EFI FOUFOULA-GEORGIOU

UCI Distinguished Professor
Departments of Civil and Environmental Engineering and Earth System Science
Associate Dean for Research and Innovation, Samueli School of Engineering
University of California, Irvine
& Professor Emerita, Department of Civil Engineering, University of Minnesota
5400 Engineering Hall, Irvine, CA 92697-2175
E-mail: efi@uci.edu; Cell: (651) 470-2038; Website: http://efi.eng.uci.edu

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
2016-	Professor Emerita, University of Minnesota
2012 -	Presidential Appointee to the Nuclear Waste Technical Review Board (NWTRB), Special Government Employee
2008 - 2016	Joseph T. and Rose S. Ling Endowed Chair, Department of Civil Engineering, University of Minnesota, Minneapolis
2002 - 2016	McKnight Distinguished Professor, University of Minnesota
2008 - 2013	Director, National Center for Earth-surface Dynamics, University of Minnesota
1999 - 2003	Director, St. Anthony Falls Laboratory, University of Minnesota
1996 - 2016	Professor, Department of Civil Engineering, University of Minnesota
1989 - 1996	Associate Professor, Department of Civil Engineering, University of Minnesota
1986 - 1989	Assistant Professor, Department of Civil & Construction Engineering, Iowa State University, Ames
1985 - 1986	Research Associate, St. Anthony Falls Hydraulic Laboratory, University of Minnesota
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

HONORS AND AWARDS

2018	Elected Member of the National Academy of Engineering (NAE)
2018	Elected Fellow, American Association for the Advancement of Science (AAAS)
2017	Hydrologic Sciences Medal, American Meteorological Society (AMS)
2017	Hydrology Days Award
2016	Robert E. Horton Lecturer in Hydrology, American Meteorological Society (AMS)
2015	NASA Group Achievement Award – GPM Post-Launch Team
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, UMN
2008	Borland Distinguished Lecturer, Hydrology Days
2007	Hydrologic Sciences Award, American Geophysical Union (AGU)
2007	Honorary Professor, Sichuan University, China
2007	Moore Distinguished Lecturer, University of Virginia
2005	Fellow, American Meteorological Society (AMS)

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	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	Outstanding Student Fellowship, National Technical University of Athens, Greece
1973	Second Honor, Nationwide Competition in Mathematics, Hellenic Mathematical Society

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); Multi-scale Analysis of Geophysical and Engineered Systems (graduate level)

PROFESSIONAL SOCIETY MEMBERSHIP

American Geophysical Union (AGU); European Geosciences Union (EGU); American Meteorological Society (AMS); American Association for the Advancement of Sciences (AAAS); American Society of Civil Engineers (ASCE); American Water Resources Association (AWRA); Institute of Mathematical Statistics (IMS); Society of Women Engineers (SWE)

PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

Elected positions

- President, Hydrology section, American Geophysical Union, 2014-2016
- Elected member, AGU Council Leadership Team, 2015-2017
- Elected Chair, Board of Directors, Consortium of Universities for the Advancement of Hydrologic Sciences (CUAHSI), 2007-2009
- Elected member, Board of Trustees, University Corporation for Atmospheric Research (UCAR), 2007-2010

National Academies/ National Research Council Committees

- U.S National Committee for the International Union of Geodesy and Geophysics (IUGG), 2016-
- NRC Decadal Survey for Earth Science and Applications from Space -- Panel on Global Hydrological Cycle and Water Resources, 2016-2017
- NRC Committee on Earth Science and Applications from Space (CESAS), 2012-2016; re-appointed: 2017-2018
- NRC Mapping Sciences Committee, Board of Earth Sciences and Resources, National Academies of Sciences, 2013-2017
- 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

Service on National/International Advisory Boards and Committees

- Community Advisory Committee for Water Prediction (CAC-WP), 2018-
- Member, NSF Panel on CAREER awards, 2017
- AMS, vice chair of Hydrologic Sciences Medal, 2017-
- AMS, Suomi Award Committee, 2018-
- Advisory Committee, Annual Review of Earth and Planetary Sciences, 2017
- Steering Committee, Community Surface Dynamics Modeling Systems (CSDMS), 2016 –
- Advisory Committee, Earth and Biological Sciences (EBSD) Directory, Pacific Northwest National Laboratory (PNNL), 2016-
- Faculty Advisory Council, Institute on the Environment, Univ. of Minnesota, 2016 -
- AMS, Hydrology Research Awards (HRA) Committee, 2015-
- Member, search committee for CUAHSI president, 2016
- Stockholm Water Prize (SWP) Nominating Committee, Swedish Academy of Sciences, 2012-2018
- NASA Science Advisory Council -- Earth Sciences Subcommittee, 2011-2018
- Search Committee, Executive Director of CUAHSI, 2015-2016
- NOAA Science Advisory Council -- Ecosystem Science and Management Working Group, 2011-2013
- NSF, Advisory Council for Geosciences Directorate, 2008-2011
- USGCRP (U.S. Global Change Research Program) Water Cycle Initiative Study Group (1999-2000)
- 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
- NCAR, Member Nominating Committee, 2015- 2018
- 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 Hydrometeology), 2011-
- Advisory Board, NSF Project NGCHC (Northern Gulf Coastal Hazards Collaboratory), 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

- Organizer, First "LIFE-ECOPOTENTIAL" meeting on ecosystem management of protected areas, University of California, Irvine, November 2016.
- 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 (SIESD), 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 hydro-geomoprhologic 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 Selected 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

REFEREED JOURNAL PUBLICATIONS
(Italics indicates student or post-doc)

194. Kumar, P., P.V.V. Le, A.N.T. Papanicolaou, B.L. Rhoads, A.M. Anders, A. Stumpf, C.G. Wilson, E.A. Bettis III, N. Blair, A.S. Ward, T. Filley, H. Lin, L. Keefer, D.A. Keefer, Y.-F. Lin, M. Muste, T.V. Royer, **E. Foufoula-Georgiou**, and P. Belmont, Critical Transition in Critical Zone of Intensively Managed Landscapes, *Anthropocene*, doi:10.1016/j.ancene.2018.04.002, 2018.

193. *Tejedor, A.*, *A. Longjas*, P. Passalacqua, Y. Moreno, and **E. Foufoula-Georgiou**, River deltas as Multiplex networks: A framework for studying multi-process multi-scale connectivity via coupled-network theory, *Geophysical Research Letters,* in review, 2018.

192. *Mamalakis A.*, J.-Y. Yu, J.T. Randerson, A. AghaKouchak, and **E. Foufoula-Georgiou**, A new inter-hemispheric teleconnection increases predictability of winter precipitation in southwestern US, *Nature Communications*, 2018.

191. *Papalexiou, S.,* A. AghaKouchak, and **E. Foufoula-Georgiou**, A diagnostic framework for understanding climatology of the tails of hourly precipitation extremes in the United States, *Water Resour. Res.,* in revision, 2018.

190. *Wu, Z.*, D. Furbish, and **E. Foufoula-Georgiou**, A regime shift in bedload particle motions unifies disparate views of particle velocities and generalizes hop distance-time scaling, *Geophysical Research Letters*, in revision, 2018.

189. *Tejedor, A.*, *A. Longjas*, **E. Foufoula-Georgiou**, T. Georgiou, and Y. Moreno, Diffusion Dynamics and Optimal Coupling in Directed Multiplex Networks, *Physic Review X*, in revision, 2018.

188. *Longjas, A.*, *A. Tejedor*, and **E. Foufoula-Georgiou**, Inferences on predator-prey vulnerabilities via spectral graph analysis of food webs, *Ecological Modeling,* in revision, 2018.

187. *Czuba, J. A.*, *A. T. Hansen*, **E. Foufoula-Georgiou**, and J. C. Finlay, Contextualizing Wetlands Within a River Network to Assess Nitrate Removal and Inform Watershed Management, *Water Resources Research*, Accepted, doi:10.1002/2017WR021859, 2018.

186. *Hansen, A. T.*, *C. L. Dolph,* **E. Foufoula-Georgiou***,* and J. C. Finlay, Contribution of wetlands to nitrate removal at the watershed scale, *Nature Geosciene*, doi:10.1038/s41561-017-0056-6, 2018.

