

EFI FOUFOULA-GEORGIU

UCI Distinguished Professor
Department of Civil and Environmental Engineering
Henry Samueli School of Engineering
University of California, Irvine
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EDUCATION

- May 1985 **University of Florida**
Doctor of Philosophy in Environmental Engineering
- Dec. 1982 **University of Florida**
Master of Science in Environmental Engineering
- July 1979 **National Technical University of Athens, Greece**
Diploma in Civil Engineering

POSITIONS HELD

- 2016 - DISTINGUISHED PROFESSOR, Department of Civil and Environmental Engineering ,
University of California, Irvine
- 2008 - 2016 JOSEPH T. AND ROSE S. ENDOWED CHAIR, Department of Civil Engineering,
University of Minnesota
- 2002 - 2016 MCKNIGHT DISTINGUISHED PROFESSOR, University of Minnesota
- 2008 - 2013 DIRECTOR, National Center for Earth-surface Dynamics
University of Minnesota, Minneapolis
- 2002 - 2008 Co-DIRECTOR, National Center for Earth-surface Dynamics
University of Minnesota, Minneapolis
- 1999 - 2003 DIRECTOR, St. Anthony Falls Laboratory
University of Minnesota, Minneapolis
- 1996 - 2016 PROFESSOR, Department of Civil Engineering
St. Anthony Falls Laboratory, University of Minnesota, Minneapolis
- 1989 - 1996 ASSOCIATE PROFESSOR, Department of Civil Engineering
St. Anthony Falls Laboratory, University of Minnesota, Minneapolis
- 1986 - 1989 ASSISTANT PROFESSOR, Department of Civil & Construction Engineering
Iowa State University, Ames
- 1985 - 1986 RESEARCH ASSOCIATE, Department of Civil and Mineral Engineering
St. Anthony Falls Hydraulic Laboratory, University of Minnesota, Minneapolis
- 1984 - 1985 GRADUATE RESEARCH ASSISTANT, Department of Civil Engineering
University of Washington, Seattle
- 1980 - 1983 GRADUATE RESEARCH ASSISTANT, Dept. of Environmental Engineering
University of Florida, Gainesville
- 1979 - 1980 ENGINEER, River Management and Urban Planning Division
Ministry of Public Works, Athens, Greece

TEACHING EXPERIENCE

Engineering Hydrology and Hydraulics (senior level)
Surface Water Hydrology (graduate level)

Stochastic Hydrology (graduate level)
Water Resources Systems (graduate level)
Hydrology and Hydrologic Design (senior level)
Advanced Topics in Hydrology (graduate level)

HONORS AND AWARDS

2017 Hydrologic Sciences Medal, American Meteorological Society
2017 Hydrology Days Award
2016 Robert E. Horton Lecturer in Hydrology, American Meteorological Society
2014 President, Hydrology section, American Geophysical Union
2012 President-elect, Hydrology Section, American Geophysical Union
2012 Presidential Appointee to the Nuclear Waste Technical Review Board – NWTRB
2012 Kiesel Distinguished Lecturer, University of Arizona
2008 Joseph T. and Rose S. Ling Chair in Environmental Engineering
2008 Borland Distinguished Lecturer, Hydrology Days
2007 Hydrologic Sciences Award, American Geophysical Union
2007 Honorary Professor, Sichuan University, China
2007 Moore Distinguished Lecturer, University of Virginia
2007 Elected Chair, Board of Directors, Consortium of Universities for the Advancement of Hydrologic Sciences
2007 Elected Trustee, University Corporation for Atmospheric Research
2005 Fellow, American Meteorological Society
2003 Elected Member, European Academy of Sciences
2002 Distinguished McKnight University Professor, University of Minnesota
2002 John Dalton Medal, European Geophysical Society
1999 Fellow, American Geophysical Union
1998 Fellow, Minnesota Supercomputer Institute
1995 Bush Sabbatical Fellow, University of Minnesota
1989-1994 Presidential Young Investigator Award, National Science Foundation
1989 Editor's Citation for Excellence in Refereeing, Water Resources Research
1989 Certificate of Commendation for Contributions in Water Resources National Association of Water Institute Directors and National Association of State Universities
1988 Travel award from NATO (to present two lectures at the NATO Advanced Study Institute on Recent Advances in the Modelling of Hydrological Systems, Sintra, Portugal)
1986 National Science Foundation Engineering Initiation Award
1974-1976 Outstanding Student Fellowship, National Technical University of Athens, Greece
1973 Second Honor, Nationwide Competition in Mathematics, Hellenic Mathematical Society

PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

• Key Appointments and elected positions

- NRC Decadal Survey for Earth Science and Applications from Space -- Panel on Global Hydrological Cycle and Water Resources, 2016-2017
- NRC (National Research Council)– Board of Space Studies' Committee on Earth Science and Applications from Space (CESAS), 2012- 2017; re-appointed second term: 2017-2019
- Elected member, AGU Council Leadership Team, 2015-2018
- NRC (National Research Council) – Mapping Sciences Committee, Board of Earth Sciences and Resources, National Academies of Sciences, 2013-2017

- Board member, NWTRB, Nuclear Waste Technical Review Board (reviews DOE’s activities on NW disposal and reports to Congress and Secretary of Energy), 2012-2018
- Stockholm Water Prize (SWP) Nominating Committee, Swedish Academy of Sciences, 2012-2018
- NASA Science Advisory Council -- Earth Sciences Subcommittee, 2011-2018
- NOAA Science Advisory Council -- Ecosystem Science and Management Working Group, 2011-2013
- NSF, Advisory Council for Geosciences Directorate, 2008-2011
- NRC Committee on “Opportunities and Challenges in Hydrologic Sciences”, 2010-2012
- WSTB (Water Science and Technology Board), NRC, National Academies, appointed member, 2000-2004
- NRC Committee on “Progress and Priorities on US Weather Research and Research to Operations Activities”, 2009-2010
- NRC Committee on “Assessment of the NWS Advanced Hydrologic Prediction System”, National Research Council, 2003-2005
- NRC, Committee on “Risk-based Analysis Methods for Flood Damage Reduction Studies,” National Research Council, 1998-2000
- USGCRP (U.S. Global Change Research Program) Water Cycle Initiative Study Group (1999-2000)
- CUAHSI Chair-elect, Board of Directors (Consortium of Universities for the Advancement of Hydrologic Sciences), 2007-2009
- UCAR Elected member of the Board of Trustees, University Corporation for Atmospheric Research (UCAR), 2007-2010
- Helmholtz Research Programme on “Sustainable Water Resources Management and Perspective towards a Water Science Alliance”, Helmholtz Center for Environmental Research, Leipzig, Germany, Advisory Review Committee, 2009
- Argentinean Water Resources Advisory Board, Minister for Planning and Agriculture, 2010-2013
- EU (European Union)– Framework 7 Environmental Infrastructure and Collaboratories, Advisory Panel, Brussels, 2008

• **National/International Advisory Boards and Committees**

- Faculty Advisory Council, Institute on the Environment, Univ. of Minnesota, 2016 -
- Advisory Committee, Community Surface Dynamics Modeling Systems (CSDMS), 2016 –
- Advisory Committee, EBSD Directory, Pacific Northwest National Laboratory, 2016-
- Search Committee, Executive Director of CUAHSI, 2015-2016
- NCAR, Member Nominating Committee, 2015-
- AMS, Hydrology Research Awards (HRA) Committee, 2015-
- Chair, AGU Fellows Committee - Hydrology section, 2012-2014
- Advisory Board, NSF Center, Sustainable Environment – Actionable Data (SEAD), 2012-2016
- Scientific Council, CIMA Research Foundation, Savona, Italy, 2012-2016
- Review Editor, Third National Climate Assessment Report, Water Chapter, 2013
- Chair, Search committee, Editor-in-Chief of Water Resources Research, AGU, 2012
- Member, AGU Publications Committee, 2010-2012
- Advisory Board, EU Project DRIHM (Distributed Infrastructure for Hydrometeorology), 2011-
- Advisory Board, NSF Project NGCHC (Northern Gulf Coastal Hazards Collaboratory), 2011-
- Advisory Board, NSF Project SEAD (Sustainable Environment-Actionable Data), 2011-
- APLU (Association of Public and Land-grant Universities), Board of Atmospheric Sciences and Climate (BOAC), Executive Committee, 2009-
- NCAR, Science Advisory Board, Research Applications Laboratory, (2005-2012)
- NASA/PMM, Precipitation Science Team (2007-present)
- Science Museum of Minnesota Water Planet Program, Science Advisory Board (2005-present)

