

Ellen Marie Douglas, PE, PG, PhD

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Environmental, Earth and Ocean Sciences
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EDUCATION and LICENSURE

Ph.D. WATER RESOURCES ENGINEERING, Tufts University	2002
PROFESSIONAL GEOLOGIST, State of New Hampshire, License No. 278	2002
PROFESSIONAL ENGINEER, State of New Hampshire, Serial No. 9758	1998
M.S. CIVIL ENGINEERING, University of New Hampshire	1994
B.S. in HYDROLOGY, University of New Hampshire, GPA 3.94/4.00	1991
Summa Cum Laude, University Honors in Hydrology	

AWARDS

EXCELLENCE IN TEACHING	
Environmental, Earth and Ocean Sciences Dept, University of Massachusetts Boston	2010
TOP REFEREE for 2009, Journal of Hydrology	2010
OUTSTANDING ENVIRONMENTAL EDUCATION LEADERSHIP,	
Massachusetts Association of Conservation Commissions (MACC)	2010
OUTSTANDING GRADUATE RESEARCHER in ENGINEERING, Tufts University	2002
US EPA Science To Achieve Results (STAR) Graduate Fellowship	2000/2001
Tufts WATERSHED Center Fellowship	2000
OUTSTANDING STUDENT PAPER AWARD, Hydrology Section, American Geophysical Union	2000

RESEARCH EXPERIENCE

ASSISTANT PROFESSOR, Hydrology

Environmental, Earth and Ocean Sciences, College of Mathematics and Science

University of Massachusetts, Boston, Massachusetts

Sept 2006 to present

Research involves the analysis of local to global scale hydrologic processes and the impacts of human activities on the hydrologic cycle. Specific research activities include quantifying and mapping global irrigation and non-sustainable water use, investigating the impacts of moisture fluxes from irrigation on land-atmosphere interactions in India, regional trends in hydroclimatic variables, monitoring river restoration activities and promoting sustainable water management by assessing proper economic valuation of environmental flows.

RESEARCH SCIENTIST

Water Systems Analysis Group, Complex Systems Research Center

University of New Hampshire, Durham, New Hampshire

July 2002 to Aug 2006

Supervisor: Dr. Charles J. Vörösmarty

Participating in research related to water resource assessments and the interactions between human activities, hydrology and climate. Research topics include water resource availability and non-sustainable water use, the impact of irrigated agriculture on land-atmosphere interactions, human vulnerability to hydrologic changes, water balance and water transport modeling, and anthropogenic disturbances to the hydrologic cycle.

POST-DOCTORAL RESEARCH FELLOW

DEAS, Harvard University, Cambridge, Massachusetts

Feb 2002 to July 2002

Supervisor: Dr. Ana P. Barros

Short-term appointment to develop a new method for estimating the probable maximum precipitation (PMP) and the risk associated with extreme precipitation events using the multifractal characteristics of precipitation time series. Also investigated the presence of climate change impacts on the hydrology of the Paraíba basin in Brazil.

RESEARCH HYDROLOGIST (Part-time)**U.S. Geological Survey, Water Resources Division, Northborough, Massachusetts**

Sep 2000 to Feb 2001

Supervisor: Dr. William Alley

Research objectives included expanding a nationwide network of index wells for monitoring climatic changes, evaluating the presence of regional trends in groundwater data and identifying a predictive link between groundwater levels and drought. Also involved in estimating hydraulic properties of fractured bedrock.

GRADUATE RESEARCH ASSISTANTSHIPS**Tufts University, Medford, Massachusetts**

Sep 1998 to Jan 2002

Dissertation: *The behavior of floods and low flows in the United States.*

Thesis Advisor: Dr. Richard M. Vogel

NH Water Resources Research Center (WRRC), Durham, New Hampshire

Jan 1992 to Jun 1994

Master's Thesis: *The Transport and Fate of Nitrogen at a Farm and Yard Waste Composting Facility*

Thesis Advisor: Dr. Thomas Ballesterio

Quantified nitrogen transport and fate in the vadose zone and a nitrogen mass balance for composting waste.

HONORS SENIOR THESIS: *Estimating Groundwater Recharge*

Sept 1990 to May 1991

Department of Earth Sciences, University of New Hampshire, Durham, New Hampshire

Thesis Advisor: Dr. S. Lawrence Dingman

CURRENT FUNDING

Massachusetts Environmental Trust: Monitoring dam removal in Massachusetts: Towards a regional river restoration strategy. PI Douglas, Jul 1, 2011 through Jun 30, 2012, \$35,000.

