

## **Venkataraman (Venkat) Lakshmi**

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### **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**

2019-	Professor, Engineering Systems and Environment, University of Virginia
2017-2018	Program Director, Hydrologic Sciences, National Science Foundation
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
2006-2018	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) Fellow, Geological Society of America (GSA) 2020
- (2) Fellow, American Society of Civil Engineers (ASCE) 2018
- (3) Professional Engineer (PE), State of Maryland, Registration # 25394, 2002-present
- (4) Senior Member, Institute of Electrical and Electronic Engineers, 2002-present
- (5) NASA Group Achievement Award for the AQUA Mission 2003
- (6) Cox Visiting Professor, Stanford University, 2006-2007; 2015-2016
- (7) William Mong Visiting Research Fellowship, University of Hong Kong 2010
- (8) Mortar Board Award for Excellence in Teaching, University of South Carolina, 2010-2011
- (9) NASA Group Achievement Award for the SMAP Validation Experiment 2013
- (10) Outstanding Associate Editor, Vadose Zone Journal 2014
- (11) Carolina Trustee Professor, University of South Carolina 2016

- (12) Nanshan Distinguished Lecture on the Environment, Southern University of Science and Technology, May 2017
- (13) Last Lecture, University of South Carolina, South Carolina Honors College, February 2018
- (14) 16<sup>th</sup> Annual Asia Oceanic Geoscience Society Hydrological Sciences Distinguished Lecture July 2019
- (15) Nanshan Distinguished Lecture on the Environment, Southern University of Science and Technology, November 2019

#### **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 Award for Graduate Research, Iliana Mladenova, (PhD 2009)
- (6) Taber Outstanding PhD Research Award, Bin Fang (PhD 2015), Department of Earth and Ocean Sciences, University of South Carolina, 2015
- (7) Taber Outstanding Teaching Assistant Award, Jessica Price Sutton, Department of Earth and Ocean Sciences, University of South Carolina, 2015
- (8) Taber Outstanding PhD Research Award, Jessica Price Sutton (PhD 2016), Department of Earth and Ocean Sciences, University of South Carolina, 2016
- (9) Bicentennial Fellowship, Hyunglok Kim (2019-2024), Engineering Systems and Environment University of Virginia
- (10) Future Investigators in NASA Earth and Space Science Technology (FINESST) (2019-2022) Hyunglok Kim, (PhD. 2017-)
- (11) Outstanding Student Presentation Award, Hyunglok Kim, PhD student, AGU Fall Meeting, 2019
- (12) Second place in University of Virginia Engineering Research Symposium, Second Place (2020) Hyunglok Him (PhD. 2017-)

#### **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, 2007-2019
- (6) Editor, Vadose Zone Journal, 2014-present
- (7) Editorial Board, Remote Sensing, Springer Books 2017-present
- (8) Editor-in-Chief, Remote Sensing in Earth System Science, Springer 2017-present

#### **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*, 2007-2018
- (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
- (88) Chair Southeastern Section Geological Society of America, 2017-2018
- (89) Member, Interagency Collaboration on Environmental Measurements and Modeling, 2018
- (90) Chair, Special Session Remote Sensing of Soil Moisture, Asia Pacific Society for Optics and Photonics, Honolulu, Hawaii, September 24-26, 2018
- (91) Member, United States Global Research Program (USGCRP) Technical Committee for Hydrological Modeling, 2017-2018
- (92) Chair, Workshop Planning Committee, National Academies, Workshop, Water Science and Technology Board on "Groundwater Recharge and Flow: Approaches and Challenges for Monitoring and Modeling Using Remotely Sensed Data", October 2018-April 2019
- (93) Convener, Remote Sensing and Modeling of the Terrestrial Water Cycle, Fall Meeting of the American Geophysical Union, Washington DC; December 10-14, 2018
- (94) University of Virginia Representative to University Corporation for Atmospheric Research (UCAR), 2019
- (95) Co-Chair Hydrology Focus Group and member of executive committee Community Surface Dynamics Modeling Systems, University of Colorado Boulder, 2015-present
- (96) Convener, Remote Sensing and Modeling of the Terrestrial Water Cycle, Fall Meeting of the American Geophysical Union, San Francisco CA; December 9-13, 2019
- (97) Member, Water Science and Technology Board, National Academies of Sciences, 2020-2023

#### **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

- (24) National Science Foundation Hydrological Sciences Fall 2017
- (25) National Science Foundation Big Data Spokes GEO Spring 2018
- (26) National Science Foundation US-China INFEWS Spring 2018
- (27) National Science Foundation Hydrological Sciences Spring 2018
- (28) National Science Foundation Hydrological Sciences Fall 2018
- (29) NASA Earth Sciences Panel Fall 2019

### **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), Member  
 American Meteorological Society (AMS), Member  
 American Society of Civil Engineers (ASCE), Fellow  
 International Electrical and Electronic Engineers (IEEE), Senior Member  
 Geological Society of America, Fellow

### **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

**SERVICE UNIVERSITY OF VIRGINIA**

(1) Advisor, Search Committee, Modeling and simulation at the human technology frontier, Department of Engineering Systems and Environment, 2018-2019

(2) Chair, Peer Review Committee, Department of Engineering Systems and Environment 2018-2019

(3) Faculty Senator, University of Virginia 2019-2022

(4) School of Engineering and Applied Sciences Faculty Council 2019-2022

(5) Chair, School of Engineering and Applied Sciences Faculty Council 2019-2020

(6) School of Engineering and Applied Sciences (SEAS) Promotion and Tenure Committee (P&T) 2019-

(7) Member, School of Engineering and Applied Sciences Leadership Council

(8) Member, Faculty Search, Complex Systems, Engineering Systems and Environment 2019-2020

**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)                             |
| 1999-2002 | Coupling satellite remote sensing and unsteady flow modeling for discharge estimation, NASA (with Bradley, Iowa, Birkett, University of Maryland)                             |
| 2000-2001 | Determination of land surface soil moisture using L and S band sensors, JPL/Caltech (with Njoku JPL)  |
| 2000-2003 | The influence of land atmosphere interactions on variability of the North American Monsoon, NASA (with Small, Colorado)   |
| 2001-2002 | Spatial scaling and temporal persistence of soil moisture using observations and analysis, NOAA/NCEP (with Mitchell, NCEP)  |
| 2001-2002 | Development of simple, inexpensive and reliable tool for determination of in-situ soil water content, USC, (with Pierce, USC),  |
| 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) |
| 2001-2004 | Extended validation of AMSR-E soil moisture products, NASA, (with Jackson USDA/ARS)   |
| 2002-2005 | Studies of combined passive and active remote sensing, NASA (with Njoku JPL and Jackson USDA/ARS)   |
| 2004-2007 | Climate change and intertidal biogeography: Coupling remote sensing data to thermal physiology across a cascade of scales, NASA, (with Helmuth, USC)                          |
| 2003-2006 | Hydrological Information System, NSF, (with Maidment, University of Texas),   |
| 2005-2006 | Spatially distributed wetness resulting from flooding from Hurricane Katrina  |
| 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)   |
| 2004-2008 | Use of satellite soil moisture observations for improved prediction of the North American precipitation variability, NASA (with Small, University of Colorado)                |



