geophysical Research, Journal of Hydrology, Vadose Zone Journal, Journal of Hydrological Engineering, Advances in Water Resources, Journal of Climate, Journal of Hydrometeorology, Hydrological Sciences Journal, Geophysical Research Letters, Transactions on Geoscience and Remote Sensing, Geoscience and Remote Sensing Letters, Global Change Biology, EOS, Bulletin of the American Meteorological Society, International Journal of Remote Sensing, Quarterly Reviews of Biology, Remote Sensing of the Environment,

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union (AGU)
American Meteorological Society (AMS)
American Society of Civil Engineers (ASCE)
Senior Member, International Electrical and Electronic Engineers (IEEE)

SERVICE UNIVERSITY OF SOUTH CAROLINA

(1)	Faculty Senator, Department of Geological Sciences	2001-2003
(2)	Acting Associate Chairman	2001
(3)	Member, Senate University Libraries Committee	2001-2004
(4)	Writing Team, Strategic Plan, Department of Geological Sciences	2002
(5)	Faculty Search Committee Member – Global Change position	2001
(6)	Chair, Environmental Studies Committee	2001-2003
(7)	Advisory committee, Water Center, School of Environment	2002-2004
(8)	Member, Senate University Athletics Committee	2002-2004
(9)	Member, Senate Libraries Committee	2002-2005
(10)	Chairman, Senate Committee on Academic Responsibility	2004-2006
(11)	Member, Geological Sciences Chair's Council	2005-2006
(12)	Member, USC Academic Integrity Task Force	2005-2007
(13)	Member, University Committee on Tenure and Promotions	2007-2008
(14)	Member, Senate Scholastic Standards and Petitions Committee	2007-2010
(15)	Member Faculty Excellence Initiative Evaluation	2006-2008
(16)	Member Graduate School Review Committee	2007-2008
(17)	Fall Doctoral Hooding Speaker	2008
(18)	Member Intellectual Property Committee	2008-2010
(19)	Chairman, Department of Earth and Ocean Sciences	2008-2011
(20)	Member, Research Committee Focus Carolina	2008-2009

(21) Member, Committee on Honorary Degrees	2011-2014
(22) Director USC-India Initiative, Office of the Provost	2012-2013
(23) Member, Year of India at USC Committee	2012-2013
(24) Member, University Committee on Tenure and Promotions	2014-2017
(25) Member, USC Board of Visitors	2014-2015

FUNDED RESEARCH PROJECTS

(Funding for Lakshmi ~$4M; total funding ~$15M)

1998-2001	Study of land atmosphere interactions using satellite data assimilation, NASA (with Dubayah, University of Maryland; Qualls, University of Idaho) $280,000, Total $400,000
1999-2002	Coupling satellite remote sensing and unsteady flow modeling for discharge estimation, NASA (with Bradley, Iowa, Birkett, University of Maryland) $120,000 Total $360,000
2000-2001	Determination of land surface soil moisture using L and S band sensors, JPL/Caltech (with Njoku JPL) $32,000, Total $32,000
2000-2003	The influence of land atmosphere interactions on variability of the North American Monsoon, NASA (with Small, Colorado) $210,000 Total $420,000
2001-2002	Spatial scaling and temporal persistence of soil moisture using observations and analysis, NOAA/NCEP (with Mitchell, NCEP) $15,000 Total $15,000
2001-2002	Development of simple, inexpensive and reliable tool for determination of in-situ soil water content, USC, (with Pierce, USC), $15,000, Total $30,000
2001-2006	Validation of soil moisture products using the Advanced Microwave Scanning Radiometer (AMSR) and aircraft prototypes using ground sampling, USDA/ARS (with Jackson, USDA/ARS) $45,000 Total $45,000
2001-2004	Extended validation of AMSR-E soil moisture products, NASA, (with Jackson USDA/ARS), $160,000 Total $450,000
2002-2005	Studies of combined passive and active remote sensing, NASA (with Njoku JPL and Jackson USDA/ARS) $135,000, Total $350,000
2004-2007	Climate change and intertidal biogeography: Coupling remote sensing data to thermal physiology across a cascade of scales, NASA, (with Helmuth, USC) $300,000, Total $1,100,000
2003-2006	Hydrological Information System, NSF, (with Maidment, University of Texas), $36,000, Total $1,600,000
2005-2006	Spatially distributed wetness resulting from flooding from Hurricane Katrina, USC, $25,000
2004-2008	Modeling influence of plant cover on water and energy cycling at the land-atmosphere interface: Constraints from satellite data, NASA, (with Small, University of Colorado), $210,000, Total $420,000
2004-2008	Use of satellite soil moisture observations for improved prediction of the North American precipitation variability, NASA (with Small, University of Colorado), $170,000, Total $330,000
2004-2008	AQUA AMSR-E soil moisture algorithm product improvement, NASA, (with Jackson USDA/ARS, Njoku, JPL), $130,000, Total $330,000
2005-2008	Hydrological validation of satellite soil moisture estimates, JAXA, $75,000
2004-2009	Ecological impact of climate change on marine organisms, NOAA, (with Wethey, USC), $400,000, Total $2,450,000

2007-2012 Determining the impact of climate change on intertidal mussels using MODIS surface temperatures, NASA, (with Helmuth, USC), $375,000, Total $1,650,000

2011-2016 Physiological impacts of climate change using remote sensing: An integrative approach to predicting patterns of species abundance distribution and thresholds of ecosystem collapse, NASA, (with Wethey, USC), $240,000, Total $1,800,000

2012-2019 Disaggregation of passive microwave soil moisture using MODIS and NLDAS, NASA, (with Rodell, NASA and Pinker, University of Maryland), $400,000, Total $800,000