NOAA Climate and Society Interactions (CSI)-Coasts: Overcoming the obstacles and capitalizing on the incentives for climate change adaptation in coastal environmental justice communities, PI Douglas (UMB), co-Is: Kirshen (Tufts), Paolisso (UMaryland), Wiggin (UHI), Sep 1, 2011 through Aug 31, 2013, \$299,971.

NASA Terrestrial Hydrology Program: The history of agricultural irrigation expansion: developing useful datasets of global irrigated area and irrigation water use from remote sensing and hydrologic modeling. PI Douglas, co-Is Frolking (UNH) and Friedl (UBM) Oct 1, 2007-Sep 30, 2010. \$549,798 (UMB portion: \$205,455)

PROFESSIONAL EXPERIENCE**ENVIRONMENTAL ENGINEER****Haley & Aldrich, Inc., Manchester, New Hampshire (part-time)**

May 1999 to present

GEI Consultants, Inc., Concord, New Hampshire (full-time)

Mar 1995 to Aug 1998

FREE-LANCE CONSULTANT

Jun 1992 to Aug 2001

Southeastern Sand and Gravel, Lee, NH: Hydrogeologic characterization and conceptual design services.**Madbury Water Board, Madbury, NH:** Survey of MTBE concentrations in groundwater.**Pembroke Water Works, Pembroke, NH:** Installation of municipal drinking water supply well.**Pembroke Water Works, Pembroke, NH:** Source area delineation and groundwater reclassification.**UNH/Durham Water Treatment Plant, Durham, NH:** Source area delineation and protection program.**Southeastern Sand and Gravel, Lee, NH:** Potential groundwater resource investigation.**Madbury Water Board, Madbury, NH:** Survey of radon and VOC concentrations in groundwater.**Lower Mt. Washington Valley Secure Landfill, Conway, NH:** Monitoring gaseous emissions.**Madbury Water Board, Madbury, NH:** Monitoring of contamination at Transfer Station.**Barrington Sand and Gravel, Barrington, NH:** Potential groundwater resource investigation.**NHDOT, Dover, NH:** Hydrodynamic and geomorphic effects of widening the Scammel Bridge opening.**HYDROLOGIC FIELD ASSISTANT**

Aug 1988-Dec 1990

U.S. Geological Survey-Water Resources Division, Bow, NH**TEACHING EXPERIENCE****ASSISTANT PROFESSOR**

Environmental, Earth and Ocean Sciences, University of Massachusetts, Boston

Sept 2006 to present

Fluvial hydrology, Quantitative Hydrology, and Statistics for Environmental and Geographic Sciences.

ADJUNCT INSTRUCTOR

Sep 1998 to May 2005

Civil and Environmental Engineering, Tufts University, Medford, Massachusetts

College of Engineering and Physical Sciences, University of New Hampshire, Durham, New Hampshire

New England College, Henniker, New Hampshire

Sep 1994 to Dec 1995

Undergraduate and graduate level courses taught included Groundwater Hydrology, Engineering Hydrology, Hazardous Waste Management, Introduction to Contaminant Transport Modeling, Open Channel Flow, and Computers and the Environment (freshman-level course). Student evaluations available upon request.

PUBLICATIONS in review or preparation (*denotes student author)

- Kuhl, L., Kirshen, P., **E. Douglas**, M. Paolisso, C. Watson, M. Ruth, and J. Wiggin, Challenges in Using Coastal Zone Evacuation as an Adaptation Option to Climate Change in Environmental Justice Communities, *Journal Climate*, anticipated submission, Jun 2012.
- O’Brion, K. *, **E. Douglas** and A. Christian, Biomonitoring the Eel River headwaters restoration project, Plymouth, Massachusetts, *Freshwater Biology*, anticipated submission, Aug 2012.
- Simpson, K. E. *, **E. M. Douglas**, J. F. Limbrunner, G. Özertan, D. Wisser and D. Terkla, in preparation, The environmental and socioeconomic impacts of large-scale irrigation in southeastern Turkey, *Journal of Environmental Management*, in preparation.
- Salmon, J. M. *, M Friedl, D. Sulla-Menashe, A. Sibley, D. Bolton, S. Frolking, **E. Douglas**, and M. Ozdogan, Mapping Global Irrigated Lands with MODIS, *Global Ecology and Biogeography*, in preparation.
- Sun, E. *, **E. Douglas** and D. Terkla, Water rights trading and willingness to pay survey: A case study in the Yellow River basin in China, in preparation.
- Carpenter, E. *, **E. Douglas** and G. Gill, Modeling the impacts of intensive irrigation on groundwater in southwestern Punjab state, India, in preparation.
- E. M. Douglas**, B. Fradkin*, S. Kichefski*, and C. Goodale* , Monitoring and modeling changes in flow and sediment transport in Red Brook, a small coastal stream in southeastern, Massachusetts, in preparation.