- Chair, Horton Medal Committee, AGU (2008-2010)
- Panelist, Water section, Midwest Climate Change Assessment Forum, Chicago, 2010
- EGU, European Geophysical Union, Member, Scientific Committee, Plinius Conference (2007)
- University of Illinois, Urbana, Scientific Advisory Board, Hydrologic Synthesis Activities (2007-2011)
- NSF, Proposal Evaluation Panel, Cyberinfrastructure for Environmental Observatories (2006)
- AGU Fellows Nomination Committee, Hydrology Section (2005-2010)
- CUAHSI, Member, Executive Committee (2003-2010)
- Chair, CUAHSI, Board of Directors (2003-2010)
- UCAR/URC Liaison with the Research Applications Laboratory of NCAR (2003-2006)
- CUAHSI, Search Committee for Executive Director (2003)
- UCAR/NCAR, University Relations Committee (URC) (2000-2007)
- U.S. Weather Research Program Science Steering Committee (1999-2003)
- AGU, Fellow Nomination Committee (1999-2002)
- University of Western Australia, Review Committee of Center for Water Research (CWR) (1999)
- NASA, Tropical Rainfall Measuring Mission (TRMM) Science Team (1998-present)
- European Commission, Proposal Evaluation Panel, Water and Climate Programme (1997)
- NOAA, Proposal Evaluation Panel, GCIP (1995, 1997)
- Global Energy and Water Cycle Experiment, Chair, Precipitation Principal Research Area (1994)
- NSF, Proposal Review Panel, Hydrologic Sciences (1993-1996)
- AGU, Chair, Precipitation Committee, Hydrology Section (1992-1996)

• **Editorial Duties**

- Editorial Board, Geography Compass (2006-2012)
- Guest Editor, Water Resources Research (2005)
- Editorial Board, Nordic Hydrology (2003-present)
- Editorial Board, Advances in Water Resources (2000-2012)
- Associate Editor, Hydrologic and Earth Systems Science, European Geophysical Society (1997-2010)
- Associate Editor, Journal of Geophysical Research-Atmospheres, AGU (1997-2005)
- Editor, Journal of Hydrometeorology, AMS (1999-2001)
- Associate Editor, Water Resources Research (1992-1995)

• **Initiatives/Meetings/Conference Organization**

- Founder of the “Sustainable Deltas 2015” initiative endorsed by ICSU (International Council of Scientific Unions) to be launched internationally
- Founder and co-organizer, NCED Summer Institute on Earth-surface Dynamics (SIEDS), 2009 -- annually
- Founder and co-organizer, Working group on “Stochastic Transport and Emergent Scaling in Earth-surface Processes” (STRESS), Lake Tahoe, 2007, 2009, 2011, 2013
- Organizer, Special session on “Predictability of Extreme Hydrometeorological Events”, EGU meeting, Vienna, April, 2009
- Organizer, Special session on “Stochastic Transport and Emergent Scaling on Earth’s Surface”, EGU meeting, Vienna, April, 2009
- Organizer, Special session on “Rainfall Downscaling”, EGU Plinius Conference, Cyprus, July 2008
- Organizer, AGU Fall meeting, Special session on “Stochastic Transport and Emergent Scaling in Earth-surface Processes”, Dec. 2008