2013-2017 Determination of the available water capacity for the Mekong River Basin using models and satellite observations, NASA, (with Bolten, NASA), $150,000, Total $1,200,000

2015-2017 Modeling the water resources of the major river basins of the world using NASA satellite data, NASA, $66,000

2015-2018 Southeast offshore storage resources, DOE, (with Knapp, USC), $40,000, Total $1,004,242

2016 Application of InSAR for measuring ground movement in South Carolina, SCDNR, (with Inthuorn, USC), $7000, Total $41,000

2016-2019 Improved hydrologic decision support for the Lower Mekong River basin through integrated remote sensing and modeling, NASA (with Bolten, NASA), $150,000, Total $600,000

2016-2019 Floodplain circulation defined by in-situ observations, numerical simulations and remote sensing, NASA (with Torres, USC), $300,000, Total $950,000

2017-2019 Synergistic use of AMSR2 and GPM data to quantify spatial and temporal dynamics of the hydrological cycle at watershed and regional scales

JOURNAL PUBLICATIONS

(Italics indicates student authors)

(1) Krajewski, W.F., **V.Lakshmi**, K.P.Georgakakos and S.C.Jain, 1991, A Monte-Carlo Study of Rainfall Sampling Effect on a Distributed Catchment Model, *Water Resources Research*, Vol. 27, No. 1, pp 119-128.

(2) Li, Shuguang, **V.Lakshmi** and D.McLaughlin, 1992, Stochastic Theory for Irregular Stream Modeling. Part I: Flow Resistance, *Journal of Hydraulic Engineering*, Vol. 118, No. 8, pp 1079-1090.

(3) Wood, E.F. and **V.Lakshmi**, 1993, Scaling Water and Energy Fluxes in Climate Systems: Three Land-Atmospheric Modeling Experiments, *Journal of Climate*, Vol. 6, No. 5, pp 839-857

(4) **Lakshmi, V**., E.F.Wood and B.J.Choudhury, 1997, A soil-canopy-atmosphere model for use in satellite microwave remote sensing, *Journal of Geophysical Research*, 102, D6, 6911-6927

(5) **Lakshmi, V**., E.F.Wood and B.J.Choudhury, 1997, Investigation of Effect of Heterogeneities in Vegetation and Rainfall on Simulated SSM/I Brightness Temperature, *International Journal of Remote Sensing,* Vol. 18, No. 13, 2763-2784

(6) **Lakshmi, V**., E.F.Wood and B.J.Choudhury, 1997, Evaluation of SSM/I Satellite Data for Regional Soil Moisture Estimation over the Red River Basin, *Journal of Applied Meteorology*, Vol. 36, No. 10, pp 1309-1328

(7) **Lakshmi, V**., 1998, Sensor Microwave Imager Data in Field Experiments: FIFE-1987, *International Journal of Remote Sensing*, Vol. 19, No. 3, pp 481-505

(8) **Lakshmi, V**., and E.F.Wood, 1998, Diurnal Cycle of Evaporation over FIFE Using Observations and Modeling, *Journal of Hydrology*, 204, pp 37-51

(9) **Lakshmi, V**., J. Susskind and B.J.Choudhury, 1998, Determination of Land Surface Skin Temperatures, Surface Air Temperature and Humidity from TOVS HIRS2/MSU Data, *Advances in Space Research*, Vol. 22, No. 5, 629-636

(10) **Lakshmi, V**., and J. Susskind, 2000, Comparison 0f TOVS-derived land surface variables with ground Observations, *Journal of Geophysical Research,* Vol. 105, No. D2, pp2179-2190

(11) Otterman, J., T. Brakke, M. Fuchs, **V. Lakshmi** and M. Cadeddu, Longwave emission from a plant/soil surface as a function of view direction: dependence on canopy architecture, *International Journal of Remote Sensing*, Vol. 20, No. 11, pp 2195-2201

(12) **Lakshmi, V**., 2000, A Simple Surface Temperature Assimilation Scheme for Use in Land Surface Models, *Water Resources Research,* 36(12), pp 3687-3700

(13) **Lakshmi, V**., K.P.Czajkowski, R.O.Dubayah and J.Susskind, 2001, Land surface Air Temperature Mapping Using TOVS and AVHRR, *International Journal of Remote Sensing*, 22(4), pp 643-662

(14) **Lakshmi**, **V** and *K Schaaf*, 2001, Analysis of the 1993 Midwestern floods using satellite and ground data, *Transactions on Geoscience and Remote Sensing*, 39(8), pp. 1736-1743

(15) **Lakshmi, V**., and J. Susskind, 2001, Utilization of Satellite Data in Land Surface Hydrology: Sensitivity and Assimilation, *Hydrological Processes*, 15, pp. 877-892

(16) *Rhoads, J*., R. Dubayah, **V Lakshmi**, G O'Donnell, D. Lettenmaier, 2001, Validation of land surface models using satellite derived surface temperature, *Journal of Geophysical Research*, 106, D17, pp 20085-20100

(17) **Lakshmi, V**., *J. Small*, and S Goetz, 2002, Comparison of Surface Meteorological Variables from TOVS and AVHRR, *Remote Sensing of Environment,* 79(2/3), pp176-188

(18) **Lakshmi, V**. and *D. Zehrfuhs,* 2002, Normalization and Comparison of Surface Temperatures across a range of scales, *Transactions on Geoscience and Remote Sensing,* 40(12), pp2636-2646

(19) *Guha, A*. and **V. Lakshmi**, 2002, Sensitivity, Spatial Heterogeneity and Scaling of Microwave Brightness Temperatures*, Transactions on Geoscience and Remote Sensing,* 40(12), pp2626-2635