PUBLICATIONS peer-reviewed (*denotes student author)

- Paolisso, M., **E. Douglas**, A. Enrici*, Kirshen, P. and M. Ruth, Environmental Justice and Climate Change: Knowledge and Adaptation among African American Communities in the Chesapeake Bay Region, *Weather, Climate and Society*, accepted for publication, Feb 2012.
- Hillman, B. *, **E. M. Douglas** and D. G. Terkla, Sustainable Water Use and Economic Valuation: A Case Study of the Yakima River in Washington, in review, *J. Environmental Management*, accepted for publication, Jan 2012.
- Douglas, E.**, P. Kirshen, M. Paolisso C. Watson, A. Enrici* and M. Ruth, Coastal flooding and climate change: impacts and adaptations for an environmental justice community in Boston, Massachusetts, *Mitigation and Adaptation Strategies for Global Change*, DOI 10.1007/s11027-011-9340-8, 2012.
- Douglas, E. M** and C. A. Fairbank*, Is precipitation in New England becoming more extreme? A statistical analysis of extreme rainfall in Massachusetts, New Hampshire and Maine and updated estimates of the 100-year storm *J. Hydrologic Engineering*, 16 (3):203-217, 2011.
- Wisser, D., **E. M. Douglas**, B. Fekete and C. J. Vörösmarty. Blue and green water: The significance of local water resources , special issue of *J. Hydrology*, 384 (1-2): 264-275, 2010.
- Douglas, E. M.**, J. M. Jacobs, and D. M. Sumner, Calculated and Measured Potential Evapotranspiration across Land Uses in Florida, *J. Hydrology*, 373 (3-4): 366-376, 2009b.
- Douglas, E. M.**, A. Beltran-Przekurat, D. S. Niyogi, R.A. Pielke, Sr., and C. J. Vörösmarty. Simulating Changes in Land-Atmosphere Interactions From Expanding Agriculture and Irrigation in India and the Potential Impacts on the Indian Monsoon, *Global and Planetary Change*, 67, (1-2): 117–128, 2009a.
- Wisser D, S Frolking, **EM Douglas**, BM Fekete, CJ Vörösmarty, AH Schumann. Global Irrigation Water Demand: Variability and Uncertainties Arising from Agricultural and Climate Data Sets, *Geophysical Research Letters*, VOL. 35, LXXXXX, doi:10.1029/2008GL035296, 2008.
- Kirshen, P., C. Watson, **E. Douglas**, A. Gontz, J. Lee, and Y. Tian. Coastal Flooding in the Northeastern USA under High and Low GHG Emission Scenarios, *Mitigation and Adaptation Strategies for Global Change*, 13:437–451, 2008.
- Roy, S. S., R. Mahmood, D. Niyogi, S. A. Foster, K. G. Hubbard, **E. M. Douglas** and R. A. Pielke, Sr. Impacts of the Agricultural Green Revolution Induced Land Use Changes on Air Temperatures in India, *J. Geophysical Research*, 112, D21108, doi:10.1029/2007JD008834, 2007.
- Douglas, E. M.**, S. Wood, K. Sebastian, C. J. Vörösmarty, K. M. Chomitz and T. P. Tomich. Policy implications of a pan-tropic assessment of the simultaneous hydrological and biodiversity impacts of deforestation, *Water Resources*