- Organizer, Special session on “Precipitation Downscaling: Recent advances and hydrogeomorphic impacts”, EGU Plinius Conference, Lake Como, Italy (2007)
- Organizer, Special session on “Stochastic Geomorphology: The role of variability and uncertainty in prediction”, American Geophysical Union Spring Meeting, Baltimore (2006)
- Organizer, Special session on “Geomorphological organization and its physical basis,” American Geophysical Union Fall Meeting, San Francisco (2003)
- Organizer, “Stream Restoration Workshop”, NCED-NAS sponsored workshop to define challenges on the science and practice of stream restoration, Minneapolis (2003)
- Organizer, 5th International Conference on Precipitation, Elounda, Crete, Greece (1995)
- Organizer, Special session on “Applications of Wavelet Transforms in Geophysics,” American Geophysical Union Spring Meeting, Baltimore (1993)
- Organizer, Special session on “Self-Similarity in Hydrologic Processes: Identification, Estimation, and Use in Modeling/Measurement/Prediction” American Geophysical Union Fall Meeting, San Francisco (1991)
- Organizer, Conference on “Operational Precipitation Estimation and Prediction”, American Meteorological Society Annual Meeting, Anaheim (1990).
- Organizer, Special session on “Multisensor observations and space-time rainfall modeling,” American Geophysical Union Spring Meeting, Baltimore (1989)
- Organizer, Special session on “Extreme rainfall and hydrologic design,” American Geophysical Union Fall Meeting, San Francisco (1989)

• **University of Minnesota Committees**

- International Research Task Force, VP’s Office, University of Minnesota (2014-2016)
- Provost’s Grand Challenges Research Strategy Team (2015-2016)
- Search Committee, Director, Institute on the Environment (2014-2015)
- Institute on the Environment, Advisory Council (2014-)
- Search Committee, Gibson chair, Dept. of Earth Sciences (2014-2015)
- Search Committee, Transportation faculty, Civil Engineering (2014)
- Science Advisory Committee, VP’s Office (2007- 2010)
- Distinguished McKnight University Professors, Selection Committee (2007-2012)
- Chair, Search committee for Founding Director of the Institute on the Environment (2008)
- Provost’s Advisory Committee on the new Institute on the Environment, University of Minnesota (2006)
- Science and Scholarly Advisory Board, University of Minnesota (2006 - 2010)
- Search Committee for Department Chair, Department of Geology and Geophysics (2005)
- Environmental Sciences and Engineering Initiative, Strategic Planning Committee, Institute of Technology, University of Minnesota (2005)
- Search Committee for a faculty hire, Department of Ecology and Evolutionary Behavior, University of Minnesota (2003)
- Promotion and Tenure Committee, Institute of Technology, University of Minnesota (2002-2005)
- Chair, Search committee for 3 new faculty hires, Department of Civil Engineering, University of Minnesota (1999)
- Chair, Research Fellow Selection Committee, Minnesota Supercomputer Institute (MSI) (1998-2001)
- Director of Graduate Studies, Department of Civil Engineering, University of Minnesota (1997-1998)

Journal Reviewer: Water Resources Research, Journal of Hydrology, Journal of Applied Meteorology, International Journal of Mathematical Geology, ASCE Journal of Hydraulic Engineering, ASCE Journal of Water Resources Management and Planning, ASCE Journal of Hydrologic Engineering, Canadian

Meteorological and Oceanographical Society Journal, Journal of Stochastic Hydrology and Hydraulics, Hydrology and Earth System Sciences, Journal of Geophysical Research, Journal of Hydrometeorology, Journal of Climate, Nordic Hydrology, Hydrologic Processes, Physical Review E, Geophysical Review Letters, Reviews of Geophysics, Journal of Geophysical Research-Atmospheres, Journal of Geophysical Research-Earth Surface.

Proposal reviewer: National Science Foundation, European Union, U. S. Geological Survey, National Aeronautics and Space Administration, Environmental Protection Agency, National Oceanic and Atmospheric Administration, Swiss National Science Foundation, Swedish National Science Foundation, Australian Science Foundation, National Environmental Research Council, UK

PROFESSIONAL SOCIETY MEMBERSHIP

American Geophysical Union
European Geosciences Union
American Society of Civil Engineers
American Water Resources Association
American Meteorological Society
Institute of Mathematical Statistics
Society of Women Engineers