(20) Njoku, E., W. Wilson, S. Yueh, S. Dinardo, F. Li, T. Jackson, **V. Lakshmi**, J. Bolten, Observations of soil moisture using a passive and active low frequency microwave airborne sensor during SGP99, 2002, *Transactions on Geoscience and Remote Sensing.,* 40(12), pp2659-2673

(21) *Matsui, T*, **V Lakshmi** and E Small, 2003, Links between snow cover, surface skin temperature and rainfall variability in the North American Monsoon Region, *Journal of Climate,* Vol. 16, No. 11, pp 1821-1829

(22) **Lakshmi, V**, T. Jackson and *D Zehrfuhs*, 2003, Soil moisture-temperature relationships: Results from two field experiments, *Journal of Hydrological Processes, 17,* pp3041-3057

(23) *Bolten, J.,* **V. Lakshmi** and E. Njoku, 2003, Soil moisture retrieval using the passive/active L/S band radar/radiometer, *Transactions on Geoscience and Remote Sensing,* 41(12), pp 2792-2801

(24) Njoku, E., J. Jackson, **V. Lakshmi**, T. Chan, S. Nghiem, 2003, Soil moisture retrieval using AMSR-E, *Transactions on Geoscience and Remote Sensing*, 41(2), pp215-219

(25) Blindish, R., T. Jackson, E. Wood, H. Gao, P. Starks, D. Bosch and **V**. **Lakshmi**, 2003, Soil moisture estimates from TRMM Microwave Imager over Southern United States, *Remote sensing of the Environment,* 85, pp507-515

(26) Sivapalan, M., Takeuchi, Franks, Gupta, Karaambiri, **V. Lakshmi**, Liang, McDonnell, Mendiondo, O'Connell, Oki, Pomeroy, Schertzer, Uhlenbrook and Zehe, IAHS Decade on Prediction in Ungaged basins 2003-2012: Shaping an exciting future for hydrological sciences, *Hydrological Sciences*, 48(6), pp 857-880, 2003

(27) **Lakshmi, V**., 2004, The role of remote sensing in prediction of ungaged basins, *Hydrological Processes*, Volume 18, Issue 5, Pages 1029 – 1034, Invited Commentary

(28) *Guha, A.* and **V. Lakshmi**, 2004, Use of the Scanning Multichannel Microwave Radiometer (SMMR) to retrieve soil moisture and surface temperature over the central United States, 42 (7) pp. 1482-1494,*Transactions on Geoscience and Remote Sensing*

(29) **Lakshmi, V**., T. Piechota, *U. Narayan, C. Tang*, 2004, Soil moisture as an indicator of weather extremes, *Geophysical Research Letters*, Vol. 31, L11401, doi: 10.1029/2004GL019930

(30) *Narayan, U.,* **V. Lakshmi**, and E. Njoku, 2004, Retrieval of Soil Moisture from Passive and Active L/S Band Sensor (PALS) Observations During the Soil Moisture Experiment in 2002 (SMEX02), Vol. 92(4): pp.483-496. *Remote Sensing of the Environment*

(31) *Syed, H.,* **V. Lakshmi**, D. Lohmann, K. Mitchell, E. Paleologos, 2004, Analysis of process controls in land surface in land surface hydrological cycle over continental United States, *Journal of Geophysical Research (Atmospheres),* Vol. 109, D22105, doi:0.1029/2004 JD004640

(32) *Bolten, J., U. Narayan* and **V. Lakshmi**, 2004, Passive remote sensing of soil **moisture**: A comparison of two land surface experiments, *Italian Journal of Remote Sensing,* Vol. 30, pp. 65-86

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(159) Maloof, A., G Tootle, B Fang, **V Lakshmi**, Glacier Area and Mass Variability in the Wind River Range (Wyoming, USA): 2006 to 2012, American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA

(160) Goodall, J., M. Billah, E. Bakinam, U. Narayan, **V Lakshmi**, A Rajasekar, R Moore, Leveraging the DataNet Federation Consortium (DFC) to Support Regional-Scale Hydrologic Modeling, American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA

(161) Price, J. and **V. Lakshmi**, Growth studies of Mytilus Californianus using satellite surface temperatures and chlorophyll data for coastal Oregon, American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA

(162) Bolten, J., M Srinivasan, E Ivins, F Landerer, J Famiglietti, M. Rodell, B Zaitchik, **V Lakshmi,** GRACE Hydrology: Applications of current and future GRACE missions, American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA

(163) Fang, B. and **V Lakshmi**, Passive microwave soil moisture disaggregation using remote sensing and land surface model data, American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA

(164) Price, J and **V Lakshmi**, Understanding how the temporal and spatial variation in remotely sensed data influences rocky intertidal mussel species mytilus californianus, Ocean Sciences Meeting, February 23-28,2014, Honolulu HI

(165) **Lakshmi, V**, Downscaling soil moisture using vegetation and surface temperature, European Geophysical Union, April 27 – May 2, 2014, Vienna, Austria

(166) Fang B. and **V Lakshmi**, Use of active radar for downscaling passive data, International Geoscience and Remote Sensing Symposium, July 13-18, 2014, Quebec City, Canada

(167) **Lakshmi V** and B Fang, Passive microwave soil moisture disaggregation radar data and relationship between soil moisture, vegetation and surface temperature, SPIE Conference, October 13-16, 2014, Beijing, China

(168) Price, J., **V Lakshmi** and B Menge, From Space to the Rocky Intertidal: Measuring the Body Temperature of the Intertidal Mussel Species, *Mytilus californianus* using NASA MODIS Surface Temperatures, American Geophysical Fall Meeting Fall Meeting, December 15-19, 2014, San Francisco CA.