185. *Papalexiou, S. M.,* A. AghaKouchak, K. E. Trenberth, and **E. Foufoula-Georgiou,** Global, Regional, and Megacity Trends in the Highest Temperature of the Year: Diagnostics and Evidence for Accelerating Trends, *Earth's Future*, doi:10.1002/2017EF000709, 2018.

184. *Tejedor, A*., *A. Longjas*, D. A. Edmonds, I. Zaliapin, T. Georgiou, A. Rinaldo, and **E. Foufoula-Georgiou,** Entropy and optimality in river deltas, *Proceedings of the National Academy of Sciences, USA*, 114(44), 11651-11656, doi:10.1073/pnas.1708404114, 2017.

183. *Tejedor, A*., *A. Singh*, I. Zaliapin, A.L. Densmore, and **E. Foufoula-Georgiou**, Scale-dependent erosional patterns in steady and transient state landscapes, *Science Advances*, 3(9), e1701683, doi:10.1126/sciadv.1701683, 2017.

182. *Guilloteau, C.,* **E. Foufoula-Georgiou**, and C.D. Kummerow, Global multiscale evaluation of satellite passive microwave retrieval of precipitation during the TRMM and GPM eras: effective resolution and regional diagnostics for future algorithm development, *Journal of Hydrometeorology*, 18(11), 3051-3070, doi:10.1175/JHM-D-17-0087.1, 2017.

181. *Tejedor, A., A. Longjas,* **E. Foufoula-Georgiou**, T. Georgiou, and Y. Moreno, Diffusion Dynamics and Optimal Coupling in Directed Multiplex Networks, Arxiv, arxiv:1708.01951, 2017

180. *Tejedor, A., A. Longjas,* I. Zaliapin, S. Ambroj, and **E. Foufoula-Georgiou**, Network robustness assessed within a dual connectivity framework: joint dynamics of the Active and Idle Networks, *Scientific Reports* 7, 8567, doi:10.1038/s41598-017-08714-3, 2017.

179. *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, *Geomorphology*, 295, 16-27, doi:10.1016/j.geomorph.2017.06.009, 2017.

178. *Takbiri, Z.,* A. M. Ebtehaj, and **E. Foufoula-Georgiou**, A Multi-sensor Data-driven methodology for all-sky Passive Microwave Inundation Retrieval, *Hydrol. Earth Syst. Sci.*, 21, 2685-2700, doi:10.5194/hess-21-2685-2017, 2017.

177. *Danesh-Yazdi, M.,* G. Botter, and **E. Foufoula-Georgiou**, Time-Variant Lagrangian Transport Formulation Reduces Aggregation Bias of Water and Solute Mean Travel Time in Heterogeneous Catchments, *Geophysical Research Letters*, 44, doi:10.1002/2017GL073827, 2017.

176. Parodi, A., D. Kranzlmueller, A. Clematis, E. Danovaro, A. Galizia, L. Garrote, M. Llasat, O. Caumont, E. Richard, Q. Harpham, F. Siccardi, L. Ferraris, N. Rebora, F. Delogu, E. Fiori, L. Molini, **E. Foufoula-Georgiou**, and D. D'Agostino, DRIHM(2US): an e-Science environment for hydro-meteorological research on high impact weather events, *Bull. Amer. Meteor. Soc.*, doi:10.1175/BAMS-D-16-0279.1, 2017.

175. Belmont, P., and **E. Foufoula-Georgiou**, Solving water quality problems in agricultural landscapes: new approaches for these nonlinear, multi-process, multi-scale systems, *Water Resources Research*, 53, doi:10.1002/ 2017WR020839, 2017.

174. *Czuba, J.A*., **E. Foufoula-Georgiou**, K. Gran, P. Belmont, and P. Wilcock, Interplay between Spatially-Explicit Sediment Sourcing, Hierarchical River-Network Structure, and In-Channel Bed-Material Sediment Transport and Storage Dynamics, *JGR Earth Surface*, 122, 1090-1120, doi:10.1002/2016JF003965, 2017.

173. *Kelly, S*., *Takbiri, Z.,* Belmont, P., **Foufoula-Georgiou, E**., Human amplified changes in precipitation-runoff patterns in large river basins of the Midwestern United States, *Hydrology and Earth System Sciences*, 21, 5065-5088, doi:10.5194/hess-21-5065-2017, 2017.

172. 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 Sundurban delta, *Sustainability Science*, 12, 453-464, doi:10.1007/s11625-016-0420-2, 2017.

171. *Schwenk J*., and **E. Foufoula-Georgiou**, Are process nonlinearities encoded in meandering river planform morphology?, *JGR Earth Surface*, 2017.

170. *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*, 4, 46–75, doi:10.1002/2016EA000196, 2017.

169. *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.

168. 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.

167. *Danesh-Yazdi, M.*, **E. Foufoula-Georgiou**, D. L. Karwan, and G. Botter, Inferring Changes in Water Cycle Dynamics of Intensively Managed Landscapes via the Theory of Time-Variant Travel Time Distributions, *Water Resources Research*, 52, doi:10.1002/2016WR019091, 2016.

166. Szabo, S., E. Brondizio, F.G. Renaud, S. Hetrick, R. J. Nicholls, Z. Matthews, Z. Tessler, A. *Tejedor, Z.* Sebesvari, **E. Foufoula-Georgiou**, S. da Costa, and J. A. Dearing, Population dynamics, delta vulnerability and environmental change: comparison of the Mekong, Ganges–Brahmaputra and Amazon delta regions, *Sustainability Science*, doi: 10.1007/s11625-016-0372-6, 2016.

165. Brondizio, E., **E. Foufoula-Georgiou**, S. Szabo, N. Vogt, Z. Sebesvari, F. G. Renaud, A. Newton, E.

Anthony, A. V. Mansur, Z. Matthews, S. Hetrick, S. M. Costa, Z. Tessler, *A. Tejedor, A. Longjas,* J. A. Dearing, Catalyzing action towards the sustainability of deltas, *Current Opinion in Environmental Sustainability*, 19, 182-194, doi:10.1016/j.cosust.2016.05.001, 2016.

164. *Fan, N*., *A. Singh*, M. Guala, **E. Foufoula-Georgiou**, and B. Wu, Exploring a semimechanistic Episodic Langevin model for bed load transport: Emergence of normal and anomalous advection and diffusion regimes, *Water Resources Research*, doi:10.1002/2015WR018023, 2016.

163. *Tejedor, A*., *A. Longjas*, R. Caldwell, D.A. Edmonds, I. Zaliapin, and **E. Foufoula-Georgiou**, Quantifying the signature of sediment composition on the topologic and dynamic complexity of river delta channel networks and inferences toward delta classification, *Geophysical Research Letters*, 43, doi:10.1002/2016GL068210, 2016.

162. *Gangodagamage, C*., **E. Foufoula-Georgiou**, S.P. Brumby, R. Chartrand, A. Koltunov, D. Liu, M. Cai, and S.L. Ustin, Wavelet-compressed representation of landscapes for hydrologic and geomorphologic applications, *IEEE Geoscience and Remote Sensing Letters*, 13(4), 480-484, doi:10.1109/LGRS.2015.2513011, 2016.

161. Sebesvari, Z., **E. Foufoula-Georgiou**, I. Harrison, E.S. Brondizio, T. Bucx, J.A. Dearing, D. Ganguly, T. Ghosh, S.L. Goodbred, M. Hagenlocher, R. Hajra, C. Kuenzer, A.V. Mansur, Z. Matthews, R.J. Nicholls, K. Nielsen, I. Overeem, R. Purvaja, Md.M. Rahman, R. Ramesh, F.G. Renaud, R.S. Robin, B. Subba Reddy, G. Singh, S. Szabo, Z.D. Tessler, C. van de Guchte, N. Vogt, and C.A. Wilson, Imperatives for sustainable delta futures, *Global Sustainable Development Report (GSDR) 2016 Science Brief*, 2016.