2004-2008	AQUA AMSR-E soil moisture algorithm product improvement, NASA, (with Jackson USDA/ARS, Njoku, JPL)
2005-2008	Hydrological validation of satellite soil moisture estimates, JAXA
2004-2009	Ecological impact of climate change on marine organisms, NOAA, (with Wethey, USC)
2007-2012	Determining the impact of climate change on intertidal mussels using MODIS surface temperatures, NASA, (with Helmuth, USC)
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)
2012-2019	Disaggregation of passive microwave soil moisture using MODIS and NLDAS, NASA, (with Rodell, NASA and Pinker, University of Maryland)
2013-2017	Determination of the available water capacity for the Mekong River Basin using models and satellite observations, NASA, (with Bolten, NASA)
2015-2017	Modeling the water resources of the major river basins of the world using NASA satellite data, NASA
2015-2018	Southeast offshore storage resources, DOE, (with Knapp, USC)
2016	Application of InSAR for measuring ground movement in South Carolina, SCDNR, (with Inthuorn, USC)
2016-2019	Improved hydrologic decision support for the Lower Mekong River basin through integrated remote sensing and modeling, NASA (with Bolten, NASA)
2016-2019	Floodplain circulation defined by in-situ observations, numerical simulations and remote sensing, NASA (with Torres, USC),
2017-2019	Synergistic use of AMSR2 and GPM data to quantify spatial and temporal dynamics of the hydrological cycle at watershed and regional scales, JAXA
2017-2020	Evaluation of risk and capacity building for two Indian river basins, NASA Applied Sciences
2018-2021	Use of vegetation and surface temperature for downscaling SMAP soil moisture, NASA GSFC
2020-2023	Improved Assessments of Permafrost and seasonally frozen ground in High Mountain Asia by Integrating Satellite Observations with Physics-Based Models and In-Situ Observations, NASA Earth Science (with Hari Rajaram, Johns Hopkins)

### **GRADUATE STUDENTS (PRIMARY ADVISOR)**

#### **Doctoral Students** and current location

- (1) John Bolten (1999-2005) Scientist NASA Goddard Space Flight Center, Greenbelt MD
- (2) Lizbeth Guijarro (2000-2005) Manager BHP Billiton, Houston TX
- (3) Ujjwal Narayan (2002-2006) Independent consultant
- (4) Bryan Hong (2003-2008) Scientist National Institute of Ecology, South Korea
- (5) Iliana Mladenova (2006-2009) Scientist United States Department of Agriculture
- (6) Bin Fang (2010-2015) Research Associate University of Virginia, VA
- (7) Jessica Price (2011-2016) Faculty Department of Environmental Sciences, Berry College, GA
- (8) Reyadh Al-Barakat (2014- 2019) Research Associate University of Virginia
- (9) Adil Awad Al-Shammari (2015-present) University of South Carolina
- (10) Chelsea Dandridge (2017- present) University of Virginia
- (11) Hyunglok Kim (2017- present) University of Virginia
- (12) Hung Manh Le (2018- present) University of Virginia

- (13) Prakrut Kansara (2018- present) University of Virginia
- (14) Runze Zhang (2019- present) University of Virginia
- (15) Gigi Pavur (2020-present) University of Virginia
- (16) Robin Kim (2020-present) University of Virginia

#### **Masters Students and current location**

- (1) Diane Zehrhuhs (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 (Research), University of South Carolina**

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

#### **Postdoctoral Research Associates**

- Srinivas Chintalapati (2005-2008) University of South Carolina
- Bin Fang (2016-2018) University of Virginia
- Jessica Price (2016-2017) University of South Carolina
- Arun Mondal (2017-2019) University of South Carolina
- Sananda Kundu (2017-2019) University of South Carolina
- Bin Fang (2019- present) University of Virginia
- Reyadh Albarakat (2020-present) University of Virginia

#### **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)
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Eryan Dai	PhD	University of Colorado	(2016)
Shruti Gupta	PhD	Indian Institute of Technology, Roorkee, India	(2017)
Varvara Meliadou	PhD	Democritus University of Thrace, Greece	(2017)
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Shray Pathak	PhD	Indian Institute of Technology, Roorkee, India	(2019)
Chetan Sharma	PhD	Indian Institute of Technology, Roorkee, India	(2019)
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Allison Smith	PhD	Biological Sciences	(2010)
Subhjit Ghoshal	PhD	Geography	(2010)
Ebenezer Nyadjro	PhD	Marine Sciences	(2010)
Gary Grunseich	MS	Earth and Ocean Sciences	(2011)
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Matthew Nienhaus	MS	Earth and Ocean Sciences	(2011)
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Paul Sagona	PhD	Earth and Ocean Sciences	(2014)
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Jessica Burns	MS	Marine Sciences	(2016)
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Corinne Trott	PhD	School of Earth Ocean and Environment	(2017)
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### JOURNAL PUBLICATIONS

(Italics indicates student authors)

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- (63) Matsui, T., **V. Lakshmi** and E. Small, Influence of Vegetation Anomalies on the predictability of the North American Monsoon System, using Remotely Sensed Data and MM5-OSU LSM coupled model, American Geophysical Society, Fall Meeting, San Francisco, CA, December 10-14, 2001
- (64) Srinivasan, R., and **V. Lakshmi**, Large Scale Hydrological Modeling of Upper Mississippi River Basin, American Geophysical Society, Fall Meeting, San Francisco, CA, December 10-14, 2001
- (65) Bolten, J., **V. Lakshmi** and E. Njoku, Remote sensing and studies of spatial heterogeneity of soil moisture, American Geophysical Society, Fall Meeting, San Francisco, CA, December 10-14, 2001