(169) Bolten, J., J Spruce, R Wilson, K Strauch, T Doyle, R Srinivasan, **V Lakshmi**, Enhancing Floodplain Management in the Lower Mekong River Basin Using Vegetation and Water Cycle Satellite Observations, American Geophysical Fall Meeting Fall Meeting, December 15-19, 2014, San Francisco CA.

(170) Fang B and **V Lakshmi**, Active-passive algorithm for downscaling soil moisture, American Geophysical Fall Meeting Fall Meeting, December 15-19, 2014, San Francisco CA.

(171) **V Lakshmi**, Recent advances in downscaling soil moisture from satellite to field scale, American Geophysical Fall Meeting Fall Meeting, December 15-19, 2014, San Francisco CA.

(172) Cunha, T., V Paiva, O. Rottuno, M. Claudia, M. Franklin and **V Lakshmi**, Use of vegetation index and surface temperature to estimate soil moisture in an un-monitored catchment in Brazil, American Geophysical Fall Meeting Fall Meeting, December 15-19, 2014, San Francisco CA.

(173) Gupta, M., J Bolten, **V Lakshmi**, Optimizing available water capacity using microwave satellite data for improving irrigation management, European Geophysical Union Meeting, April 13-17, 2015, Vienna, Austria

(174) **Lakshmi, V**., Satellite remote sensing of the hydrological cycle, *Invited talk*, International Atomic Energy Agency Hydrology Symposium, May 11-15, 2015, Vienna, Austria

(175) **Lakshmi, V**. and B Fang, Downscaling satellite soil moisture for the NASA SMAP mission, International Geoscience and Remote Sensing Symposium, July 27-31, 2015, Milan, Italy

(176) **Lakshmi, V**., Satellite Remote sensing of the terrestrial water cycle, *Invited talk*, Geological Sciences of America Annual Meeting, November 1-4, 2015, Baltimore MD

(177) **Lakshmi, V,** B Fang and U Narayan, Advances in downscaling soil moisture for use in drought and flood assessments: Implications for data from the Soil Moisture Active and Passive (SMAP) Mission, *Invited talk*, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(178) Gupta, M., J Bolten, **V Lakshmi,**, Synergistic utilization of microwave satellite data and GRACE-total water storage anomaly for improving available water capacity prediction in lower Mekong Basin, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(179) Lamb, K., P Miller, **V Lakshmi**, T Piechota, G Tootle, A Kalra, Enhancing Our Understanding, Monitoring, and Forecasting of the 2014-2015 El Nino and Its Relationship with the Record Warming in the North Pacific, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(180) Miller, P., **V Lakshmi**, N Santos, K Lamb, T Piechota, A Kalra and G Tootle, An Application of Advanced Ensemble Streamflow Prediction Methods to Assess Potential Impacts of the 2015 – 2016 ENSO Event over the Colorado River Basin, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(181) Santos, N., P Miller, T Piechota and **V Lakshmi**, Characterizing future El Nino impacts on the Lower Colorado River Basin, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(182) Price, J and **V Lakshmi**, Developing a greater understanding of rocky intertidal ecosystems using NASA Earth Observations, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(183) Li, H., B Fang and **V Lakshmi**, Spatio-temporal analysis of soil moisture in Walnut Gulch Experimental Watershed, Southeastern Arizona, USA, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(184) Ercan, M., **V Lakshmi**, G Skofronick-Jackson and G Huffman, Use of TRMM and GPM multi-satellite precipitation data for hydrological modeling, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(185) Rebello V., **V Lakshmi**, Studies of the hydrological cycle for the Sao Francisco Basin using a combination of modeling and remote sensing, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(186) Martins, T., **V Lakshmi**, Use of a rainfall runoff model and satellite data sets for hydrological studies of the Upper Contas Watershed, Brazil, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(187) Al-Barakat, R. and **V Lakshmi**, Use of satellite remote sensing to study the impact of climate and human changes in Mesopotamian Marshlands, Iraq, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(188) Fayne, J. and **V Lakshmi**, Estimation of variability of water resources in the major river basins of the world using satellite data, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(189) Fang, B. and **V Lakshmi**, Passive/active microwave soil moisture disaggregation using SMAPVEX12 data, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(190) Libertino, A., A Sharma and **V Lakshmi**, Combined approach to analysis of rainfall super extremes in locations with limited observations records, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(191) Parinussa, R., F Johnson, A Sharma and **V Lakshmi**, Using Passive Microwaves for Open Water Monitoring and Flood Forecasting, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(192) Knight, R., Buck, C., Chen, J., Gosselin, P., Hashemi, H., **Lakshmi, V**, Screuder, W., Scruggs, M., Smith, R., Sullivan, M. and Zebker, H, A remote sensing based decision support system for groundwater management, American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco CA

(193) Kumar, B and **V Lakshmi**, Statistical trend analysis of AMSR-E satellite soil moisture in Gandak River Basin, Hydroconference 2015, December 17-19, 2015, Roorkee, India

(194) **Lakshmi, V.,** Mapping the October 2015 South Carolina floods using a combination of GPM and SMAP, 65th Southeast section GSA meeting, March 31-April 1, 2016, Columbia SC

(195) **Lakshmi, V.,** Remote Sensing of the terrestrial water cycle, Asia-Pacific Remote Sensing, SPIE meeting, April 4-7, 2016, New Delhi, India

(196) Fayne, J. and **Lakshmi, V.,** Predicting Water Resource Variability in the Major River Basins of the World Using Satellite and Model Data, American Society for Photogrammetry and Remote Sensing Spring Meeting, April 11-15, 2016, Fort Worth TX