COLLABORATORS

K. Droegemeier (Meteorology, U of Oklahoma), T. Georgiou (EE, U of Minnesota), P. Guttorp (Statistics, U of Washington), D. Koutsoyiannis (Hydrology, NTUA, Greece), G. Parker (Sediment transport, U of Minnesota), C. Paola (Geomorphology, U of Minnesota), J. Stedinger (Statistical Hydrology, Cornell), E. Todini and M. Franchini (Hydrology, U of Bologna), F. Porté-Agel (Atmospheric Boundary Layer, U of Minnesota), C. Kummerow (Atmospheric Sciences, Colorado State University), S. Yuter (Meteorology, U of Washington), I. Zaliapin (Mathematics, U of Nevada, Reno), W. Dietrich (Geomorphology, U of California, Berkeley), A. Arneodo (Turbulence, Ecole Normale Supérieure de Lyon, France), S. Roux (Turbulence, Ecole Normale Supérieure de Lyon, France), C. Stark (Mathematical Geomorphology, University of Columbia), M. Power (Ecology, U of California, Berkeley), M. Ghil (Atmospheric Dynamics, Ecole Normale Supérieure, Paris, France), M. Meerschaert (Mathematics, Michigan State University), G. Sapiro (EE, Duke University), M. Guala (University of Minnesota), P. Belmont (Utah State University)

GRADUATE ADVISORS: Dennis P. Lettenmaier (U of Washington), Wayne C. Huber (U of Florida)

GRADUATE and POSTGRADUATE ADVISEES:

Former Advisees

PhD: Praveen Kumar (1993), Sanja Perica (1995), Alin Cârsteanu (1997), Venu Venugopal (1999), Deborah Nykanen (2000), Boyko Dodov (2003), Sukanta Basu (2004), Chandana Gangodagamage (2009), Paola Passalacqua (2009), Arving Singh (2011), Vamsi Ganti (2012), Mohammad Ebtehaj (2013), Jon Czuba (2016), Jon Schwenk (2016), Mohammad Danesh-Yazdi (2017) – *please see my web site for their current positions (<http://efi.eng.uci.edu>)*

M.S.: Larry Wilson (1989), Praveen Kumar (1989), Geoff Griffin (1991), Keith Helmlinger (1992), Igor Jankovic (1992), Thomas Rasmussen (1992), Venu Venugopal (1995), Deborah Nykanen (1997), Jesus Zepeda-Arce (2000), B. Tustison (2001), Jamie

Smedsmo (2004), Rohit Gupta (2004), Lisa Tilman (2005), Paola Passalacqua (2005, co-advised with Fernando Porté-Agel), Nikos Theodoratos (2006), Birdoha Basu (2011)

Research Associates: Daniel Harris, Victor Sapozhnikov, Shuxia Zhang, Venu Venugopal, Boyko Dodov, Sukanta Basu, Rohan Shreshtha, Bruno Lashermes, Ion Iorgulescu, Kurt Fienberg, Arvind Singh, Stefano Zanardo, Diego Ponce de Leon Barido, Stefano Zanardo

Present Advisees

PhD: Zeinab Takbiri, Brandon Sloan, Antonios Mamalakis

Research Associates: Anthony Longjas, Amy Hansen, Alejandro Tejedor, Zi Wu, Simon Papalexiou, Jon Schwenk, Clement Guilloteau

Foreign PhD Student External Advisor/Examiner

Davide Ceresetti, University of Grenoble (PhD, 2005)

Athansios Paschalis, ETH (PhD, 2013)

Niannian Fan, Tsinghua University (2014)

THESES OF ADVISED GRADUATE STUDENTS:

Kumar, Praveen. Master of Science, 1989 April, “*A Stochastic Simulation Model for Space-time Description of Rainfall*” Adv. E. Foufoula-Georgiou, Iowa State University, Civil Engineering.

Griffin, Geoffrey. Master of Science, 1991 August, “*Reservoir Operation Optimization: A case Study for the Lake Zumbro Hydropower Facility*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Helmlinger, Keith. MS, 1992 November, “*Estimation of Morphometric and Scaling Properties of River Networks from Digital Elevation Data*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Rasmussen, Thomas. Master of Science, 1992 May, “*Analysis of Atrazene Levels in the Lower Missouri River*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Jankovic, Igor. Master of Science, 1993 May, “*Numerical Simulation of Groundwater Recharge: Spatial and Temporal Analysis*”, Adv. R. Andricevic, E. Foufoula-Georgiou and R. Barnes, University of Minnesota, Civil Engineering.