- (66) Jackson, T., D. Bosch, D. Goodrich, M. Siegfried, P. Starks and **V. Lakshmi**, Validation of AMSR-E Soil moisture products using watershed scale observations, American Geophysical Society, Fall Meeting, San Francisco, CA, December 10-14, 2001
- (67) **Lakshmi, V.**, Assimilation in land surface hydrology: A general theory, American Meteorological Society 82<sup>nd</sup> Annual Meeting, Symposium on observations, data assimilation and probabilistic prediction, Orlando, FL, January 13-17, 2002
- (68) **Lakshmi V.**, J. Bolten and E. Njoku, Active passive remote sensing of soil moisture, American Meteorological Society 82<sup>nd</sup> Annual Meeting, 16<sup>th</sup> conference on hydrology, Orlando, FL, January 13-17, 2002
- (69) Srinivasan, R. and **V. Lakshmi**, Issues with Large Scale Hydrological Modeling: Sensitivity & Calibration, American Geophysical Society, Spring Meeting, Washington DC, May 28-31, 2002
- (70) Matsui, T., **Lakshmi, V.** and E. Small, Influence of Vegetation Anomalies on the variability of the North American Monsoon System, using Remotely Sensed Data and Regional Climate Model, American Geophysical Society, Spring Meeting, Washington DC, May 28-31, 2002
- (71) Maidment, D., W. Graham, A. Kruger, P. Kumar, **V. Lakshmi**, U. Lall, D. Lettenmaier, and C. Zheng, Hydrologic Information Systems for the CUAHSI, American Geophysical Society, Spring Meeting, Washington DC, May 28-31, 2002
- (72) Bolten, J., **V. Lakshmi**, E. Njoku, T. Jackson, Comparisons of Soil Moisture Retrievals Using the C-Band Polarimetric Scanning Radiometer and Passive/Active L/S Band Sensor During the Southern Great Plains 1999 Experiment, American Geophysical Society, Spring Meeting, Washington DC, May 28-31, 2002
- (73) Hassan, S., **V. Lakshmi**, D. Lohmann, E. Paleologos, A look at temporal and spatial scales of input and output from the NOAA land surface model in the LDAS project, GEWEX Americas Prediction Project Meeting, New Orleans, LO, May 13-17, 2002
- (74) **Lakshmi, V.**, Multi-variable, multi-process validation of hydrological models, Second Federal Interagency Hydrologic Modeling Conference, Las Vegas, NV, July 30- August 1, 2002
- (75) **Lakshmi, V.**, R Srinivasan, A new hydrological-ecological-climatological drought index, American Geophysical Union Fall Meeting, December 6-10, 2002
- (76) R Srinivasan, **V. Lakshmi**, Sensitivity and change using hydrological modeling, American Geophysical Union Fall Meeting, December 6-10, 2002
- (77) Bolten, J., **V. Lakshmi**, A. Gasiewski, T. Jackson, E. Njoku, An Evaluation of Soil Moisture and Vegetation Estimation Using Passive/Active Microwave and Optical Remote Sensing, American Geophysical Union Fall Meeting, December 6-10, 2002
- (78) Bradley, A., **V. Lakshmi** and R. Srinivasan, Uncertainty Assessment for River Discharge Estimates Based on Satellite Radar Altimetry Sampling, American Geophysical Union Fall Meeting, December 6-10, 2002
- (79) **Lakshmi, V.**, J. Bolten, U. Narayan, T. Jackson, Estimation of Soil Moisture Using Data from Advanced Microwave Scanning Radiometer, International Geoscience and Remote Sensing Symposium, Toulouse, France, July 22-29, 2003
- (80) **Lakshmi, V.**, Use of Satellite Remote Sensing in Prediction of Ungaged Basins, International Union of Geodesy and Geophysics, Sapporo, Japan, June 25-July 11, 2003
- (81) Bosch, D., **V. Lakshmi**, J. Jacobs, T. Jackson, Soil Moisture Observations for Validation of Remotely Sensed Data: SMEX 03, Georgia, American Geophysical Union Fall Meeting, December 8-12, 2003

- (82) Cashion, J., **V. Lakshmi**, D. Bosch, Use of TRMM Microwave Imager (TMI) to characterize soil moisture for the Little River Watershed, American Geophysical Union Fall Meeting, December 8-12, 2003
- (83) Bolten, J., **V. Lakshmi**, Simulation of AMSR-E Brightness Temperatures During the 2002 SMEX Experiment, American Geophysical Union Fall Meeting, December 8-12, 2003
- (84) Narayan, U., **V. Lakshmi**, E. Njoku, Retrieval of Soil Moisture From Passive and Active L/S Sensor Observations During the Soil Moisture Experiments in 2002, American Geophysical Union Fall Meeting, December 8-12, 2003
- (85) Maidment, D., J Helly, W. Graham, A Kruger, P Kumar, **V Lakshmi**, D Lettenmaier, C Zheng, U Lall, M Piasecki, C Duffy, CUAHSI Hydrologic Information System and its role in hydrologic observatories, American Geophysical Union Fall Meeting, December 8-12, 2003
- (86) **Lakshmi, V.**, Use of Satellite Remote Sensing in Prediction of Ungaged Basins, American Geophysical Union Fall Meeting, December 8-12, 2003
- (87) Bosch, D., **V. Lakshmi**, J. Jacobs, and T. Jackson. 2003. Soil moisture observations for validation of remotely sensed data: SMEX 03, Georgia, American Geophysical Union. Fall Meeting, December 8-12, 2003
- (88) **Lakshmi, V.**, Use of Remote Sensing in the Prediction of Ungaged Basins, Australia-Japan PUB Workshop, February 1-3, 2004
- (89) **Lakshmi, V.**, AMSR remote sensing of soil moisture, MICRORAD: Specialists meeting, Rome, Italy, February 21-25, 2004
- (90) **Lakshmi, V.**, J. Bolten and U. Narayan, Advances in microwave remote sensing of soil moisture, European Geophysical Union General Assembly, April 25-30, 2004
- (91) **Lakshmi, V.**, Estimation of groundwater recharge, hydrological modeling and satellite remote sensing in ungaged basins, European Geophysical Union General Assembly, April 25-30, 2004
- (92) Bolten, J., and **V. Lakshmi**, Large-Scale Soil Moisture Observations Using the Advanced Microwave Scanning Radiometer During the 2002 Soil Moisture Experiment, American Geophysical Union Spring Meeting, May 17-21, 2004
- (93) Narayan, U., **V. Lakshmi**, and E. Njoku, An approach for spatial disaggregation of radiometer estimated soil moisture using higher resolution radar observations, American Geophysical Union Spring Meeting, May 17-21, 2004
- (94) Guijarro, L., **V. Lakshmi** and Y. Kerr, Land Surface Temperature and Surface Soil Moisture Retrieval Using the SSM/I Instrument, American Geophysical Union Spring Meeting, May 17-21, 2004
- (95) **Lakshmi, V.**, Use of Satellite Remote Sensing in Hydrological Predictions in Ungaged Basins, International Society of Photogrammetry and Remote Sensing, July 21-24, 2004
- (96) **Lakshmi, V** and L. Murdoch, The Greater Santee Hydrological Observatory, Hydrological Observatory Workshop, August 24-25, 2004
- (97) Narayan, U., **V. Lakshmi** and E. Njoku, An algorithm to predict soil moisture change at spatial scale of radar operation, International Geoscience and Remote Sensing Symposium, September 20-24, 2004
- (98) **Lakshmi, V.**, J. Bolten and U. Narayan, Microwave Remote Sensing: A perspective from the last few field experiments, International Geoscience and Remote Sensing Symposium, September 20-24, 2004
- (99) Bosch, D., T. Jackson, **V. Lakshmi**, J. Jacobs, and S. Moran. 2004. In situ soil moisture network for validation of remotely sensed data. International Geoscience and Remote Sensing Symposium, September 20-24, 2004