(197) Libertino, A., A Sharma, P Claps and **V Lakshmi**, Spatial distribution of the timing of rainfall extremes derived by remote sensing and raingauges data assimilation, European Geophysical Union Meeting, April 17-22, 2016, Vienna, Austria

(198) Gupta, M., J Bolten and **V Lakshmi**, Improving soil moisture simulation to support Agricultural Water Resource Management using Satellite-based water cycle observations, European Geophysical Union Meeting, April 17-22, 2016, Vienna, Austria

(199) **Lakshmi, V.**, Spatial downscaling of SMAP Passive Microwave soil moisture using vegetation index and surface temperature, International Geoscience and Remote Sensing Symposium, July 10-15, 2016, Beijing, China

(200) Gottschalk, I and **V Lakshmi,** A remote sensing mass balance approach to estimate spatial recharge in California's Central Valley aquifer, Geological Society of America Annual Meeting, September 25-28, 2016

(201) Tootle, G., M Therell, **V Lakshmi**, P Miller, K Lamb, A Kalra and N Santos, The 2015-2016 El-Nino and Alabama-Mississippi Hydrologic response, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(202) Kumar, B., **V Lakshmi** and K Patra, The 2015-2016 Assessing hydrological uncertainties using the SWAT model to simulate streamflow over the Alpine Himalayas, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(203) Gemitzi A. and **V Lakshmi**, Evaluating renewable groundwater stress with GRACE data in Greece, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(204) Sutton, J. and **V Lakshmi**, Comparisons of satellite precipitation estimates over United States Affiliated Pacific Islands (USAPI), American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(205) Libertino, A., A Sharma, **V Lakshmi** and P Claps, Combined use of satellite timing information and rain gage information for enhanced intensity-duration frequency curves estimation, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(206) Fayne, J., and **V Lakshmi**, Predicting the variability of water resources in eleven global river basins using multivariate and decision tree analysis with satellite data, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(207) **Lakshmi, V**., J Fayne and J Bolten, Study of hydrological extremes - floods and droughts in global river basins using satellite data and model output, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(208) Al-Barakat, R., and **V Lakshmi**, Long-term of analysis of MODIS, NDVI and NDWI for the Mesopotamian Marshlands, Iraq, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(209) Indu, J., and **V Lakshmi**, Evaluation of Convective Storms and their Vertical Distributions over Indian Region Using GPM Precipitation Features Database, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(210) Fang, B. and **V Lakshmi**, SMAP Soil Moisture Disaggregation using Land Surface Temperature and Vegetation Data, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(211) Rebello, V., A Getirana, O Filho and **V Lakshmi**, Drought assessment using multi-satellite remote sensing, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(212) Mondal, A., **V Lakshmi**, Assessment of water sustainability index, using reliability-resilience-vulnerability criteria considering climatic variation over India, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(213) Chen, J., H Zebker and **V Lakshmi**, Advances in detecting localized road damage due to sinkholes induced by engineering works using high resolution RASARSAT-2 data, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(214) Hashemi, H., M Nordin, **V Lakshmi** and R Knight, Bias correction of long-term satellite monthly precipitation product (TRMM-3B43) over the conterminous United States, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(215) Hossler, T., J Caers, **V Lakshmi** and J Harris, Importance of data toward understanding the hydrogeological cycle and optimal allocation of water in the Nagobo basin, Ghana, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(216) Shammari, A., D Brantley, C Knapp and **V Lakshmi**, Impact of permeability and mineralization on injected carbon dioxide plume in the South Georgia Rift Basin, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(217) Wakefield, R., J Basara, **V Lakshmi**, P Starks, M Cosh and X Xiao, Downscaled Soil Moisture from SMAP Evaluated Using High Density Observations, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(218) Flores, A., M Maksimowicz, **V Lakshmi** and R AlBarakat, Characterizing decadal-scale vegetation and ecohydrologic change associated with the Mozambican civil war via

multiple-sensor remote sensing datasets, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(219) Pathak, P., A Kalra, M Bernardez, K Lamb, P Miller, G Tootle, J Fayne, **V Lakshmi**, N Santos and T Piechota, Trends and shift changes in the SWE in the western US, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(220) Santos, N., T Piechota, P Miller, K Lamb, **V Lakshmi**, G Tootle, A Kalra, M Bernardez, J Fayne and P Pathak, The 2015-2016 El Niño: Impacts to the Lower Colorado River Basin, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(221) **Lakshmi, V**., M Gupta and J Bolten, Utilization of downscaled microwave satellite data and GRACE Total Water Storage anomalies for improving streamflow prediction in the Lower Mekong Basin, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(222) Lamb, K., J Fayne, A Kalra, P Miller, **V Lakshmi,** G Tootle and T Piechota**,** 2015-16 ENSO, Precipitation, and the Ridiculously Resilient Ridge, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(223) Gupta, V., J Bolten and **V Lakshmi**, Evaluation of Crop-Water Consumption Simulation to support Agricultural Water Resource Management using Satellite-based water cycle Observations, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(224) Brantley, D., C Knapp and **V Lakshmi**, Geophysical Mapping of the South Carolina Atlantic Offshore for Wind Energy Development, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(225) Knapp, C., M Olusuga, D Brantley, **V Lakshmi**, The Quest for Carbon Sequestration in the Southeastern United States, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(226) Knapp, J., C Knapp, D Brantley, **V Lakshmi**, S Howard, Southeast Offshore Storage Resource Assessment (SOSRA): Evaluation of CO2 Storage Potential on the Continental Shelf from North Carolina to Florida, American Geophysical Union Fall Meeting, December 12-16, 2016, San Francisco CA