- Management*, 21 (1):211-232, 2007.
- Douglas, E. M.** and R.M. Vogel, The Behavior of the Flood of Record for Basins in the U.S., *Journal of Hydrologic Engineering*, 11 (5): 482-488, 2006.
- Douglas, E. M.**, D. Niyogi, S. Frolking, J. B. Yeluripati, R. A. Pielke, Sr., N. Niyogi, C. J. Vörösmarty, and U. C. Mohanty (2006), Changes in moisture and energy fluxes due to agricultural land use and irrigation in the Indian Monsoon Belt, *Geophys. Res. Lett.*, 33, L14403, doi:10.1029/2006GL026550, 2006.
- Frolking S, J. B. Yeluripati, and **E. Douglas**. New district-level maps of rice cropping in India: a foundation for scientific input into policy assessment, *Field Crops Research*, 98(2-3):164-177, 2006.
- Vörösmarty, C. J., **E.M. Douglas**, P. A. Green and C. Revenga, Geospatial indicators of emerging water stress: an application in Africa, *Ambio*, 34 (3): 230-236, 2005a.
- Douglas, E.M.**, and A.P. Barros, Probable maximum precipitation estimation using multifractals: applications to the eastern United States, *Journal of Hydrometeorology*, 4 (6):1012-1024, 2003.
- Douglas, E.M.**, R.M. Vogel and C.N. Kroll, Impact of streamflow persistence on hydrologic design, *Journal of Hydrologic Engineering*, 7 (3):220-227, 2002.
- Douglas, E.M.**, R.M. Vogel and C.N. Kroll, Trends in flood and low flows in the United States: impact of spatial correlation, *Journal of Hydrology*, 240(1-2): 90-105, 2000.
- Ballesterio, T.P., and **E.M. Douglas**, Comparison between the nitrogen fluxes from composting farm wastes and composting yard wastes. *Trans. of ASAE*, 39(5): 1709-1715, 1996.
- Czepiel, P., **E. Douglas**, R. Harriss, and P. Crill, Measurements of N₂O from composted organic wastes. *Environmental Science & Technology*, 30(8): 2519-2525, 1996.

BOOK CHAPTERS

- Douglas, E. M.**, M. Finlayson, C. Revenga and A. Frankic, Coastal Systems and Freshwater, Chapter 10 in *Seas, Society and Human Well-being*, R. Bowen, M. Depledge and L. Fleming, eds., Wiley Blackwell Publishing, forthcoming.
- Kirshen, P., E. Douglas, M. Paolisso, and A. Enrici. "Cities and integrated water planning: Complexities of climate change." In H.A. Karl, L. Scarlett, J.C. Vargas-Moreno, M. Flaxman (Eds.), *Restoring Lands - Coordinating Science, Politics, and Action*. New York: Springer, 2011.
- Mecikalski, J. R., D. M. Sumner, J. M. Jacobs, C. S. Pathak, S. J. Paech and **E. M. Douglas**, Use of Visible Geostationary Operational Meteorological Satellite Imagery in Mapping Reference and Potential Evapotranspiration over Florida, Chapter 5 in *Evapotranspiration*, In Tech, Open Source Publishing, 2010.
- Vörösmarty, C.J., C. Leveque, C. Revenga (Convening Lead Authors) Coordinating Lead Authors: Chris Caudill, John Chilton, **Ellen M. Douglas**, Michel Meybeck, Daniel Prager, Chapter 7: Fresh Water Ecosystems. In: *Millennium Ecosystem Assessment, Volume 1: Conditions and Trends Working Group Report*. Island Press, 2005b.
- Walker, Jr., F. R. and **E. M. Douglas**, Identifying hydrologic variability and change for strategic water supply planning and design, In AGU Monograph entitled *Science and Water Resources Issues: Challenges and Opportunities*, R. Lawford and H. Hartmann, editors, Water Resources Monograph 16, American Geophysical Union, 2003.