- (100) Marshall, L., D. Bosch, **V. Lakshmi**, and J. Jacobs. 2004. Temporal and spatial variance of soil moisture across a Southeastern coastal plain watershed. ASA-CSSA-SSSA International Meeting, Oct. 31 - Nov. 4, 2004
- (101) Narayan, U., **V. Lakshmi**, A Simple method for Spatial Disaggregation of Radiometer Derived Soil Moisture Using Higher Resolution Radar Observations, American Geophysical Union Fall Meeting, December 13-17, 2004
- (102) Hong, S., **V. Lakshmi**, E. Njoku and E. Small, Relation between satellite-derived vegetation indices, surface temperature and vegetation water content, American Geophysical Union Fall Meeting, December 13-17, 2004
- (103) **Lakshmi, V.**, Prediction of water resources in ungaged basins using satellite remote sensing, International Association of Hydrological Sciences, General Assembly, April 2-7, 2005
- (104) **Lakshmi, V.**, Use of satellite remote sensing for hydrological prediction in ungaged basins, Education, Information Systems, Technologies and Applications, July 13-17, 2005
- (105) Narayan, U., and **V. Lakshmi**, Disaggregation of soil moisture from radiometer using active radar data, International Geoscience and Remote Sensing Symposium, July 25-29, 2005
- (106) Narayan, U. and **V. Lakshmi**, A simple method for spatial disaggregation of radiometer derived soil moisture using higher resolution radar observations, Progress in Electromagnetic Remote Sensing, August 22-25, 2005
- (107) **Lakshmi, V.**, Use of active and passive microwave remote sensing, International conference on Environmental Management, October 28-30, 2005
- (108) **Lakshmi, V.**, Use of hydrological modeling and satellite remote sensing for prediction in ungaged basins, Keynote lecture at the International conference on Environmental Management, October 28-30, 2005
- (109) Narayan, U. and **V. Lakshmi**, Estimation of High Resolution Estimates of Soil Moisture Change and Their Assimilation Into a Land Surface Model, American Geophysical Union Fall Meeting, December 5-9, 2005
- (110) Bolten, J., T J Jackson, **V Lakshmi**, M H Cosh, M Drusch, Long-Term Evaluation of the AMSR-E Soil Moisture Product Over the Walnut Gulch Watershed, AZ, American Geophysical Union Fall Meeting, December 5-9, 2005
- (111) **Lakshmi, V**, T J Jackson, E G Njoku, J D Bolten, L N Guijarro Validation of AMSR-derived soil moisture: Lessons from SMEX02, SMEX03 and SMEX04, American Geophysical Union Fall Meeting, December 5-9, 2005
- (112) Kanwar, R., U Narayan, **V Lakshmi**, A Prototype Hydrologic Observatory for the Neuse River Basin Using Remote Sensing Data as a Part of the CUAHSI-HIS Effort, American Geophysical Union Fall Meeting, December 5-9, 2005
- (113) Hong, S., **V Lakshmi**, E E Small, E G Njoku, F Chen, Relationships among vegetation properties related to their interactions with atmosphere from the analysis of satellite derived data, American Geophysical Union Fall Meeting, December 5-9, 2005
- (114) **Lakshmi, V.**, Remote sensing and scaling of satellite derived hydrological variables, *Invited talk*, American Geophysical Union Spring Meeting, May 23-26, 2006
- (115) **Lakshmi, V.** and U. Narayan, Synergistic use of active-passive remote sensing in change detection for soil moisture, *Invited talk*, American Geophysical Union Spring Meeting. May 23-26, 2006
- (116) Purvis, C., **V. Lakshmi**, L. Brin, S. Gilman, B. Helmuth and D. Wethey, Remote sensing and biological climate change ramifications: Monitoring thermal stresses in inter-tidal habitats, American Geophysical Union Spring Meeting. May 23-26, 2006

- (117) Kanwar. R. and **V. Lakshmi**, Long term trends in surface temperature, soil wetness and vegetation from SSM/I and AVHRR sensors, International Geoscience and Remote Sensing Symposium, July 31-August 4, 2006
- (118) Narayan, U. and **V. Lakshmi**, High resolution change estimation of soil moisture by combination of AMSR-E soil moisture and Precipitation Radar (TRMM) backscattering coefficients, International Geoscience and Remote Sensing Symposium, July 31-August 4, 2006
- (119) Purvis, C., **V Lakshmi** and B Helmuth, Satellite monitoring of longterm climate change, Fall Meeting, American Geophysical Union, December 11-15, 2006
- (120) Hong, S., **V Lakshmi**, E Small and F Chen, Incorporation of biophysical factors into a land-atmosphere interaction model, Fall Meeting, American Geophysical Union, December 11-15, 2006
- (121) Hong, S., **V. Lakshmi**, E. Small and F. Chen, Investigation of biophysical effects in a land atmosphere interaction model, International Symposium on Physical Measurements and Signatures in Remote Sensing, March 11-15, 2007
- (122) Hong, S., **V. Lakshmi** and E. Small, Effects of climate and land cover on relationships between vegetation index and water content, International Union of Geodesy and Geophysics, July 2-13, 2007
- (123) Chintalapati, S. and **V. Lakshmi**, Climate variability in coastal ecosystems: Use of MODIS land surface and sea surface temperature observations, American Geophysical Union Fall Meeting, December 10-14, 2007
- (124) Mladenova, I and **V Lakshmi**, Terrain, slope and aspect influence on backscatter, American Geophysical Union Fall Meeting, December 10-14, 2007
- (125) **Lakshmi, V.**, Mladenova, I., T. Jackson and D. Long, Assessment of AMSR-E disaggregation using QuikSCAT backscatter, American Geophysical Union Fall Meeting, December 10-14, 2007
- (126) Hong, S., **V. Lakshmi**, E. Small and F. Chen, Use of Weather Research Forecasting Model and MODIS satellite data for estimation of land atmosphere interactions, American Geophysical Union Fall Meeting, December 10-14, 2007
- (127) **Lakshmi, V.**, C Purvis. B Helmuth, D Wethey, S Woodin and J Hilbish, Use of satellite remote sensing to detect health of intertidal mussels, Ocean Sciences Meeting, March 6-10, 2008
- (128) **Lakshmi, V.**, Land atmosphere interactions using satellite remote sensing and WRF, *Invited talk* at the CUAHSI Biennial Meeting, Boulder CO July 14-16, 2008
- (129) **Lakshmi, V.**, Land surface modeling and remote sensing, NSF EPSCOR Water Dynamics Workshop, Burlington VT, November 9-12 2008
- (130) Chintalapati, **V Lakshmi**, D Wethey MODIS Land and Sea Surface Temperature Observations as Thermal Indicators - Implications for Coastal Climate Variability, AGU Fall meeting December 15-19 2008, San Francisco
- (131) Wethey, S Chintalapati, **V Lakshmi** Thermal Indicators - Implications for Coastal Climate Variability Modeling Intertidal Species Body Temperatures Using A Modified land Surface Model, AGU Fall meeting, December 15-19 2008, San Francisco
- (132) **Lakshmi, V**, I Mladenova, T Jackson, J Walker, O Merlin, R A de Jeu The Impact of Standing Water and Irrigation on AMSR-E Sensitivity to Soil Moisture over the NAFE'06 Experiment Area, AGU Fall meeting, December 15-19 2008, San Francisco
- (133) Famiglietti, L Murdoch, **V Lakshmi**, R Hooper Community Modeling in Hydrologic Science, AGU Fall meeting, December 15-19 2008, San Francisco