(227) Kumar, B., C Patra and **V Lakshmi**, Evaluating hydrological uncertainties arising due to DEM resolution: Study for Himalayan River basin Gandak, International conference on emerging technologies in agricultural and food engineering, December 27-30, 2016

(228) **Lakshmi, V**., Hydrological extremes from Space, Southeastern Conference Academic Conference on Water, March 27-28, 2017, Mississippi State University, Starkville MS

(229) Knapp, C., J Knapp, M Akintunde, D Brantley, **V Lakshmi**, K Almutairi, D Almayahi, Onshore/offshore carbon sequestration in Southeastern United States, American Assocuation of Petroleum Geologists Annual Meeting, April 2-5, 2017, Houston, TX

(230) Gemitzi, A. and **V Lakshmi**, Determination of groundwater abstractions by means of GRACE data and Artificial Neural Networks, European Geophysical Union Meeting April 23-28, 2017, Vienna, Austria

(231) Knapp, C., J Knapp, D Brantley, **V Lakshmi**, K Almutairi, D Almayahi, A Alshammari and O Akintunde, Carbon sequestration in Southeastern United States, Past, Present and Future, 2nd International Workshop on Carbon Dioxide Sequestration, June 19-20, 2017, Houston, TX

(232) Fang, B. and **V Lakshmi**, Downscaling SMAP soil moisture using vegetation and surface temperature data, International Geoscience and Remote Sensing Symposium, July 23-28, 2017, Fort Worth TX

INVITED PRESENTATIONS

(Person extending the invitation in parenthesis)

(1) Data Assimilation Office, NASA Goddard Space Flight Center, December 1996 (Steve Cohn)
(2) School of Civil Engineering, Purdue University, April 1997 (A R Rao)
(3) Department of Geography and Environmental Engineering, Johns Hopkins University, September 1997 (Marc Parlange)
(4) Department of Civil Engineering, University of Maryland (Kaye Brubaker)
(5) Department of Meteorology, University of Oklahoma, September 1998 (Claude Duchon)
(6) Department of Public Health, Johns Hopkins University, May 2000
(7) Department of Civil Engineering, University of Florida, September 2001 (Jennifer Jacobs)
(8) Department of Geological Sciences, University of Texas-El Paso, April 2002 (Dirk Schulze-Makuch)
(9) Department of Earth Sciences, New Mexico Institute of Technology, September 2002 (Eric Small)
(10) Department of Environmental Engineering, Columbia University, October 2002 (Upmanu Lall)
(11) National Remote Sensing Agency, Hyderabad, India, December 2002 (PVN Rao)
(12) Department of Earth and Geological Sciences, Clemson University, February 2003 (Larry Murdoch)
(13) Department of Earth, Atmospheric and Oceanic Sciences, North Carolina State University, August 2003 (Dev Niyogi)
(14) Department of Civil Engineering, University of Colorado, January 2004 (Hari Rajaram)
(15) Department of Civil Engineering, University of Illinois, May 2004 (Praveen Kumar)
(16) Institute of Remote Sensing Application, Chinese Academy of Sciences, August 2004 (J. C. Shi)
(17) Department of Geological Sciences, Clemson University, February 2006 (Larry Murdoch)
(18) Department of Civil Engineering, University of New Hampshire, February 2006 (Jennifer Jacobs)
(19) Department of Geophysics, Stanford University, April 2006 (Rosemary Knight)
(20) Department of Civil Engineering, Northwestern University, May 2006 (Aaron Packman)
(21) Department of Earth Sciences, Dartmouth College, January 2007 (Brian Dade)
(22) Department of Geophysics, Stanford University, January 2007 (Rosemary Knight)
(23) Department of Biological Sciences, Stanford University, January 2007, (Gretchen Daily)
(24) Department of Civil and Environmental Engineering, University of California, Berkeley, February 2007 (John Dracup)
(25) Earth Sciences Division, Lawrence Livermore National Laboratory, April 2007 (Yun Duan)
(26) Department of Civil Engineering, Stanford University, April 2007 (Peter Kitanidis)
(27) Carnegie Institute of Washington, Stanford, April 2007 (Chris Field)
(28) Jet Propulsion Laboratory, August 2007 (Eni Njoku)
(29) Center for Atmospheric and Oceanic Sciences, Indian Institute for Science, January 2008 (G S Bhat)
(30) Department of Geography and Earth Sciences, University of North Carolina Charlotte February 2007 (Martha Eppes)
(31) Department of Civil Engineering, University of Melbourne February 2008 (Jeff Walker)
(32) Department of Earth System Science, University of California, Irvine, October 2009 (Jay Famiglietti)
(33) Department of Geology, University of North Carolina, February 2010 (Tamlin Pavelsky)