Kumar, Praveen. PhD, 1993 April, “*Multiscale Study of Rainfall Fields Via Wavelet Transforms for Identifying Scaling Characteristics*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Venugopal, Vuruptur. Master of Science, 1995 November, “*Time-Frequency-Scale Analysis of Temporal Rainfall*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Carsteanu, Alin-Andrei. PhD, 1997 December, “*Space-Time Rainfall Modeling: Considerations of Scaling and Dynamics*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Nykanen, Deborah. MS, 1997 June, “*Study of the Morphology and Spatial Scaling of Braided Rivers Using Synthetic Aperture Radar Imagery*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Venugopal, Vuruptur. PhD, 1999 January, “*Spatio-Temporal Organization and Space-Time Downscaling of Precipitation Fields*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Zepeda-Arce, Jesus. Masters, 1999 February, “*Multiscale Statistical Measures for Assessment of Quantitative*

Precipitation Forecasts”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering;

Nykanen, Deborah K. PhD, 2000 November, “*Space-Time Variability of Rainfall and Soil Moisture in Coupled Land-Atmosphere Modeling: Issues of Scale and Effect on Predicted Water and Energy Fluxes*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Tustison, Benjamin T. MS, 2001 May, “*Multiscale Techniques for the Verification of Quantitative Precipitation Forecasts*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering;

Dodov, Boyko A. PhD, 2003 August, “*Analysis of the Effects of Channel Morphometry and Network Topology on the Nonlinearity of Hydrologic Response as a Function of Scale*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Basu, Sukanta. PhD, 2004 December, “*Large-Eddy Simulation of Stably Stratified Atmospheric Boundary Layer Turbulence: A Scale-Dependent Dynamic Modeling Approach*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Gupta, Rohit. MS, 2004 June. “*Parametric and Non-Parametric Approaches for Validation and Blending of Multi-Sensor Precipitation Estimates*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Smedsmo, Jamie L. MS, 2004 June, “*A Statistical View of the Vertical Structure of Modeled and Observed Clouds: Insights for QPF Verification and Remote Sensing of Precipitation*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Passalacqua, Paola. Master's 2005 December, “*Scale Dependence and Subgrid-Scale Closure in Numerical Simulations of Landscape Evolution*”, Adv. F. Porte-Agel, E. Foufoula-Georgiou and C. Paola, University of Minnesota, Civil Engineering; http://home.safl.umn.edu/bmackay/pub/Theses/Passalacqua_Paola_MSc_2007.pdf

Tilman, Elizabeth A. MS, 2005 May, “*Scaling Relationships for the Depth and Width of Channels in an Experimental Braided River*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering; http://home.safl.umn.edu/bmackay/pub/Theses/Tilman_Lisa_MS_2005.pdf

Theodoratos, Nikos. MS, 2006 June, “*The Effect of Channel-Floodplain Interactions on the Scaling of Floods*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Gangodagamage, Chandana. PhD, 2009 September, “*Scale Invariance and Scaling Breaks - New Metrics for Inferring Process Signature from High Resolution LiDAR Topography*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering; <http://purl.umn.edu/57133>

Paola Passalacqua. PhD, 2009, “*On the geometric and statistical signature of landscape forming processes,*” Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Singh, Arvind. PhD, 2011 December, “*Statistical Mechanics of Sediment Transport*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering; http://library.safl.umn.edu/docs/theses/Singh_Arvind_PhD_2011.pdf; <http://purl.umn.edu/120031>

Ganti, Vamsi. PhD, 2012, “*Non-local Theories of Geomorphic Transport: From Hillslopes to Rivers to Deltas to the Stratigraphic Record*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Mohammad Ardeshir Ebtehaj. PhD, 2013, “*Hydrometeorological Inverse Problems via Sparse Regularization: Advanced Frameworks for Rainfall Downscaling, Fusion, and Assimilation*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering.