- (134) Mladenova, **V Lakshmi**, J Walker, R Panciera, W Wagner, M Doubkova Can the ASAR Global Monitoring Mode Product Adequately Capture Spatial Soil Moisture Variability? , AGU Fall meeting, December 15-19 2008, San Francisco
- (135) **Lakshmi, V.**, S. Hong, E Small and F Chen, The Influence of the Land Surface on Hydrometeorology and Ecology: New Advances from Modeling and Satellite Remote Sensing, Water Environment Energy and Society January 12-16, Delhi, India
- (136) **Lakshmi, V.**, Use of high performance computing in Community Hydrologic Modeling Platform, March 31-April 2, 2009, Memphis, TN
- (137) Moser, C., A. A. Oubeidillah, G. Tootle, V. **Lakshmi** and G. Kerr, 2009. A Comparison of SNOTEL and AMSR-E Snow Water Equivalent Datasets in Western U.S. Watersheds. Presentation at the Third International Workshop on Knowledge Discovery from Sensor Data (SensorKDD-2009), June 28, 2009, Paris, France
- (138) **Lakshmi, V.** and I Mladenova, Examining the Soil Moisture Spatial Variability using the ASAR Global Monitoring Mode Soil Moisture Product over the NAFE'05 area, International Geoscience and Remote Sensing Symposium, July 12-17, 2009, Capetown, South Africa
- (139) **Lakshmi, V.**, S. Hong and E Small, Use of Weather Research and Forecasting Model and Satellite data for study of land atmosphere interactions, Global Energy and Water Cycle Experiment, August 24-28, 2009, Melbourne, Australia
- (140) **Lakshmi V.**, Disaggregation of passive soil moisture estimates using active radar data, *Invited talk*, American Geophysical Union Fall Meeting December 14-18, 2009, San Francisco
- (141) O A Aziz, G A Tootle, T C Piechota, W P Miller, **V Lakshmi**, J A Dracup, El Niño: Hydrologic Relief for Parts of the U.S.? American Geophysical Union Fall Meeting December 14-18, 2009, San Francisco
- (142) Famiglietti, J, L Murdoch, **V Lakshmi** and R Hooper, Progress Towards Community Modeling in Hydrologic Science, American Geophysical Union Fall Meeting December 14-18, 2009, San Francisco
- (143) **Lakshmi, V.** and I Mladenova, An active passive combined algorithm for use in soil moisture remote sensing using satellites, International Geoscience and Remote Sensing Symposium, July 25-30, Honolulu, HI
- (144) **Lakshmi V.**, Using satellite surface temperature observations to detect impact of climate change on intertidal organisms, American Geophysical Union Fall Meeting December 13-17, 2010, San Francisco
- (145) **Lakshmi V**, H Liff, An examination of the intertidal using remotely sensed satellite observations, International Geoscience and Remote Sensing Symposium, July 25-29, 2011, Vancouver, Canada
- (146) Fang B and **V Lakshmi**, Passive microwave soil moisture downscaling using NLDAS and MODIS data, American Geophysical Union Fall Meeting December 5-9, 2011, San Francisco
- (147) Billah, M, J Goodall, U Narayan and **V Lakshmi**, Impacts of evapotranspiration estimates on annual and interannual terrestrial water storage variations in South Carolina, USA, American Geophysical Union Fall Meeting December 5-9, 2011, San Francisco
- (148) Matzelle, A., B Helmuth and **V Lakshmi**, Nearshore Satellite Data as Relative Indicators of Intertidal Organism Physiological Stress, American Geophysical Union Fall Meeting December 5-9, 2011, San Francisco

- (149) **Lakshmi, V** and B Fang, Disaggregation of AMSR-E soil moisture using NLDAS and MODIS, Chapman conference on Remote Sensing of the Terrestrial Water Cycle, Kona Hawaii, February 19-22, 2012
- (150) **Lakshmi, V** and J Price, Use of MODIS data to determine extent of surface temperature change in the Western Coast of United States, Chapman conference on Remote Sensing of the Terrestrial Water Cycle, Kona Hawaii, February 19-22, 2012
- (151) Price, J., H Liff and **V Lakshmi**, An Examination of Body Temperature for the Rocky Intertidal Mussel species, *Mytilus californianus*, Using Remotely Sensed Satellite Observations, American Geophysical Union Fall Meeting December 3-7, 2012, San Francisco, CA
- (152) Fang, B. and **V Lakshmi**, Passive Microwave Soil Moisture Downscaling Using Vegetation and Surface Temperatures, American Geophysical Union Fall Meeting December 3-7, 2012, San Francisco, CA
- (153) Jaska, W., V Sridhar, X Jin, K Hubbard and **V Lakshmi**, Enhancing the utility of AMSR-E soil water using in-situ observations and model estimates, American Geophysical Union Fall Meeting December 3-7, 2012, San Francisco, CA
- (154) Arrigo, J., J Famiglietti, L Murdoch, **V Lakshmi** and R Hooper, Establishing a Framework for Community Modeling in Hydrologic Science: Recommendations from the CUAHSI CHyMP Initiative, American Geophysical Union Fall Meeting December 3-7, 2012, San Francisco, CA
- (155) Billah, M., J Goodall, U Narayan, **V Lakshmi**, A Rajasekar, R Moore, Application of the integrated Rule Oriented Data System (iRODS) to support regional-scale hydrologic modeling, American Geophysical Union Fall Meeting December 3-7, 2012, San Francisco, CA
- (156) **Lakshmi, V.**, B Fang, Use of thermal inertia to disaggregate soil moisture, Progress in Electromagnetic Remote Sensing, March 24-29, 2013, Taipei, Taiwan
- (157) **Lakshmi, V.**, B. Fang and U. Narayan, Spatial downscaling of coarse passive radiometer soil moisture using radar, vegetation index and surface temperature, International Geoscience and Remote Sensing Symposium, July 22-26, 2013, Melbourne, Australia
- (158) Hung, CL, **V. Lakshmi**, J. Bolten, Estimating available water capacity by integrating GRACE observations into a land surface model, American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA
- (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, 65<sup>th</sup> 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 CO<sub>2</sub> 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 Association of Petroleum Geologists Annual Meeting, April 2-5, 2017, Houston, TX
- (230) Gemtzi, 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
- (233) **Lakshmi, V**, Satellite observation of climate change features for ecological modeling, *Invited Talk*, International Society for Ecological Modeling Global Conference, September 18-22, 2017, Jeju Island South Korea
- (234) Mondal, A., **V Lakshmi**, S Jain and P Kansara, Snow Cover Distribution and Variation using MODIS in the Himalayas of India, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (235) Sen, I., **V Lakshmi** and G Mishra, Major and Trace Element Fluxes to the Ganges River: Significance of Small Flood Plain Tributary as Non-Point Pollution Source, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (236) Guha, S., A Mondal, **V Lakshmi**, S Kundu, R Garg, H Govil, Evaluating the NCI Technique in Land use/Land cover Change Detection using Landsat data, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (237) Al-Shammari, A., D Brantley, C Knapp, **V Lakshmi**, Impact of mineralization on carbon dioxide migration in term of critical value of fault permeability, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (238) Knapp, C., J Knapp, D Brantley, **V Lakshmi**, K Almutairi, D Almayahi, O Atikunde, J Ollman, Onshore/ Offshore Geologic Assessment for Carbon Storage in the Southeastern United States, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (239) Sridhar, V., M Billah, **V Lakshmi**, B Fang, Total water storage assessment using GRACE and a hydrological model, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (240) Kansara, P., V Mishra, **V Lakshmi** and R AlBarakat, Evolution of groundwater resources in response to pumping, land use change and rainfall in India, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA

- (241) Khare, D., S Kundu, A Mondal, C Hain and **V Lakshmi**, Landuse change impact on actual evapotranspiration using SEBAL and future changes, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (242) Chandniha, S., A Mondal, S Kundu, **V Lakshmi**, H Hashemi, Comparison of Precipitation from Gauge and Tropical Rainfall Measurement Mission (TRMM) for River Basins of India, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (243) Kim, H. and **V Lakshmi**, Evaluating the Long-term Water Cycle Trends at a Global-scale using Satellite and Assimilation Datasets, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (244) Kundu, S., H Jung, **V Lakshmi** and R Torres, Flood extent mapping and water level change using Sentinel-1 data, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (245) ALBarakat, R., **V Lakshmi** and C Tucker, Comparison and Evaluation of Long-Term NDVI product Derived from the NOAA AVHRR, MODIS and Landsat ETM+ Over the Mesopotamian Marshlands, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (246) Miller, W., B Thakur, A Kalra, K Lamb, J Fayne, G Tootle, **V Lakshmi**, Snow Water Equivalent Variations across the western United States and its relation to of El Niño Southern Oscillation, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (247) Dandridge, C., **V Lakshmi**, J Sutton and J Bolten, Precipitation estimates and comparison of satellite rainfall data to in situ rain gauge observations to further develop the watershed-modeling capabilities for the Lower Mekong River Basin, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (248) Hashemi, H., J Fayne, R Knight and **V Lakshmi**, High-resolution Monthly Satellite Precipitation Product over the Conterminous United States, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (249) Tootle, G., **V Lakshmi**, M Therell, R Huffaker, E Elliott, Multi-decadal Decline of Southeast United States Streamflow, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (250) Senanyake, I., I Seo, N Tangdamrongsub, G Willgoose, G Hancock, T Wells, B Fang and **V Lakshmi**, Estimating Soil Moisture at High Spatial Resolution with Three Radiometric Satellite Products: A Study from a South-Eastern Australian Catchment, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (251) Le, M., J Sutton, D Bui, **V Lakshmi** and J Bolten, Comparison between satellite precipitation product and observation rain gauges in the Red-Thai Binh River Basin, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (252) Mohammed, I, R Srinivasan, **V Lakshmi**, J Bolten, Improved Lower Mekong River Basin Hydrological Decision Making Using NASA Satellite-based Earth Observation Systems, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (253) Modi, P., **V Lakshmi** and V Mishra, Changes in the flood frequency in the Mahanadi basin under observed and projected future climate, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (254) Goodrich, D., J Tan, W Petersen, C Unkrich, E Demaria, P Hazenberg, **V Lakshmi**, GPM Precipitation Estimates over the Walnut Gulch Experimental Watershed/LTAR site in Southeastern Arizona, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA

- (255) Arumugam, S., A Marzooei, **V Lakshmi** and A Wood, Data Assimilation using observed streamflow and remotely-sensed soil moisture for improving sub-seasonal-to-seasonal forecasting, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (256) Flores, A., **V Lakshmi**, R AlBarakat and M Maksimowicz, Characterizing Impacts of Land Grabbing on Terrestrial Vegetation and Ecohydrologic change in Mozambique through Multiple-sensor Remote Sensing and Models, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (257) A Gemitzi, E Maria, E Dimitrios, K Argiro, K Georgios, K Kiriakos, K Paraskevi, M Christos, S Eleni, T Angeliki, T Irini, **V Lakshmi**, Annual and seasonal distribution of day and night Land Surface Temperature trend over Greece, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (258) Sutton, J., **V Lakshmi** and J Bolten, Mapping Precipitation in the Lower Mekong River Basin and the U.S. Affiliated Pacific Islands, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (259) Fang, B., **V Lakshmi**, T Jackson and R Bindlish, SMAP Radiometer Soil Moisture Downscaling in CONUS, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (260) Ajami, H., A Sharma and **V Lakshmi**, On the Fidelity of Semi-distributed Hydrologic Model Simulations for Large Scale Catchment Applications, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (261) Garg, R., S Guha, A Mondal, **V Lakshmi** and S Kundu, Downscaling of Seasonal Landsat-8 and MODIS Land Surface Temperature (LST) in Kolkata, India, American Geophysical Union Fall Meeting, December 11-15, 2017, New Orleans, LA
- (262) **Lakshmi, V.**, B Fang, C Dandridge, J Bolten, H Manh and B Dui, Use of satellite data for hydrological studies in the Lower Mekong River Basin, Vietnam Water Week, March 3-7, 2018, Hanoi, Vietnam
- (263) **Lakshmi, V.**, Hydrology from Space, Keynote lecture, International Conference on Geomatics in Civil Engineering, April 5-6, 2018, Roorkee, India
- (264) Gemitzi, A. and **V Lakshmi**, Trends in vegetation changes over various land use environments over Greece using remote sensing data, European Geophysical Union Meeting April 8-13, 2018, Vienna, Austria
- (265) Mohammed, I., J Bolten, R Srinivasan and **V Lakshmi**, Insights in streamflow variability in the Lower Mekong River Basin using in-situ observations, modeling and NASA satellite observations, European Geophysical Union Meeting April 8-13, 2018, Vienna, Austria
- (266) Lakshmi, V., Hydrology from Space, Asia-Oceania Geoscience Society Annual Meeting June 4-8 2018 Honolulu, Hawaii
- (267) Fang, B., V Lakshmi, R Bindlish and T Jackson, Downscaling SMAP soil moisture using surface temperature and vegetation index, International Geoscience and Remote Sensing Symposium, July 23-27 2018 Valencia, Spain
- (268) Lakshmi, V., B Fang, R Bindlish and T Jackson, Use of vegetation and surface temperature to obtain high resolution soil moisture from SMAP, Asia Pacific Remote Sensing Conference, SPIE – International Society for Optics and Photonics, September 24-26 2018 Honolulu, Hawaii
- (269) Yeo, I., I Senanyake, T Tangdamrongsub, G Willgoose, G Hancock, T Wells, B Fang, **V Lakshmi** and J Walker, An in-situ based model to downscale satellite soil moisture products, SMAP Cal/Val Workshop, October 22-23 2018, Fairfax, VA