(34) Department of Earth and Environmental Engineering, Columbia University, March 2010 (Upmanu Lall)
(35) Lamont Doherty Earth Observatory, March 2010 (Mike Purdy)
(36) Department of Civil and Environmental Engineering, University of Hong Kong, William Mong Visitor, October 2010 (Ji Chen)
(37) Geophysical Institute, University of Alaska, Fairbanks, June 2011, (Dan White)
(38) Department of Earth and Environmental Sciences, University of Pennsylvania, February 2012 (Ben Horton)
(39) Texas Water Resources Institute, Texas A&M University, May 2012 (Binayak Mohanty)
(40) School of Surveying, University of Otago, August 2012 (Paul Denys)
(41) Department of Geological Sciences, University of Texas at San Antonio November 2012 (Hongjie Xie)
(42) Department of Civil and Environmental Engineering, University of New Hampshire February 2013 (Jennifer Jacobs)
(43) Department of Civil and Environmental Engineering, City University Of New York May 2013 (Michael Piasecki)
(44) Department of Civil Engineering, University of New South Wales, July 2013 (Ashish Sharma)
(45) Department of Civil, Environment and Construction Engineering, University of Alabama, August 2013 (Ed Back)
(46) Department of Applied Mechanics and Hydraulics, National Institute of Technology, Surathkal, September 2013 (G S Dwarkish)
(47) Department of Civil and Environmental Engineering, Northwestern University November 2013 (Aaron Packman)
(48) Department of Geophysics, Stanford University, February 2014 (Rosemary Knight)
(49) Department of Civil Engineering, Texas A&M University April 2014 (Mark Burris)
(50) Department of Earth and Planetary Sciences, University of California, Berkeley, October 2014 (Bill Dietrich)
(51) Bureau of Economic Geology, University of Texas at Austin, October 2014 (Michael Young)
(52) Department of Civil Engineering Hong Kong University, November 2014 (Ji Chen)
(53) School of Civil and Environmental Engineering, University of New South Wales, August 2015 (Ashish Sharma)
(54) Department of Civil and Environmental Engineering, Stanford University, September 2015 (Peter Kitanidis)
(55) Department of Earth System Science, Stanford University, October 2015 (Steve Gorelick)
(56) Department of Civil and Environmental Engineering, University of Nevada, Las Vegas, October 2015 (Tom Piechota)
(57) Department of Geophysics, Stanford University, November 2015 (Rosemary Knight)
(58) NASA Ames Research Center, Ames, CA, February 2016 (Emily Kislik)
(59) US Geological Survey, Menlo Park, CA, April 2016 (David Stonestrom)
(60) Center for Food Security, Stanford University, May 2016 (Roz Naylor)
(61) Earth and Ocean Sciences, Duke University, September 2016 (Mukesh Kumar)
(62) Earth and Environmental Engineering, Columbia University November 2016 (Upmanu Lall)
(63) Geological Sciences, University of North Carolina, February 2017 (Tamlin Pavelsky)
(64) Civil and Environmental Engineering, University of Melbourne, March 2017 (Jeff Walker)
(65) Engineering and Environmental Science, South University of Science and Technology, May 2017 (Zheng)

COURSES AND TEACHING

University of South Carolina

(1) GEOL 101, Introduction to Geology, Spring 2002
(2) GEOL 103, Introduction to Environmental Geology, Spring 2005, Spring 2006, Fall 2007, Spring 2009, Spring 2010, Spring 2012, Spring 2013, Spring 2015, Spring 2017
(3) GEOL 335, Global Environmental Change, Fall 2000, Fall 2001, Fall 2002, Fall 2003, Fall 2004, Fall 2005, Fall 2007, Fall 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2016
(4) GEOL 570, Environmental Hydrogeology, Fall 1999, Fall 2001, Fall 2003
(5) GEOL 571, Soil Hydrology/Land Surface Hydrology, Fall 2002, Fall 2004
(6) GEOL 770, Advanced Hydrogeology and Surface Processes, Fall 2004, Spring 2011
(7) GEOL 799, Directed Individual Studies
(8) GEOL 861, Remote Sensing of Hydrological Variables and Processes, Fall 2005, Spring 2008, Spring 2014
(9) GEOL 899 Thesis preparation

University of Maryland, College Park

(1) GEOG 446, Applied Climatology, Spring 1997, Spring 1998
(2) GEOG 628, Hydrology and Water Resources, Fall 1998

Stanford University

(1) GEOPHYS185/385 Observing Freshwater, Spring Quarter, 2007
(2) GEOPHYS 199 Observing Freshwater, Fall Quarter 2015

POSTDOCTORAL RESEARCH ASSOCIATES

Srinivas Chintalapati (2005-2008)
Bin Fang (2016-present)
Jessica Price (2016-present)
Arun Mondal (2017-present)
Sananda Kundu (2017-present)

STUDENTS (PRIMARY ADVISOR)

Thesis and Academic and Research Advisor ***(Graduate Students) and current position***

Doctoral Students

(1) John Bolten (1999-2005) NASA Goddard Space Flight Center, Greenbelt MD
(2) Lizbeth Guijarro (2000-2005) BHP Billiton, Houston TX
(3) Ujjwal Narayan (2002-2006) University of Maryland, College Park, MD
(4) Bryan Hong *(*2003-2008) National Institute of Ecology, South Korea
(5) Iliana Mladenova (2006-2009) NASA Goddard Space Flight Center, Greenbelt, MD
(6) Bin Fang (2010-2015) Columbia University, NY; University of South Carolina
(7) Jessica Price (2011-2016) Department of Biological Sciences, University of South Carolina
(8) Reyadh Al-Barakat (2014-) PhD expected 05/2019
(9) Adil Awad Al-Shammari (2015-) PhD expected 05/2019
(10) Chelsea Dandridge (2017-)
(11) Hyunglok Kim (2017-)

Masters Students

(1) Diane Zehrfuhs (1999-2001) Research Engineer, NY

(2) Aniruddha Guha (1999-2001) Environmental Engineer, Virginia
(3) Kendi King (2000-2002) Environmental Consultant Barbados
(4) Toshihisa Matsui (2000-2002) NASA Goddard Space Flight Center, Greenbelt MD
(5) Stephen Scheidt (2000-2003) Research Engineer, PA
(6) Syed Hassan (2000-2002) Indian School of Mines, Dhanbad, India
(7) Durga Vidya (2001-2003)
(8) Trinh Manh Chu (2001-2002) Engineer, Vietnam
(9) James Cashion (2001-2003) Private Consulting, SC
(10) Scott Wiedner (2001-2003) Consultant VA
(11) Raja Srinivasan (2000-2002 Google
(12) Josh Horton (2004-2006) SC Dept of Health and Environmental Control, Columbia SC
(13) Christel Lopez (2005-2007)
(14) Harmony Liff (2007-2009) NOAA Fisheries, NJ