160. *Hansen, A.T*., *J.A. Czuba*, *J. Schwenk*, *A. Longjas*, *M. Danesh-Yazdi*, D.J. Hornbach, and **E. Foufoula-Georgiou**, Coupling freshwater mussel ecology and river dynamics using a simplified dynamic interaction model, *Freshwater Science*, 35(1), 200-215, doi:10.1086/684223, 2016.

159. **Foufoula-Georgiou, E**., *Z. Takbiri, J.A. Czuba*, and *J. Schwenk*, The change of nature and the nature of change in agricultural landscapes: Hydrologic regime shifts modulate ecological transitions, *Water Resources Research*, 51, doi:10.1002/2015WR017637, 2015.

158. Tessler, Z.D., C.J. Vorosmarty, M. Grossberg, I. Gladkova, H. Aizenman, J. Syvitski, and **E. Foufoula-Georgiou**, Profiling risk and sustainability in coastal deltas of the world, *Science*, 2015.

157. Kuenzer, C., I. Klein, T. Ullmann, **E. Foufoula-Georgiou**, R. Baumhauer, and S. Dech, Remote sensing of river delta inundation: Exploiting the potential of coarse spatial resolution, temporally-dense MODIS time series, *Remote Sensing*, 7, 8516-8542, doi:10.3390/rs70708516, 2015.

156. Szabo, S., F.G. Renaud, M.S. Hossain, Z. Sebesvari, Z. Matthews, **E. Foufoula-Georgiou**, and R.J. Nicholls, Sustainable development goals offer new opportunities for tropical delta regions, *Environment: Science and Policy for Sustainable Development*, 57(4), 16-23, doi:10.1080/00139157.2015.1048142, 2015.

155. *Ebtehaj, A.M*., R.L. Bras, and **E. Foufoula-Georgiou**, On evaluation of ShARP passive rainfall retrievals over snow-covered land surfaces and coastal zones, arXiv:1503.05495v2, 2015.

154. *Ebtehaj, A.M*., **E. Foufoula-Georgiou**, G. Lerman, and R.L. Bras, Compressive Earth Observatory: An insight from AIRS/AMSU retrievals, *Geophysical Research Letters*, doi:10.1002/2014GL062711, 2015

153. Pelletier, J.D., A.B. Murray, J.L. Pierce, P.R. Bierman, D.D. Breshears, B.T. Crosby, M. Ellis, **E. Foufoula-Georgiou**, A.M. Heimsath, C. Houser, N. Lancaster, M. Marani, D.J. Merritts, L.J. Moore, J.L. Pederson, M.J. Poulos, T.M. Rittenour, J.C. Rowland, P. Ruggiero, D.J. Ward, A.D. Wickert, and E.M. Yager, Forecasting the response of Earth's surface to future climatic and land-use changes: A review of methods and research needs, *Earth's Future*, 3(7), 220-251, doi:10.1002/2014EF000290, 2015.

152. *Singh, A.,* L. Reinhardt, and **E. Foufoula-Georgiou**, Landscape reorganization under changing climatic forcing: Results from an experimental landscape, *Water Resour. Res.*, 51(6), 4320-4337,

doi:10.1002/2015WR017161, 2015.

151. *Tejedor, A.*, *A. Longjas*, I. Zaliapin, and **E. Foufoula-Georgiou**, Delta channel networks: 1. A graph-theoretic approach for studying connectivity and steady-state transport, *Water Resour. Res.*, 51(6), 3998-4018, doi:10.1002/2014WR016577, 2015.

150. *Tejedor, A.*, *A. Longjas*, I. Zaliapin, and **E. Foufoula-Georgiou**, Delta channel networks: 2.Metrics of topologic and dynamic complexity for delta comparison, physical inference and vulnerability assessment, *Water Resour. Res.,* 51(6), 4019-4045, doi:10.1002/2014WR016604, 2015.

149. *Schwenk, J.*, S. Lanzoni, and **E. Foufoula-Georgiou**, The life of a meander bend: connecting shape and dynamics through numerical modeling, *J. Geophys. Res.- Earth Sciences* (selected as the highlight paper of the volume), 120(4), 690-710, doi:10.1002/2014JF003252, 2015.

148. *Gangodagamage, C.,* and **E. Foufoula-Georgiou**, Wavelet-compressed representation of landscapes for geomorphologic applications, *IEEE Geoscience and Remote Sensing Letters*, to appear, 2015.

147. *Czuba, J.*, and **E. Foufoula-Georgiou**, Dynamic connectivity in a fluvial network for identifying hotspots of geomorphic change, *Water Resour. Res.*, 51(3), 1401-1421, doi:10.1002/2014WR016139, 2015.

146. *Ebtehaj, A.M.*, R.L. Bras, and **E. Foufoula-Georgiou**, Shrunken locally linear embedding for passive microwave retrieval of precipitation", *IEEE Trans. on Geosci. and Remote Sens.*, doi:10.1109/TGRS.2014.2382436, 2015.

145. *Gangodagamage, C.*, **E. Foufoula-Georgiou**, and P. Belmont, River basin organization around the mainstem: scale invariance in tributary branching and the incremental area function, *J. Geophys. Res. Earth Surf.*, 119(10), 2174-2193, doi: 10.1002/2014JF003304, 2014.

144. Keylock, C., *A. Singh,* and **E. Foufoula-Georgiou**, The complexity of gravel-bed river topography examined via Gradual Wavelet Reconstruction, *J. Geophys. Res.- Earth Sciences*, 119(3), 682-700, doi:10.1002/2013JF002999, 2014.

143. *Ning, L.*, *F. Carli*, *M. Ebtehaj*, **E. Foufoula-Georgiou**, and T. Georgiou, Coping with model uncertainty in data assimilation using optimal mass transport, *Water Resour. Res.*, 50(7), 5817-5830, doi: 10.1002/2013WR014966, 2014.

142. *Ebtehaj, A.M.*, M. Zupanski, G. Lerman, and **E. Foufoula-Georgiou**, Variational data assimilation via sparse regularisation, *Tellus A*, 66, 21789, doi: 10.3402/tellusa.v66.21789, 2014.

141. Keylock, C., *A. Singh*, J. Venditti, and E**. Foufoula-Georgiou**, Robust classification for the joint velocity-intermittency structure of turbulent flow over fixed and mobile bedforms, *Earth Surf. Proc. And Landforms*, 39(15), 1717-1728, doi: 10.1002/esp.3550, 2014.

140. *Fan, N.*, D. Zhong, B. Wu, **E. Foufoula-Georgiou**, and M. Guala, A mechanistic-stochastic formulation of bed load particle motions: from individual particle forces to the Fokker-Planck equation under low transport rates, *J. Geophys. Res.*, 119(3), 464-482, doi:10.1002/2013JF002823, 2014.

139. *Czuba, J.A.*, and **E. Foufoula-Georgiou**, A network-based framework for identifying potential synchronizations and amplifications of sediment delivery in river basins, *Water Resour. Res.,5* 0(5), 3826-3851, doi:10.1002/2013WR014227, 2014.

138. Guala, M., *A. Singh*, N.B. Bull, and **E. Foufoula-Georgiou**, Spectral description of migrating bedforms and sediment transport, *J. Geophys. Res.,* 119(2), 123-137, doi:10.1002/2013JF002759, 2014.

137. **Foufoula-Georgiou, E**., *A.M. Ebtehaj*, S.Q. Zhang, and A.Y. Hou, Downscaling satellite precipitation with emphasis on extremes: A variational ℓ_1-norm regularization in the derivative domain, *Surveys in Geophysics*, 35(3), 765-783, doi:10.1007/s10712-013-9264-9, 2014.

136. **Foufoula-Georgiou, E**., I. Overeem, Y. Saito, S. Dech, C. Kuenzer, S. Goodbred, I. Harrison, E. Anthony, E. Brondizio, J. Hutton, R. Nicholls, Z. Matthews, J. Dearing, A. Lazar, A. Baschieri, A. Newton, R. Ramachandran, F. Renaud, Z. Sebesvari, C. Vorosmarty, Z. Tessler, S. Costa, K. M. Ahmed, M. M. Rahman, G. Lintern, P. Van Cappellen, H. Durr, S. Gao, M. Marchand, T. Bucx, V.