- (270) Kim, H. and **V Lakshmi**, Global Dynamics of Surface Soil Moisture Memory from Satellite and Reanalysis Datasets, 5<sup>th</sup> Satellite Soil Moisture Validation and Application Workshop, October 24-25, 2018, Fairfax VA
- (271) Dandridge, C., B Fang, J Bolten and **V Lakshmi**, Downscaling of SMAP enhanced soil moisture product in the Lower Mekong River Basin, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (272) Le, M, **V Lakshmi**, H Bui and D Bui, Hydrological evaluation of TRMM and GPM Multi-satellite products for the data-scare regions, the upper Srepok River Basin of Vietnam, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (273) Pathak, S., C Ojha, R Garg, **V Lakshmi** and A Shukla, GIS Based Multi-Criteria Analysis for Evaluating Groundwater Potential Zones in Dehradun, India, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (274) Kim, H. and **V Lakshmi**, The impact of irrigation on the water cycle of the contiguous United States, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (275) Anderson, E. and **V Lakshmi** and many others, Strategies, practices and challenges for interagency co-authorship in an international science and development program, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (276) Van der Steeg, S., H Xu, R Torres, **V Lakshmi**, J Sullivan and E Viparelli, Through bank flooding of flood plains, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (277) Xu, H., S. Van der Steeg, S., R Torres, **V Lakshmi**, J Sullivan and E Viparelli, Analyses of low-gradient floodplain topography and floodplain-surface channels by automatic LiDAR DEM processing, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (278) AlBarakat, R. and **V Lakshmi**, Evaluation of NDVI Downscaling 5-km AVHRR Growing Season based on Long Term of Landsat Images in Mesopotamian Marshlands, Iraq, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (279) Kansara, P. and **V Lakshmi**, Water quality and quantity assessment using SWAT in the Ganga- Brahmaputra River Basin, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (280) Chaudhari, D., V Mishra and **V Lakshmi**, Satellite based water budget for river basins in India, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (281) Mondal, A., H Hashemi and **V Lakshmi**, Bias correction of long-term satellite based monthly precipitation product (TRMM 3B43) using Gauge based IMD data in India, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (282) Kundu, S., **V Lakshmi** and R Torres, Estimation of inundation, depth, and magnitude of flooding during the Hurricane Harvey using Sentinel-1 and UAVSAR data, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (283) Fang, B., **V Lakshmi**, R Bindlish and T Jackson, Downscaling SMAP radiometer soil moisture using land surface temperature and vegetation over CONUS, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (284) Guha, S., A Mondal, V Mishra and **V Lakshmi**, Observed changes in long-duration droughts in major river basins in India, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (285) Roy, C., S Kundu and **V Lakshmi**, Estimation of actual evapotranspiration and projection of climate change impacts in India, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC

- (286) Alshammari, A., D Brantley, C Knapp, J Knapp and **V Lakshmi**, Evaluation of Carbon Dioxide Sequestration in Southeastern United States Outer Continental Shelf, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (287) Bindlish, B., P Liu, B Fang, **V Lakshmi**, P O'Neill, Z Yang, High-Spatial Resolution Soil Moisture from Integration of Spaceborne Observations for Agricultural Applications in the Western United States, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (288) Mohammed, I., S McDonald, C Meechaiya, F Chishtie, P Towasiphorn, R Srinivasan, **V Lakshmi** and J Bolten, NASA Satellite-based Earth Observation Systems and Hydrological Modeling Enhance Capacity Building in the Lower Mekong River Basin, American Geophysical Union Fall Meeting, December 10-14, 2018, Washington DC
- (289) Dandridge, C. and **V Lakshmi**, Downscaling of soil moisture from SMAP for Lower Mekong River Basin, Vietnam International Water Week, March 22-25, 2019, Hanoi Vietnam
- (290) **Lakshmi, V.**, Observing Terrestrial Water Cycle from Space, Era of big data to solve world water problems, Vietnam International Water Week, March 22-25, 2019, Hanoi Vietnam
- (291) Banti, M., A Gemitzi and **V Lakshmi**, A downscaling approach for SMAP soil moisture estimates using in situ measurements and a vegetation index, European General Union Meeting, April 8-12, 2019, Vienna Austria
- (292) Mohammed, I., **V Lakshmi** and others, NASA web-based decision support systems tools: Climate data access, and retrieval (NASAaccess) and hydrological modeling visualization (SWAT-online), European General Union Meeting, April 8-12, 2019, Vienna Austria
- (293) Fang, B., **V Lakshmi**, R Bindlish and T Jackson, Improving spatial resolution of SMAP soil moisture using vegetation and surface temperature for CONUS, Photonics and Electromagnetic Research Symposium, June 17-21, 2019, Rome, Italy
- (294) Sutton, J., K Lanyon and **V Lakshmi**, A Look at Typhoons Using Satellite-based Precipitation from NASA and NOAA, 12<sup>th</sup> Precipitation Conference, June 19-21, 2019, Irvine, California
- (295) **Lakshmi, V.** and J Bolten, Study of Global River Basins for Hydrological Extremes Using Satellite Data and Model Outputs, 12<sup>th</sup> Precipitation Conference, June 19-21, 2019, Irvine, California
- (296) Fang, B., **V Lakshmi**, R Bindlish, T Jackson and P Liu, Downscaling and validation of SMAP soil moisture in CONUS, International Geoscience and Remote Sensing Symposium, July 28 – August 2, 2019, Yokohama Japan
- (297) **Lakshmi, V.**, Observing terrestrial water cycle from space, 16<sup>th</sup> Annual Meeting, Asia Oceania Geoscience Society, Hydrological Sciences Distinguished Lecture, July 28 to August 2, 2019, Singapore
- (298) Smith, R., S Majumdar, L Oyler, J Butler and **V Lakshmi**, Estimating groundwater extraction with integrated satellite data sets and machine learning, Geological Society of America Annual Meeting, September 22-25, 2019, Phoenix, AZ
- (299) **Lakshmi, V.**, Observing terrestrial water cycle from space: Era of big data to solve global data problems, Geological Society of America Annual Meeting, *Invited*, September 22-25, 2019, Phoenix, AZ
- (300) Fang, B. and **V Lakshmi**, Downscaling SMAP soil moisture for CONUS, PECORA 21, October 6-11, Baltimore MD
- (301) **Lakshmi, V.**, H Le, J Bolten, I Mohammed and R Srinivasan, Adequacy of satellite derived precipitation in hydrological modeling in Vietnam, 2019 SWAT-SEA Workshop and Conference, October 21-26, 2019, Siem Reap, Cambodia