Undergraduate Students

(1)	Kevin Dickey	2000
(2)	Erin Murphy	2001
(3)	Cari Fuller	2001
(4)	Erin Adams	2010
(5)	Ian Thomas	2011
(6)	Prakrut Kansara	2017

NASA, Goddard Space Flight Center/ University of Maryland

(1) Katie Schaaf, Summer Institute on Atmospheric and Hydrospheric Sciences, 1997
(2) Sandra Eng, Summer Institute on Atmospheric and Hydrospheric Sciences, 1998
(3) David Grass, Summer Institute on Atmospheric and Hydrospheric Sciences, 1999;
(4) Josh Rhoads, M. S. Thesis, Department of Geography, University of Maryland, College Park, 1999
(5) Dave Haffner, M. S. Thesis, Department of Geography, University of Maryland, College Park, 1998-1999
(6) Justin Nero, High School Student, 1999

GRADUATE STUDENT COMMITTEES

External member

Josh Rhoads	MS	University of Maryland	(2000)
Siriluk Chumchean	PhD	University of New South Wales, Australia	(2004)
Srinivas Chintalapati	PhD	University of Illinois	(2005)
Laure Montandon	PhD	University of Colorado	(2009)
B Rajagopal	PhD	National Institute of Technology, Suratkal, India	(2012)
Min Chen	PhD	University of Newcastle, Australia	(2012)
Sun Liquin	PhD	Hong Kong University, Hong Kong	(2014)
Brijesh Kumar Tiwari	PhD	National Institute of Technology, Rourkela, India	(2014)
Kumar Raju	PhD	National Institute of Technology, Suratkal	(2015)
Shushma Shashi	PhD	National Institute of Technology, Suratkal	(2015)
Babar S Fulaji	PhD	National Institute of Technology, Suratkal	(2016)
Taina Martins	MS	Universidade Federal do Rio de Janeiro, Brazil	(2016)
Vitor Rebello	PhD	Universidade Federal do Rio de Janeiro, Brazil	(2016)
Mahboobeh Hashemian	PhD	University of Melbourne	(2016)

Eryan Dai	PhD	University of Colorado	(2016)
Shruti Gupta	PhD	National Institute of Technology, Rourkela, India	(2017)

University of South Carolina

Maria Tolika	MS	Geological Sciences	(2001)
Brandi Glett	MS	Marine Sciences	(2002)
Justin Scheidt	MS	Geological Sciences	(2003)
Matt Tymchak	MS	Geological Sciences	(2005)
Jordan Kushner	MS	Geological Sciences	(2008)
Dara Cadden	PhD	Marine Sciences	(2009)
Ipista Gupta	PhD	Geological Sciences	(2009)
Michelle Gierach	PhD	Marine Sciences	(2009)
Sierra Jones	PhD	Biological Sciences	(2010)
Allison Smith	PhD	Biological Sciences	(2010)
Subhajit Ghoshal	PhD	Geography	(2010)
Ebenezer Nyadjro	PhD	Marine Sciences	(2010)
Gary Grunseich	MS	Earth and Ocean Sciences	(2011)
Mirza Billah	PhD	Civil and Environmental Eng.	(2011)
Matthew Nienhaus	MS	Earth and Ocean Sciences	(2011)
Duke Brantley	PhD	Earth and Ocean Sciences	(2011)
Clifford Felton	MS	Marine Sciences	(2014)
Jahangir Alam	PhD	Civil and Environmental Eng.	(2014)
Mehmet Ercan	PhD	Civil and Environmental Eng.	(2014)
Alex Frank	M.S.	Earth and Ocean Sciences	(2014)
Joseph D'Addezio	PhD	Marine Science	(2014)
Paul Sagona	PhD	Earth and Ocean Sciences	(2014)
Bryce Melzer	MS	Marine Sciences	(2015)
Jessica Burns	MS	Marine Sciences	(2016)
Caroline Corbett	MS	Earth and Ocean Sciences	(2016)
Brady Ferster	PhD	School of Earth Ocean and Environment	(2017)
Corinne Trott	PhD	School of Earth Ocean and Environment	(2017)

OPINION EDITORIALS IN THE STATE, NEWSPAPER COLUMBIA SC

(1) What is global warming? March 2000
(2) For drought, no end in sight, October 2002
(3) Now it is rain, rain go away, June 2003
(4) Education dollars should match our ideals, October 2003
(5) Hurricanes reshaping our land, September 2004
(6) Facts and Fiction on Global Climate Change, March 2005
(7) The lesson of levees, January 2006
(8) India and US Partners again, March 2006
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(10) In innovation, US still leads, December 2006
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(12) Increasingly, we wait for rain, July 2007
(13) Its more than just melting ice, October 2007
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(15) Truth about ethanol, July 2008

(16) Hurricanes: Clash of climate and culture, September 2008
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(25) Earth day South Carolina Beautiful places April 2011
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(27) A new road for India-SC ties, February 2012
(28) Nothing to celebrate the record heat of 2012, January 2013
(29) Downside to SC's heavy rainfall – drainage problems, September 2013
(30) Is it old enough for you: winter freeze brings summer benefits, January 2014
(31) Why NASA's latest mission matters to South Carolina, February 2015
(32) 10 years after Katrina, Is SC prepared, August 2015
(33) Amidst destruction there is renewal: South Carolina Flood, October 2015
(34) Why earthen dams fail? December 2015
(35) Columbia conference will rock your world, March 2016
(36) Power of Hurricane Matthew, October 2016
(37) SC has much to celebrate and do for Earth Day, April 2017