L. Nguyen, M. Goichot, C. Paola, D. Mohrig, and R. Twilley, "A vision for a coordinated international effort on delta sustainability", in *Deltas: Landforms, Ecosystems and Human Activities*, edited by G. Young & G.M.E. Perillo, IAHS Publ. 358, 3-11, 2013.

135. *Ganti, V*., C. Paola, and **E. Foufoula-Georgiou**, Kinematic controls on the preserved cross-sets, *J. Geophys. Res*., 118, 1-12, doi: 10.1002/jgrf.20094, 2013.

134. Hondzo, M., V. Voller, M. Morris, **E. Foufoula-Georgiou**, J. Finlay, *V. Ganti*, and M. Power, Estimating and scaling stream ecosystem metabolism along channels with heterogeneous substrate, *Ecohydrology*, 679-688, doi: 10.1002/eco.1391, 2013.

133. *Singh, A*., *J. Czuba*, **E. Foufoula-Georgiou**, J. Marr, C. Hill, S. Johnson, C. Ellis, J. Mullin, C. H. Orr, P. Wilcock, M. Hondzo, and C. Paola, SteamLab Collaboratory: Experiments, Data sets and Research Synthesis, *Water Resour, Res.*, 49, 1746-1752, doi:10.1002/wrcr.20142, 2013.

132. *Falcini, F*., *V. Ganti*, C. Paola, **E. Foufoula-Georgiou**, and V. Voller, A combined non-linear and non-local model in depositional systems, *J. Geophys. Res.,* 118, 1-11, doi: 10.1002/jgrf.20108, 2013 2013.

131. Keylock, C., *A. Singh*, and **E. Foufoula-Georgiou**, The influence of bedforms on the velocity-intermittency structure of turbulent flow above a gravel bed, *Geophys. Res. Letters*, 40, 1351-1355, doi:10.1002/grl.50337, 2013.

130. *Ebtehaj, A.M.* and **E. Foufoula-Georgiou**, Variational Downscaling, Fusion, and Assimilation of Hydro-meteorological Sates via Regularized Estimation, *Water Resour. Res., Res.*, 49, 1-20, doi: 10.1002/wrcr.20424, 2013.

129. Parodi, A., G. Boni, L. Ferraris, F. Siccardi, P. Pagliara, E. Trovalore, **E. Foufoula-Georgiou**, and D. Kranzlmueller, The "Perfect Storm": From across the Atlantic to the Hills of Genoa, *EOS,* Vol. 93, No. 24, 2012.

128. *Singh, A*., and **E. Foufoula-Georgiou**, On the interaction of bed topography, instantaneous shear stress and sediment flux in an experimental channel, *Coherent flow structure in Geophysical Flows at Earth's Surfaces*, Invited Book Chapter, in print, 2013.

127. *Zanardo* S., I. Zaliapin and **E. Foufoula-Georgiou**, Are American rivers Tokunaga self-similar? New results on river network topology and its climatic dependence, *Journal of Geophys. Res.*, 118, 166-183, doi:10.1029/2012JF002392, 2013.

126. *Singh, A*., **E. Foufoula-Georgiou**, F. Porte-Agel and P. R. Wilcock, Coupled dynamics of the co-evolution of bed topography, flow turbulence and sediment transport in an experimental flume, *J. Geophys. Res.*, 117, F04016, doi:10.1029/2011JF002323, 2012.

125. **Foufoula-Georgiou, E**., M. Guala, and F. Sotiropoulos, Marine-hydrokinetic energy and the environment: observations, modeling, and basic processes, EOS, Trans. Amer. Geophys. Union, doi:10.1029/2012EO100009, 2012.

124. *Ebtehaj A.M*., **E. Foufoula-Georgiou**, G. Lerman, Sparse Regularization for Precipitation Downscaling, *Journal of Geophys. Res.,*117,D08107,doi:10.1029/2011JD017057, 2012.

123. Voller, V. R., *V. Ganti*, C. Paola, and **E. Foufoula-Georgiou**, Does the flow of information in a landscape have direction?, *Geophys. Res. Lett.*, 39, L01403, doi:10.1029/2011GL050265, 2012

122. *Passalacqua P*., P. Belmont and **E. Foufoula-Georgiou**, Automatic geomorphic feature extraction from lidar in flat and engineered landscapes. *Water Resour. Res.*, 48, W03528, doi:10.1029/2011WR010958, 2012.

121. Straub, K. M., *V. Ganti*, C. Paola and **E. Foufoula-Georgiou**, Prevalence of exponential bed thickness distributions in the stratigraphic record: Experiments and theory, *Journal of Geophys. Res.,*117, F02003, doi:10.1029/2011JF002034, 2012.

120. *Ganti, V*., *P. Passalacqua*, and **E. Foufoula-Georgiou**, A sub-grid scale closure for nonlinear hillslope sediment transport models, *J. Geophys. Res.,* 117, F02012, doi: 10.1029/2011JF002181., 2012.

119. *Ebtehaj, A.M.* and **E. Foufoula-Georgiou**, Adaptive Fusion of Multi-sensor Precipitation using Gaussian Scale Mixtures in the Wavelet Domain, *J. Geophys. Res., 116,* D22110, doi:10.1029/2011JD016219 , 2011.

118. *Singh, A*., S. Lanzoni, P. R. Wilcock and **E. Foufoula-Georgiou**, Multi-scale statistical characterization of migrating dunes in sand-bed rivers, *Water Resour. Res.*, doi:10.1029/2010WR010122,

117. **Foufoula-Georgiou, E**., Syvitski, J., Paola, C., Chu Thai Hoanh, Phuc Tuong, Vörösmarty, C., Kremer, H., Brondizio, E., and Saito, Y., and Twilley, R., International Year of Deltas 2013 (IYD-2013): A Proposal, Eos, Vol. 92, No. 40, 4, 2011

116. Sorooshian S., A. AghaKouchak, P. Arkin, J. Eylander, **E. Foufoula-Georgiou**, R. Harmon, J. Hendrickx, B. Imam, R. Kuligowski, B. Skahill, and G. Skofronick-Jackson, "Advanced Concepts on Remote Sensing of Precipitation at Multiple Scales", *Bull. Am. Meteor. Soc.*, 2011

115. **E. Foufoula-Georgiou**, and *P. Passalacqua*, Nonlocal transport theories in geomorphology: mathematical modeling of broad scales of motion, *Treatise in Geomorphology*, 2011.

114. *Straub, K. M.*, *V. Ganti*, C. Paola, and **E. Foufoula-Georgiou**, Persistence of exponential bed thickness distribution in the stratigraphic record: experiments and theory, *J. Geophys. Res.*, 116, F0211, doi:10.1029/2010JF001893, 2011.

113. *Basu, B*., **E. Foufoula-Georgiou**, and A. S. Sharma, Chaotic behavior in the flow along a wedge modeled by the Blasius equation, *Nonlinear Process. in Geophys*., 18(2), 171-178, 2011.

112. *Ganti, V*., *K. M. Straub*, **E. Foufoula-Georgiou**, and C. Paola, Space-time dynamics of depositional systems: Experimental evidence and theoretical modeling of heavy-tailed statistics, *J. Geophys. Res.*, 116, F02011, doi:10.1029/2010JF001893, 2011.

111. *Basu, B*., **E. Foufoula-Georgiou**, and A. S. Sharma, Chaotic behavior in the flow along a wedge modeled by the Blasius equation, *Nonlinear Process. in Geophys*., 18(2), 171-178, 2011.

110. *Ebtehaj, M*., and **E. Foufoula-Georgiou**, Statistics of precipitation reflectivity images and cascade of Gaussian‐scale mixtures in the wavelet domain: A formalism for reproducing extremes and coherent multiscale structures, *J. Geophys. Res.*, 116, D14110, doi:10.1029/2010JD015177,2011.

109. *Ebtehaj, M*., and **E. Foufoula-Georgiou**, Orographic Signature on Multiscale Statistics of Extreme Rainfall: A Storm Scale Study, *J. Geophys. Res.*, doi:10.1029/2010JD014093, 2011.