Jon Czuba, PhD, 2016, “*A network-based framework for hydro-geomorphic modeling and decision support with application to space-time sediment dynamics, identifying vulnerabilities, and hotspots of change*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering <http://conservancy.umn.edu/handle/11299/181713>

Jon Schwenk, PhD, 2016, “*Meandering rivers: interpreting dynamics from planform geometry and the secret lives of migrating meanders*”, Adv. E. Foufoula-Georgiou, University of Minnesota, Civil Engineering, <http://conservancy.umn.edu/handle/11299/183333>

SPONSORED RESEARCH

NSF–Presidential Young Investigator:	1990-1995	\$500,000
NSF–Critical Systems and Engineering Program:	1988-1989	\$100,000
NSF–Hydrology:	1992-1994	\$150,000
NASA–TRMM Program	1992-1995	\$230,000
NASA–Global Change Fellowship (P. Kumar, S. Perica, V. Venugopal):	1992-1999	\$210,000 (3 fellowships)
NOAA–Office of Global Programs:	1994-1997	\$220,000
NSF–Hydrology Program:	1996-1999	\$200,000
NASA–Hydrology Program:	1996-1999	\$290,000
NOAA/NASA–Joint Program on GCIP:	1997-2000	\$330,000
NSF–U.S. Weather Research Program:	1997-2000	\$330,000
NASA–Tropical Rainfall Measuring Mission:	1998-2001	\$300,000
NASA–Land Surface Hydrology:	2001-2003	\$360,000
NASA–Land Surface Hydrology (with F. Porté-Agel):	2001-2005	\$350,000
NSF–Mesoscale Meteorology Program:	2001-2004	\$286,000
NSF–Hydrology Program:	2002-2006	\$262,000
NASA–Land Surface Hydrology:	2002-2005	\$232,700
NASA–Global Precipitation Mission:	2003-2006	\$300,000
NSF–Science and Technology Center (NCED)	2002-2012	\$40 million (20 PIs)
NSF–Hydrology Program (with F. Porté-Agel):	2005-2008	\$300,000
NASA – Land Surface Hydrology (with F. Porté-Agel):	2005-2008	\$320,000
NASA – Global Precipitation Mission:	2006-2009	\$340,000
NSF – Cyber Enabled Discovery and Innovation	2008-2011	\$300,000
NSF – Geomorphology and Land-use Dynamics	2008-2011	\$230,000
NSF – Mathematics in Geosciences (Geomorphic Transport Laws):	2008-2011	\$150,000
NASA – GPM data fusion with emphasis on extremes	2009-2012	\$280,000
Institute on the Environment – U of Minnesota	2011-2013	\$200,000
Google.org	2011-2013	\$200,000
NSF – Mathematics in Geosciences (Environmental Transport on river networks):	2009-2013	\$230,000
NASA Climate Change Education Partnership (co-PI):	2011-2013	\$420,000
NASA -- Global Change Fellowship (M. Ebtehaj)	2012-2015	\$150,000
NASA – Towards the next generation of multi-sensor multi-scale precipitation fusion: a variational approach in the wavelet domain (GPM)	2013-2016	\$415,000
NSF – Water Sustainability and Climate: Climate and human dynamics as amplifiers of natural change: a framework for vulnerability assessment and mitigation planning (lead PI)	2012-2017	\$4.3 M (\$2.3 U of M)
NSF -- National Center for Earth Surface Dynamics		

NCED 2 (co-PI)	2012-2017	\$3.5 M
NSF – Linked Institutions for Future Earth (LIFE)	2012-2017	\$800,000
Belmont Forum – DELTAS (lead PI; 7 countries)	2013-2017	\$2.0 M (\$750K US part)
NASA – Global Precipitation Program	2016-2019	\$350,000

REFEREED JOURNAL PUBLICATIONS

(Italics indicates student or post-doc)