- (302) Mohammed, I., J Bolten, **V Lakshmi** and others, Improved hydrological modeling capabilities and decision support tools for Lower Mekong River Basin through integrated remote sensing and ground observations, 2019 SWAT-SEA Workshop and Conference, October 21-25, 2019, Siem Reap, Cambodia
- (303) Majumdar, S., L Oyler, R Smith, J Butler and **V Lakshmi**, A Machine Learning Approach for Estimating Groundwater Use with Satellite Data, Chapman Conference on "The Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales", October 21-25, Valencia Spain
- (304) Alshammari, A., D Brantley, C Knapp, J Knapp and **V Lakshmi**, Predicting the tensile storage due to carbon dioxide storage, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (305) Kim, H., Y Kwon, S Kumar and **V Lakshmi**, Assimilation of GPS soil moisture from CYGNSS into land surface models, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (306) Van der Steeg, S., H Xu, R Torres, **V Lakshmi**, J Sullivan and E Viparelli, Validation of a flood plain circulation model: The Congaree River and Floodplain, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (307) Le, M-H., **V Lakshmi**, T Vo, H Hoang and T Van, Assessment of hydrological processes in a polder of the Mekong Delta using SWAT+ model, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (308) Somani, S. and **V Lakshmi**, Global analysis comparing CHIRPS and rain gauge stations using WRI major watersheds of the world, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (309) Mondal, A. and **V Lakshmi**, Assessment of snow cover change on surface runoff due to climate change in the Himalayas, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (310) Zhang, R., S Kim, A Sharma and **V Lakshmi**, Identifying relative strength of three remotely sensed products using a model combination approach, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (311) Dandridge, C., **V Lakshmi** and D Kirschbaum, Evaluation of landslide susceptibility in the Lower Mekong using the LHASA model, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (312) Fang, B., **V Lakshmi**, R Bindlish and P Liu, Soil moisture downscaling at a global scale, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (313) Sutton, J., K Lanyon and **V Lakshmi**, Comparing precipitation from TRMM and PERSIANN during typhoons, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (314) Al-Barakat, R., **V Lakshmi** and M Le, Using time series meteorological and Normalized Difference Vegetation data for monitoring drought over Iraq, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (315) Shukla, A., C Ojha, R Garg, S Shukla, R Ramshankaran and **V Lakshmi**, Evaluating the hydrological response to urbanization in Upper Ganga Basin: A watershed modeling approach, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (316) Sadeghi, S., G Tootle, E Elliott, **V Lakshmi**, M Therell, J Kam and B Bearden, Atlantic Ocean sea surface temperature and Southeast United States streamflow variability, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA

- (317) Liu, P-W., R Bindlish, B Fang, **V Lakshmi**, P O'Neill and Z Yang, High spatio-temporal resolution soil moisture for agricultural applications in Western United States, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (318) Kundu, S, and **V Lakshmi**, Using two approaches to downscale satellite-based calculated actual evapotranspiration from MODIS using SEBAL, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA
- (319) Kansara, P., and **V Lakshmi**, Water quality modeling for the Ganga River Basin for pollutants and contaminants analysis using the SWAT model, American Geophysical Union Fall Meeting, December 9-13, 2019, San Francisco CA

### 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)
- (66) Environment and Watersheds group, World Bank, October 2017 (Harsh Rao)
- (67) United States Geological Survey, March 2018 (Jack Eggleston)
- (68) Earth System Science Interdisciplinary Center, University of Maryland, April 2018 (Smail)
- (69) US Nuclear Regulatory Commission, April 2018 (Tom Nicholson)
- (70) International Food Policy Research Institute, April 2019 (Liangzhi You)
- (71) School of Geology, Oklahoma State University, April 2019 (Jim Knapp)
- (72) East Carolina University, April 2019 (Stephen Moysey)
- (73) Chapman University, August 2019 (Tom Piechota)
- (74) Asia Disaster Preparedness Center, Bangkok, Thailand, October 2019 (Peernan Towashiporn)
- (75) South University of Science and Technology of China, Shenzhen, November 2019 (Haiyun Shi)
- (76) Chapman University, November 2019 (Thomas Piechota)
- (77) University of Hong Kong, November 2019 (Ji Chen)

## **COURSES AND TEACHING**

### **University of Virginia**

- (1) CE6500 Remote Sensing in Environmental Engineering Fall 2019
- (2) CE6000 Frontiers of Civil Engineering Spring 2020

### **University of South Carolina**

- (3) GEOL 101, Introduction to Geology, Spring 2002
- (4) GEOL 103, Introduction to Environmental Geology, Spring 2005, Spring 2006, Fall 2007, Spring 2009, Spring 2010, Spring 2012, Spring 2013, Spring 2015, Spring 2017
- (5) 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
- (6) GEOL 570, Environmental Hydrogeology, Fall 1999, Fall 2001, Fall 2003
- (7) GEOL 571, Soil Hydrology/Land Surface Hydrology, Fall 2002, Fall 2004
- (8) GEOL 770, Advanced Hydrogeology and Surface Processes, Fall 2004, Spring 2011
- (9) GEOL 799, Directed Individual Studies
- (10) GEOL 861, Remote Sensing of Hydrological Variables and Processes, Fall 2005, Spring 2008, Spring 2014
- (11) 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

**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
- (9) Good reasons to protect the wetlands, June 2006
- (10) In innovation, US still leads, December 2006
- (11) Growing consensus on climate change, February 2007
- (12) Increasingly, we wait for rain, July 2007
- (13) Its more than just melting ice, October 2007
- (14) Green all not created equal, April 2008
- (15) Truth about ethanol, July 2008
- (16) Hurricanes: Clash of climate and culture, September 2008
- (17) Common ground possible on environment November 2008
- (18) Climate bill can move nation forward, July 2009
- (19) Water is central to climate change debate, October 2009
- (20) Hope after Copenhagen, December 2009
- (21) Why is it raining so much? February 2010
- (22) The way out of the Gulf, June 2010
- (23) India's incredible challenge, South Carolina's Opportunity, December 2010
- (24) Japan long road to recovery, March 2011
- (25) Earth day South Carolina Beautiful places April 2011
- (26) We need to rehabilitate Rocky Branch, January 2012
- (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
- (38) A geologist prepares for a hurricane and explains what is happening, September 2017