108. Parodi, A., **E. Foufoula-Georgiou**, and K. Emanuel, Signature of microphysics on spatial rainfall statistics, *J. Geophys. Res.*, 116, D14119, doi:10.1029/2010JD015124, 2011

107. *Gangodagamage, C*., **E. Foufoula-Georgiou**, and P. Belmont, Revisiting scaling laws in river basins: rnew scaling considerations across hillslope and fluvial regimes, *Water Resour. Res*., 47, W07508, doi:10.1029/2010WR009252, 2011.

106. **Foufoula-Georgiou, E**. and C. Stark, Rethinking geomorphic transport: stochastic theories, broad range of motion and non-locality, *J. Geophys. Res*., 115, F00A01, doi:10.1029/2010JF001661, 2010.

105. **Foufoula-Georgiou, E**., *V. Ganti*, and W. E. Dietrich, A non-local theory for sediment transport on hillslopes, *J. Geophys. Res.*, 115, F00A16, doi:10.1029/2009JF001280, 2010.

104. Zaliapin, I., **E. Foufoula-Georgiou**, and M. Ghil, Transport on river networks: a dynamical approach, *J. Geophys. Res. - Earth Surface*, 115, F00A15, doi:10.1029/2009JF001281, 2010.

103. *Ganti, V*., M. M. Meerschaert, **E. Foufoula-Georgiou**, E. Viparelli, and G. Parker, Normal and Anomalous dispersion of tracers in gravel-bed rivers, *J. Geophys. Res.*, 115, F00A12, doi:10.1029/2008JF001222, 2010.

102. Palmer, M.A., E.S. Bernhardt, W.H. Schlesinger, K.N. Eshleman, **E. Foufoula-Georgiou**, M.S. Hendryx, A.D. Lemly, G.E. Likens, O.L. Loucks, M.E. Power, P.S. White, and P.R. Wilcock, Mountaintop mining consequences, *Science*, 327 (5962), 148-149, doi:10.1126/science.1180543, 2010.

101. *Passalacqua, P*., P. Tarolli, and **E. Foufoula-Georgiou**, Testing space-scale methodologies for automatic geomorphic feature extraction from lidar in a complex mountainous lanscape, Water Resour. Res. 46, W11535, doi:10.1029/2009WR008812, 2010.

100. *Passalacqua, P*., T. Do Trung, **E. Foufoula-Georgiou**, G. Sapiro, and W. E. Dietrich, A geometric framework for channel network extraction from LiDAR: nonlinear diffusion and geodesic paths, *J. Geophys. Res.*, 115, F01002, doi:10.1029/2009JF001254, 2010.

99. Stark, C. P., **E. Foufoula-Georgiou**, and *V. Ganti*, A non-local theory of sediment buffering and bedrock channel evolution, *J. Geophys. Res.*, 114, F01029, doi:10.1029/2008JF000981, 2009.

98. *Singh, A*., K. Fienberg, D. J. Jerolmack, J. Marr, and **E. Foufoula-Georgiou**, Experimental evidence for statistical scaling and intermittency in sediment transport rates, *Geophys. Res. Lett.,* 114, F01025, doi:10.1029/2007JF000963, 2009.

97. Singh, A., F. Porte-Agel, and **E. Foufoula-Georgiou**, On the influence of gravel bed dynamics on velocity power spectra, *Water Resour. Res.,* 46, W04509, doi:10.1029/2009WR008190, 2010.

96. *Ganti, V*., *A. Singh*, *P. Passalacqua*, and **E. Foufoula-Georgiou**, A subordinated Brownian motion model for sediment transport, P*hys. Rev. E*, 80, 011111, 2009.

95. *Fienberg, K*., *A. Singh*, **E. Foufoula-Georgiou**, D. Jerolmack, and J. Marr, A theoretical framework for interpreting and quantifying the sampling time dependence of gravel bedload transport rates, *in* Gray, et al., Bedload-surrogate monitoring technologies: U.S. Geological Survey Scientific Investigations Report 2010-5091, p. 266-282, 2010.

94. *Roux, S.G*., *V. Venugopal*, *K. Fienberg*, A. Arneodo, and **E. Foufoula-Georgiou**, Evidence for inherent nonlinearity in temporal rainfall, *Advances in Water Resources*, doi:10.1016/j.advwatres.2008.09.007, 2008.

93. *Singh, A*., S. Lanzoni, and **E. Foufoula-Georgiou**, Nonlinearity and complexity in gravel bed dynamics, in Stochastic Environmental Research and Risk Assessment, Springer Velrag, N.Y, doi: 10.1007/S00477-008-0269-8, 2008

92. *Barnes E. A*., M. E. Power, **E. Foufoula-Georgiou**, M. Hondzo, W. E. Dietrich, Upscaling river biomass using dimensional analysis and hydrogeomorphic scaling, *Geophys. Res. Lett.*, 34, L24S26, doi:10.1029/
2007GL031931, 2007.

91. *Lashermes B*., **E. Foufoula-Georgiou**, W. E. Dietrich, Channel network extraction from high resolution topography using wavelets, *Geophys. Res. Lett.*, 34, L23S04, doi:10.1029/2007GL031140, 2007

90. *Basu, S*., **E. Foufoula-Georgiou**, *B. Lashermes*, and A. Arneodo, Estimating Intermittency Exponent in Neutrally Stratified Atmospheric Surface Layer Flows: A Robust Framework based on Magnitude Cumulant and Surrogate Analyses, *Phys. Fluids 19*, 115102, doi:10.1063/1.2786001, 2007.

89. *Lashermes, B*., **E. Foufoula-Georgiou**, and W. E. Dietrich, Channel network extraction from high resolution topography using wavelets, *Geophys. Res. Lett.*, 34, L23S04, doi:10.1029/2007GL031140, 2007

88. *Sapozhnikov, V*. and **E. Foufoula-Georgiou**, An exponential Langevin-type model for rainfall exhibiting spatial and temporal scaling, in *20 Years of Nonlinear Dynamics in Geosciences*, A. Tsonis and J.B. Elsner, eds., Springer-Verlag, New York, 2007.

87. *Lashermes, B*. and **E. Foufoula-Georgiou**, Area and width functions of river networks: New results on multifractal properties, *Water Resour. Res.*, 43, W09405, doi:10.1029/2006WR005329, 2007

86. *Gangodagamage, C*., E. Barnes, and **E. Foufoula-Georgiou**, Scaling in river corridor widths depicts organization in valley morphology, *Geomorphology*, 91(3-4), 198-215, doi:10.1016/j.geomorph.2007.
04.014, 2007

85. *Passalacqua P*., F. Porté-Agel, **E. Foufoula-Georgiou**, C. Paola, Application of dynamic subgrid-scale concepts from large-eddy simulation to modeling landscape evolution, *Water Resources Research*, 42, W06D11, doi:10.1029/2006WR004879, 2006.

84. Sklar L. S., W. E. Dietrich, **E. Foufoula-Georgiou**, *B. Lashermes*, D. Bellugi, Do gravel bed river size distributions record channel network structure?, *Water Resources Research*, 42, W06D18, doi:10.1029/
2006WR005035, 2006.

83. *Venugopal V*., *S. G. Roux*, **E. Foufoula-Georgiou**, A. Arneodo, Revisiting multifractality of high-resolution temporal rainfall using a wavelet-based formalism, *Water Resources Research*, 42, W06D14, doi:10.1029/2005WR004489, 2006.

82. *Basu, S*., F. Porté-Agel, **E. Foufoula-Georgiou**, J.-F Vinuesa, and M. Pahlow, M. Revisiting the local scaling hypothesis in stably stratified atmospheric boundary layer turbulence: an integration of field and laboratory measurements with large-eddy simulations, *Boundary-Layer Meteorology*, in press, 2006.

81. *Dodov, B*., and **E. Foufoula-Georgiou**, Floodplain morphometry extraction from a high resolution digital elevation model: a simple algorithm for regional analysis studies, IEEE Geoscience and Remote Sensing Letters, Vol 3, No 3, 410-413, 2006.algorithm for regional analysis studies, IEEE *Geoscience and Remote Sensing Letters*, in press, 2006.