1. *Schwenk J.*, and **E. Foufoula-Georgiou**, Are process nonlinearities encoded in meandering river planform morphology?, *JGR Earth Surface*, 2017.
2. *Danesh-Yazdi, M., A. Tejedor*, and **E. Foufoula-Georgiou**, Self-Dissimilar Landscapes: Revealing the Signature of Geologic Constraints on Landscape Dissection via Topologic and Multi-Scale Analysis, to appear, 2017.
3. Hajra R., S. Szabo, Z. Tessler, T. Ghosh, Z. Matthews, and **E. Foufoula-Georgiou**, Unravelling the association between the impact of natural hazards and household poverty: evidence from the Indian Sundarban delta, *Sustainability Science*, doi: 10.1007/s11625-016-0420-2, 2017.
4. *Schwenk J.*, A. Khandelwal, M. Fratkin, V. Kumar, and **E. Foufoula-Georgiou**, High spatio-temporal resolution of river planform dynamics from Landsat: the RivMAP toolbox and results from the Ucayali River, *Earth and Space Science*, 2017.
5. *Schwenk J.*, and **E. Foufoula-Georgiou**, Meander cutoffs nonlocally accelerate upstream and downstream migration and channel widening, *Geophysical Research Letters*, 43, 12,437-12,445, doi:10.1002/2016GL071670, 2016.
6. Szabo S., R.J. Nicholls, B. Neumann, F.G. Renaud, Z. Matthews, Z. Sebesvari, A. AghaKouchak, R. Bales, C.W. Ruktanonchai, J. Kloos, **E. Foufoula-Georgiou**, P. Wester, M. New, J. Rhyner, C. Hutton, Making SDGs Work for Climate Change Hotspots, *Environment: Science And Policy For Sustainable Development*, 58:6, 24-33, 2016.
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INVITED PRESENTATIONS (Selected 2013 invited lectures)

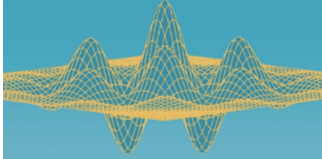
There are over 200 invited presentations in meetings, special guest lectures, plenaries, and University colloquia.

In 2013 invited lectures included:

1. “Resilience under accelerated change”, NSF meeting on Water, Wash. DC, March 2013
2. “Sparse representation for rainfall estimation from space”, NASA, Precipitation Measuring Mission Research Meeting, March 2013.
3. “A vision for an International Year of Deltas”, International Council of Scientific Unions (ICSU), Meeting of the Executive Council, Paris, April, 2013 (gave the talk via Skype)
4. “Non-local transport models for geomorphology”, STRESS (Stochastic Transport and Emergent Scaling on the Earth’s surface) meeting, Lake Tahoe, April, 2013
5. “Precipitation estimation and data assimilation using non-smooth l1-regularization methodologies”, EGU meeting, Vienna, April, 2013
6. “River network frameworks for flux transport in river basins”, EGU meeting, Vienna, April 2013
7. “Precipitation estimation from space using l1-regularization”, Digital Technology Center, University of Minnesota, April 2013.
8. “From precipitation to landforms: modeling across scales”, AGU meeting, Cancun, May, 2013
9. “New directions in rainfall downscaling, multi-sensor data fusion, and data assimilation”, 15th International Conference on Precipitation, Wageningen, Netherlands, July, 2013 (gave the talk via skype)
10. “Deltas in times of environmental change” – keynote lecture, International Association for Hydrologic Sciences (IAHS) meeting, Gottenburg, Netherlands, July 2013.
11. “Sparse regularization for geophysical estimation”, SIAM conference, San Diego, July, 2013
12. “New frameworks for resilience studies in geomorphology”, NSF workshop on Future Landscapes, Tuscon, Arizona, Sept. 2013
13. “A framework for studying resilience and change in river network processes”, Duke University, October, 2013
14. “Landforms under climatic and human perturbations: the need for simple modeling frameworks”, Facets of Uncertainty conference, Kos, Greece, Nov. 2013
15. “Resilience under accelerated change – how to study it?”, University of Southampton, UK., Nov. 2013
16. “River basin processes and new frameworks to study vulnerability to change”, Univ. of Saskatoon, Center for Water Security, Nov. 2013
17. “A vision for an international effort on Deltas”, AGU meeting, San Francisco, Dec., 2013
18. “Topographic signature of change and spatially heterogeneous landscapes”, AGU meeting, San Francisco, Dec., 2013
19. “Resilience frameworks for eco-hydrological processes using concepts of dynamic connectivity”, Keynote presentation, Berkeley Gilbert Club meeting, Berkeley, Dec., 2013.

•WAVELET ANALYSIS AND ITS•
APPLICATIONS VOLUME 4

WAVELETS IN GEOPHYSICS



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