80. *Gupta R*., *V. Venugopal*, **E. Foufoula-Georgiou**, A methodology for merging multisensor precipitation estimates based on expectation-maximization and scale-recursive estimation, *J. Geophysical Research*, 111, D02102, doi:10.1029/2004JD005568, 2006.

79. Paola C., **E. Foufoula-Georgiou**, W. E. Dietrich, M. Hondzo, D. Mohrig, G. Parker, M. E. Power, I. Rodriguez-Iturbe, V. Voller, P. Wilcock, Toward a unified science of the Earth's surface: Opportunities for synthesis among hydrology, geomorphology, geochemistry, and ecology, *Water Resources Research*, 42, W03S10, doi:10.1029/2005WR004336, 2006.

78. *Venugopal, V*., S. G. Roux, **E. Foufoula-Georgiou** and A. Arneodo, Scaling behavior of high resolution temporal rainfall: New insights from a wavelet-based cumulant analysis, *Phys. Let. A*, 348,335-345, 2006.

77. *Dodov B*., **E. Foufoula-Georgiou**, Fluvial processes and streamflow variability: Interplay in the scale-frequency continuum and implications for scaling, *Water Resources Research*, 41, W05005, doi:10.1029/2004WR003408, 2005.

76. *Smedsmo, J*., *V. Venugopal*, **E. Foufoula-Georgiou**, K. Droegemeier and F. Kong, On the Vertical Structure of Modeled and Observed Deep Convective Storms: Insights for Precipitation Retrieval and Microphysical Parameterization. *J. Applied Meteorology*, 44(12), 1866-1884, 2005.

75. *Dodov,* B., and **E. Foufoula-Georgiou**, Incorporating the spatio-temporal distribution of rainfall and basin geomorphology into nonlinear analyses of streamflow dynamics: Methodology development and a predictability study, *Advances in Water Resources*, 28, 711-728, 2005.

74. *Venugopal, V*., *S. Basu*, and **E. Foufoula-Georgiou**, A new metric for comparing precipitation patterns with application to ensemble forecasts, *J. Geophysical Research*, 110 (D08111), doi:10.1029/2004JD005395, 2005.

73. Stefan, H. G., **E. Foufoula-Georgiou**, and R. E. A. Arndt, The St. Anthony Falls Laboratory: A rich history and a bright future, EWRI History and Heritage Book Proceedings, *Environmental & Water Resources History Symposium* 2004, ASCE, 2004.

72. *Dodov, B*., and **E. Foufoula-Georgiou**, Generalized hydraulic geometry: Insights based on fluvial instability analysis and a physical model, *Water Resources Research*, 40,W12201, doi:10.1029/2004WR003196, 2004.

71. *Basu, S.*, **E. Foufoula-Georgiou**, and F. Porté-Agel, Synthetic turbulence, fractal interpolation and large-eddy simulation, *Physical Review E*, 70, 026310, 2004.

70. *Dodov, B.*, and **E. Foufoula-Georgiou**, Generalized hydraulic geometry: Derivation based on a multiscaling formalism, *Water Resources Research*, 40, W06302, doi:10.1029/2003WR002082, 2004.

69. Silberman, E., R. E. A. Arndt, G. Parker, **E. Foufoula-Georgiou**, and C. Paola, The St. Anthony Falls Laboratory in History in *Henry P G Darcy, and Other Pioneers in Hydraulics: Contributions in Celebration of the 200th Birthday of Henry Darcy*, Brown et al. (ed.), ASCE, 2003.

68. *Venugopal V.*, F. Porté-Agel, **E. Foufoula-Georgiou** and M. Carper, Multiscale interactions between surface shear stress and velocity in turbulent boundary layers, *J. Geophysical Research*, 108(D19), doi:10.1029/2002JD003025 (2003JD004285), 2003.

67. *Harris, D.*, **E. Foufoula-Georgiou**, and C. Kummerow, Effects of under-represented precipitation variability and partial beamfilling on microwave rainfall retrievals, *J. Geophysical Research*, 108(D8), 10.1029/2001JD001144, 2003.

66. *Tustison, B.*, *D. Harris*, and **E. Foufoula-Georgiou**, Scale-Recursive estimation for multi-sensor QPF verification: A preliminary assessment, *J. Geophysical Research*, 108(D8), 8377-8390, 2003.

65. *Basu, S.*, **E. Foufoula-Georgiou**, and F. Porté-Agel, Predictability of atmospheric boundary-layer flows as a function of scale, *Geophysical Research Letters*, doi: 10.1029 / 2002GL015497, 2002.

64. *Basu, S.,* and **E. Foufoula-Georgiou**, Detection of nonlinearity and chaoticity in time series using the transportation distance function, *Physics Letters A*, 301(5-6), 413-423, 2002.

63. *Harris, D.*, **E. Foufoula-Georgiou**, K. Droegemeier, and T. Levit, Multi-scale statistical properties of a high-resolution precipitation forecast, *J. Hydrometeorology*, 2(4), 406-418, 2001.

62. **Foufoula-Georgiou, E**. and *V. Venugopal*, Patterns and organization in precipitation, in *Spatial Patterns in Catchment Hydrology-Observations and Modelling*, R. Grayson and G. Blöschl (eds.), *Cambridge University Press*, 2001.

61. Paola, C. and **E. Foufoula-Georgiou**, Statistical geometry and dynamics of braided rivers, in *Gravel-Bed Rivers*, M. P. Mosely (ed.), *New Zealand Hydrological Society*, Wellington, NZ, 2001.

60. *Nykanen, D.* and **E. Foufoula-Georgiou**, Soil moisture variability and its effect on scale-dependency of nonlinear parameterizations in coupled land-atmosphere models, *Advances in Water Resources*, 24(9-10), 1143-1157, 2001.

59. *Tustison, B.*, *D. Harris*, and **E. Foufoula-Georgiou**, Scale issues in verification of precipitation forecasts, *J. Geophysical Research*, 106(D11), 11,775-11,784, 2001.

58. *Harris, D.* and **E. Foufoula-Georgiou**, Subgrid variability and stochastic downscaling of modeled precipitation and its effects on radiative transfer computations, *J. Geophysical Research*, 106(D10), 10349-10362, 2001.

57. **Foufoula-Georgiou, E**. and *V. Sapozhnikov*, Scale invariances in the morphology and evolution of braided rivers, *Mathematical Geology*, 33(3), 2001.

56. *Nykanen, D.*, **E. Foufoula-Georgiou**, and W. Lapenta, Impact of small-scale rainfall variability on larger-scale spatial organization of land-atmosphere fluxes, *J. Hydrometeorology*, 2(2), 105-121, 2001.

55. Hornberger, G.M., J.D. Aber, J. Bahr, R.C. Bales, K. Beven, **E. Foufoula-Georgiou**, G. Katul, J.L. Kinter III, R.D. Koster, D. Lettenmaier, D. McKnight, K. Miller, J.O. Roads, B.R. Scanlon, and E. Smith, A plan for a new science initiative on the Global Water Cycle, *US Global Change Research Program*, Washington DC, May 2001.

54. Droegemeier, K. K., J. D. Smith, S. Businger, C. Doswell III, J. Doyle, C. Duffy, **E. Foufoula-Georgiou,** T. Graziano, L.D. James, W. Krajewski, M. LeMone, D. Lettenmaier, C. Mass, R. Pielke Sr., P. Ray, S. Rutledge, J. Schaake, and E. Zipser, Hydrological aspects of weather prediction and flood

warnings: Report of the Ninth Prospectus Development Team of the U.S. Weather Research Program, *Bulletin of the American Meteorological Society*, 81(11), 2665-2680, 2000.

53. *Zepeda-Arce, J*, **E. Foufoula-Georgiou**, and K. Droegemeier, Space-time rainfall organization and its role in validating quantitative precipitation forecasts, *J. Geophysical Research*, 105(D8), 10,129-10,146, 2000.

52. *Cârsteanu,* A., **E. Foufoula-Georgiou**, and *V. Venugopal*, Event-specific multiplicative cascades for temporal rainfall, *J. Geophysical Research*, 104(D24), 31611-622, 1999.

51. *Venugopal, V*., **E. Foufoula-Georgiou**, and *V. Sapozhnikov*, Evidence of dynamic scaling in space-time rainfall, *J. Geophysical Research*, 104(D24), 31599-610, 1999.

50. *Venugopal, V*., **E. Foufoula-Georgiou**, and *V. Sapozhnikov*, A space-time downscaling model for rainfall, *J. Geophysical Research*, 104(D16), 19,705-721, 1999.

49. *Sapozhnikov, V*. and **E. Foufoula-Georgiou**, Horizontal and vertical self-organization of braided rivers towards a critical state, *Water Resources Research*, 35(3), 843-851, 1999.

48. *Sapozhnikov, V*., B. Murray, C. Paola, and **E. Foufoula-Georgiou**, Validation of braided-stream models: Spatial state-space plots, self-affine scaling and island shapes, *Water Resources Research*, 34(9), 2353-2364, 1998.

47. *Nykanen, D*., **E. Foufoula-Georgiou**, and *V. Sapozhnikov*, Study of spatial scaling in braided river patterns using synthetic aperture radar imagery, *Water Resources Research*, 34(7), 1795-1807, 1998.

46. **Foufoula-Georgiou, E**. and *V. Sapozhnikov*, Anisotropic scaling in braided rivers: An integrated theoretical framework and results from application to an experimental river, *Water Resources Research*, 34(4), 863-867, 1998.

45. **Foufoula-Georgiou**, E., On stochastic theories of space-time rainfall: Some recent results and open problems, in *Stochastic Methods in Hydrology: Rain, Landforms and Floods*, Gupta et al. (eds.), Vol. 7 in the Advanced Series on Statistical Sciences and Applied Probability, *Word Scientific*, 1997.

44. *Cârsteanu, A*., *V. Sapozhnikov*, *V. Venugopal*, and **E. Foufoula-Georgiou**, Absolute optimal time-frequency basis–a research tool, *J. Phys. A: Math. and Gen.*, 30, 7133-7146, 1997.

43. *Zhang, S.* and **E. Foufoula-Georgiou**, Subgrid scale rainfall variability and effects on atmospheric and surface variable prediction, *J. Geophysical Research* 102 (D6), 19,559-573, 1997.

42. *Kumar, P*. and **E. Foufoula-Georgiou**, Wavelet analysis for geophysical applications, *Reviews in Geophysics*, 35(4), 385-412, 1997.

41. *Cârsteanu, A*. and **E. Foufoula-Georgiou**, Non-trivial scaling in the loss of prediction information with aggregation in hourly precipitation, *J. Geophysical Research*, 102(D6), 6631-6636, 1997.

40. *Sapozhnikov, V*. and **E. Foufoula-Georgiou**, Experimental evidence of dynamic scaling and self-organized criticality in braided rivers, *Water Resources Research*, 33(8), 1983-1991, 1997.

39. *Cârsteanu, A.* and **E. Foufoula-Georgiou**, Assessing dependence among weights in a multiplicative cascade model of temporal rainfall, *J. Geophysical Research*, 101(D21), 26,363-26,370, 1996.

38. *Perica, S.* and **E. Foufoula-Georgiou**, A Model for multiscale disaggregation of spatial rainfall based on coupling meteorological and scaling descriptions, *J. Geophysical Research*, 101(D21), 26,347-26,361, 1996.

37. *Perica, S*. and **E. Foufoula-Georgiou**, Linkage of scaling and thermodynamic parameters of rainfall: results from midlatitude mesoscale convective systems, *J. Geophysical Research*, 101(D3), 7431-7448, 1996.

36. *Sapozhnikov, V*. and **E. Foufoula-Georgiou**, Self-affinity in braided rivers, *Water Resources Research*, 32(5), 1429-1439, 1996.

35. *Sapozhnikov, V*. and **E. Foufoula-Georgiou**, Do the current landscape evolution model show self-organized criticality? *Water Resources Research*, 32(4), 1109-1112, 1996.

34. *Venugopal, V*. and **E. Foufoula-Georgiou**, Energy decomposition of rainfall in the time-frequency-scale domain using wavelet packets, *J. Hydrology*, 187, 3-27, 1996.

33. Franchini, M., *K. R. Helmlinger*, **E. Foufoula-Georgiou**, and E. Todini, Stochastic storm transposition coupled with rainfall/runoff modeling for estimation of exceedance probabilities of design floods, *J. Hydrology*, 175, 511-532, 1996.

32. *Kumar, P*. and **E. Foufoula-Georgiou**, A multicomponent self-similar characterization of rainfall fluctuations, in *Environmental Studies*, M. Wheeler et al. (eds.), *Springer-Verlag, N.Y.*, 1995.

31. *Sapozhnikov, V*. and **E. Foufoula-Georgiou**, Study of self-similar and self-affine objects using logarithmic correlation integral, *J. Phys. A: Math. and Gen.*, 28, 559-571, 1995.

30. **Foufoula-Georgiou, E**. and W. Krajewski, Recent advances in rainfall modeling, estimation, and forecasting, U.S. National Rep. to *Int. Union of Geodesy and Geophysics (1991-1994)*, *Reviews in Geophysics*, 1125-1137, July 1995.

29. *Kumar, P*. and **E. Foufoula-Georgiou**, Introduction to wavelet transforms, in *Wavelets in Geophysics*, E. Foufoula-Georgiou and P. Kumar (editors), *Academic Press*, 1994.

28. *Kumar, P.* and **E. Foufoula-Georgiou**, Characterizing multiscale variability of zero intermittency in spatial rainfall, *J. Applied Meteorology*, 33(12), 1516-1525, 1994.

27. *Kumar, P.,* P. Guttorp, and **E. Foufoula-Georgiou**, A probability weighted moment test to assess simple scaling, *J. Stochastic Hydrology and Hydraulics*, 8, 173-183, 1994.

26. Stedinger, J., R. Vogel and **E. Foufoula-Georgiou**, Frequency analysis of extreme events, Chapter 18, in *Handbook of Hydrology*, *McGraw Hill*, 1993.

25. Montgomery, D. and **E. Foufoula-Georgiou**, Channel network source representation for Digital Elevation Models, *Water Resources Research*, 29(12), 3925-3934, 1993.

24. Koutsoyiannis, D. and **E. Foufoula-Georgiou**, A scaling model of storm hyetograph, *Water Resources Research*, 29(7), 2345-2361, 1993.

23. *Helmlinger, K*., *P. Kumar* and **E. Foufoula-Georgiou**, On the use of DEM data for Hortonian and fractal analyses of channel networks, *Water Resources Research*, 29(8), 2599-2613, 1993.

22. *Kumar P.* and **E. Foufoula-Georgiou**, A multicomponent decomposition of spatial rainfall fields: 2. self-similarity in fluctuations, *Water Resources Research*, 29(8), 2533-2544, 1993.

21. *Kumar P.* and **E. Foufoula-Georgiou**, A multicomponent decomposition of spatial rainfall fields: 1. segregation of large and small scale features using wavelet transforms, *Water Resources Research*, 29(8), 2515-2532, 1993.

20. *Kumar,* P. and **E. Foufoula-Georgiou**, A new look at rainfall fluctuations and scaling properties of spatial rainfall, *J. Applied Meteorology*, 32(2), 209-222, 1993.

19. **Foufoula-Georgiou, E**., Self-similarity: theory and applications in hydrology, *EOS Transactions*, American Geophysical Union, 73(49), p. 532, 1992.

18. Georgakakos, K. P. and **E. Foufoula-Georgiou**, Real-time coupling of hydrological and meteorological models for flood forecasting, Chapter 9, in *Recent Advances in the Modelling of Hydrological Systems*, D. Bowles and E. O'Connell (eds.), *Reidl Publ. Co.*, 1991.

17. **Foufoula-Georgiou, E**. and K. P. Georgakakos, Recent advances in space-time precipitation modeling and forecasting, Chapter 3, in *Recent Advances in the Modelling of Hydrological Systems*, D. Bowles and E. O'Connell (eds.), *Reidel Publ. Co.*, 1991.

16. *Andricevic, R*. and **E. Foufoula-Georgiou**, A transfer function approach to sampling network design for groundwater contamination, *Water Resources Research*, 27(10), 2759-2769, 1991.

15. *Andricevic, R.* and **E. Foufoula-Georgiou**, Modeling kinetic non-equilibrium using the first two moments of the residence time distribution, *J. Stochastic Hydrology and Hydraulics*, 5, 155-171, 1991.

14. **Foufoula-Georgiou, E.,** Convex interpolation for gradient dynamic programming, *Water Resources Research*, 27(1), 31-36, 1991.

13. **Foufoula-Georgiou, E**., Review of the book Floods: Hydrological, Sedimentological, and Geomorphological Implications, by K. Beven and P. Carling (eds.), 290 pp., *John Wiley and Sons*, 1989, *Bulletin American Meteorological Society*, 71(7), 1031–1934, 1990.

12. *Kumar, P*. and **E. Foufoula-Georgiou**, Fourier domain shape analysis methods: A brief review and an illustrative application to rainfall area evolution, *Water Resources Research*, 26(9), 2219-2227, 1990.

11. *Wilson, L. L*. and **E. Foufoula-Georgiou**, Regional rainfall frequency analysis via stochastic storm transposition, *J. Hydraulic Engineering*, ASCE, 116(7), 859-880, 1990.

10. **Foufoula-Georgiou, E**. and *L. L. Wilson*, In search of similarities in extreme rainstorms, *J. Geophysical Research*, 95(D3), 2061-2072, 1990.

9. **Foufoula-Georgiou, E**., A probabilistic storm transposition approach for estimating exceedance probabilities of extreme precipitation depths, *Water Resources Research*, 25(5), 799-816, 1989.

8. Kitanidis, P. and **E. Foufoula-Georgiou**, *Reply to Comment on* Error analysis of conventional discrete and gradient dynamic programming, by K. Ponnambalam and B. J. Adams, *Water Resources Research*, 24(12), 2105–2106, 1988.

7. **Foufoula-Georgiou,** E. and P. K. Kitanidis, Gradient dynamic programming for stochastic optimal control of multidimensional water resources systems, *Water Resources Research*, 24(8), 1345-1359, 1988.

6. **Foufoula-Georgiou, E**. and P. Guttorp, Assessment of a class of Neyman-Scott models for temporal rainfall, *J. Geophysical Research*, 92(D8), 9679-9682, 1987.

5. **Foufoula-Georgiou, E**. and D. P. Lettenmaier, A Markov renewal model for rainfall occurrences, *Water Resources Research*, 23(5), 875-884, 1987.

4. Kitanidis, P. K. and **E. Foufoula-Georgiou**, Error analysis of conventional discrete and gradient dynamic programming, *Water Resources Research*, 23(5), 845-858, 1987.

3. **Foufoula-Georgiou, E**. and T. T. Georgiou, Interpolation of binary series based on discrete-time Markov chain models, *Water Resources Research*, 23(3), 515-518, 1987.

2. **Foufoula-Georgiou, E**. and P. Guttorp, Compatibility of continuous rainfall occurrence models with discrete rainfall observations, *Water Resources Research*, 22(8), 1316-1322, 1986.

1. **Foufoula-Georgiou, E**. and D. P. Lettenmaier, Continuous-time versus discrete-time point process models for rainfall occurrence series, *Water Resources Research*, 22(4), 531-542, 1986.

BOOKS, NATIONAL ACADEMIES NRC REPORTS, EDITED VOLUMES

1. **Foufoula-Georgiou, E. and P. Kumar (eds), *Wavelets in Geophysics*, Academic Press, 373 pages, 1994.**
2. NRC *Challenges and Opportunities in the Hydrologic Sciences.* Washington, DC: The National Academies Press, 2012.
3. NRC Progress and Priorities of US Weather Research and Research to Operations *When Weather Matters: Science and Service to Meet Critical Societal Needs.* Washington, DC: The National Academies Press, 2010.
4. NSF Advisory Committee for Geosciences. *GEO Vision Report.* Arlington, VA: National Science Foundation, October 2009.
5. NRC Committee to Assess the National Weather Service Advanced Hydrologic Prediction Service

Initiative, National Research Council. *Toward a New Advanced Hydrologic Prediction Service (AHPS).* Washington, DC: The National Academies Press, 2006.

6. NRC Committee on Hydrologic Science. *Report of a Workshop on Predictability & Limits-To-Prediction in Hydrologic Systems.* Washington, DC: The National Academies Press, 2002.
7. National Research Council. *Envisioning the Agenda for Water Resources Research in the Twenty-First Century.* Washington, DC: The National Academies Press, 2001.
8. Hornberger, G.M., J.D. Aber, J. Bahr, R.C. Bales, K. Beven, E. Foufoula-Georgiou, G. Katul, J.L. Kinter III, R.D. Koster, D. P. Lettenmaier, D. McKnight, K. Miller, K. Mitchell, J.O. Roads, B.R. Scanlon, and E. Smith. *A Plan for a New Science Initiative on the Global Water Cycle.* Washington, DC: U.S. Global Change Research Program, 2001.
9. NRC Committee on Risk Analysis and Uncertainty in Flood Damage Reduction Studies, National Research Council. *Risk Analysis and Uncertainty in Flood Damage Reduction Studies.* Washington, DC: The National Academies Press, 2000.
10. Foufoula-Georgiou, E. and C. Stark (editors), "Stochastic Transport and Emergent Scaling on Earth's surface", special collection of papers, in progress, *J. Geophysical Research – Earth Surface*, 2009
11. Foufoula-Georgiou, E. and A. Tsonis (editors), "Space-time Variability and Dynamics of Rainfall", A special collection of papers, Reprinted from *J. Geophysical Research -- Atmospheres*, 1997.
12. Foufoula-Georgiou, E. and P. Kumar, (editors), *Wavelets in Geophysics*, Academic Press, 373 pages, 1994.

PAPERS PRESENTED IN CONFERENCES

There are over 400 papers that have been presented in major international conferences including American Geophysical Union (AGU), European Geosciences Union (EGU), Chapman Conferences, International Association of Hydrologic Sciences, International Conference on Precipitation, etc. Abstracts are published and available on the web.

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COLLABORATORS

K. Droegemeier (Meteorology, U of Oklahoma), T. Georgiou (EE, U of California Irvine), P. Guttorp (Statistics, U of Washington), D. Koutsoyiannis (Hydrology, NTUA, Greece), G. Parker (Sediment transport, U of Illinois UC), 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, EPFL), C. Kummerow (Atmospheric Sciences, Colorado State University), S. Yuter (Meteorology, NCSU), I. Zaliapin (Mathematics, U of Nevada, Reno), W. Dietrich (Geomorphology, U of California, Berkeley), A. Arneodo (Turbulence, Ecole Normale Superieure de Lyon, France), S. Roux (Turbulence, Ecole Normale Superieure de Lyon, France), C. Stark (Mathematical Geomorphology, University of Columbia), M. Power (Ecology, U of California, Berkeley), M. Ghil (Atmospheric Dynamics, Ecole Normale Superieure, 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, Amy Hansen, Zi Wu, Yannis Dialynas

Present Advisees

PhD: Zeinab Takbiri (UMN), Brandon Sloan (UMN), Antonios Mamalakis (UCI), Lawrence Vulis (UCI)

Research Associates: Anthony Longjas, Alejandro Tejedor, Simon Papalexiou, Clement Guilloteau

Foreign PhD Student External Advisor/Examiner

Davide Ceresetti, University of Grenoble (PhD, 2005); Athansios Paschalis, ETH (PhD, 2013); Niannian Fan, Tsinghua University (PhD, 2014); Nicola Durighetto (MS, 2018)

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 Characterisitcs*", 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, **"***Mutliscale 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

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NSF - Belmont Forum – DELTAS (lead PI; 7 countries)	2013-2017	$2.0 M ($750K US part)
NASA – Global Precipitation Program (lead PI)	2016-2019	$350,000
NSF – National Research Training (co-PI)	2017-2020	$2.5 M