CONFERENCE PROCEEDINGS & REPORTS

- Douglas, E. M.**, B. Fradkin*, and S. Kichefski*, 2011. Monitoring and modeling changes in flow and sediment transport in Red Brook, a small coastal stream in southeastern, Massachusetts, Year 1 Monitoring Report to the Massachusetts Division of Ecological Restoration, Boston, MA, September 2011.
- Douglas, E. M.** J. F. Limbrunner, G. Özertan, K. E. Simpson* and D. Wisser, Sustainable use of irrigation water: The case of Turkey, Proceedings of The 13th Biennial Conference of the International Association for the study of the Commons (IASC), Hyderabad, India, January 2011.
- Watson, C. and **E. M. Douglas**, Analysis of changes in the 100-year coastal flooding event in Portland, Maine, due to climate change induced sea-level rise, Final report prepared for Casco Bay Estuary Project, August 2009.
- Douglas, E. M.** Is precipitation in northern New England becoming more extreme? A statistical analysis of rainfall time series in Massachusetts, New Hampshire and southern Maine and updated estimates of the 100-year storm. Final Report to the Joseph P. Healey Grant Program, September 2008.
- Douglas, E. M.**, and C. Watson, ANALYSIS OF THE ENVIRONMENTAL ADVANTAGES OF THE BLUEWATER RECYCLER TRUCK, Final report prepared for Bluewater Septic, Inc., June, 2008.
- Member of the Coastal Team contributing to Chapter 2: Coastal Impacts in *Confronting Climate Change in the U.S. Northeast: Science, impacts and solutions*, Frumhoff, P. C., J. J. McCarthy, J. M. Melillo, S. C. Moser and D. J. Wuebbles, eds., UCS Publications, Cambridge, MA, available on-line at <http://www.climatechoices.org/assets/documents/climatechoices/confronting-climate-change-in-the-u-s-northeast.pdf>, July 2007.
- major contributions to Water, a shared responsibility: The United Nations World Water Development Report, UNESCO World Water Assessment Programme, Paris, France, 584 p, 2006.

- Sullivan, C., Vörösmarty, C. Craswell, E., Bunn, S., Cline, S., Heidecke, C., Storygard, A., Proussevitch, A., **Douglas, E.**, Bossio, D., Günther, D., Giacomello, A. M., O'Regan, D. and Meigh, J. 2006. Mapping the links between water, poverty and food security, Report on the Water Indicators workshop held at the Center for Ecology and Hydrology, Wallingford, May 2005.
- Levy, M. A., C. Thorkelson, C. Vörösmarty, **E. Douglas**, and M. Humphreys. Freshwater availability anomalies and the outbreak of internal war: results from a global spatial time series analysis, Human Security and Climate Change Workshop, Asker (near Oslo) Norway, June 2005.
- Douglas, E. M.**, K. Sebastian, C. J. Vörösmarty and S. Wood, The role of tropical forests in supporting biodiversity and hydrologic integrity, *World Bank Policy Research Working Paper No. 3635*, Social Science Research Network, Washington, DC, available on-line at <http://econ.worldbank.org>, 2005.
- Vogel, R.M., **E. Douglas** and A. Castellarin, The Probabilistic Behavior of Extraordinary Floods”, Proceedings of the International Conference on Hydrological Perspectives for Sustainable Development 2005, Indian Institute of Technology, Roorkee, India, Feb 2005.
- Water Indicators: Mapping the Links between Water, Food Policy Implications of a Pan-Tropic Assessment of the Simultaneous Hydrological and Biodiversity Impacts of Deforestation** (co-author) *International Conference on Integrated Assessment of Water Resources and Global Change : A North-South Analysis*, Bonn, February 2005.
- Douglas, E.M.**, R.M. Vogel and J. Heimerdinger, The Behavior of the Flood of Record for Basins in the U.S, *Proceedings of the 2002 EWRI conference*, Roanoke, Virginia, May 2002.
- Douglas, E.M.**, C.D. Race, I.M. Phillips, and M.D. Walters, Modeling contaminated ground water in fractured crystalline bedrock, *Proceedings of Northeast Focus Conference*, National Ground Water Association, 1998.
- Moore, R.B., C.D. Johnson, and **E.M. Douglas**, Geohydrology and water quality of stratified-drift aquifers in the lower Connecticut River basin, Southwestern, NH. *U.S. Geological Survey WRI Report 92-4013*, 1994.

PRESENTATIONS and WORKSHOPS (*denotes student presenter)

- A conceptual framework for estimating the environmental costs and benefits of dam removal** (oral, Oglavie*), National Conference on Engineering and Ecohydrology for Fish Passage, Amherst, MA June 27-29, 2011.
- Freshwater fish and aquatic macroinvertebrate biomonitoring of the Eel River Headwaters Restoration sites in Plymouth, Massachusetts** (oral, O’Brion*), National Conference on Engineering and Ecohydrology for Fish Passage, Amherst, MA June 27-29, 2011.
- Freshwater fish and aquatic macroinvertebrate biomonitoring of the Eel River Headwaters Restoration sites in Plymouth, Massachusetts** (poster, O’Brion*), North American Benthological Society Annual Meeting 2011, Providence RI, May 22-26, 2011.
- Climate Change and Rivers in the Northeast and Massachusetts: what we know and what we don’t**, (KEYNOTE SPEAKER, Douglas), River Monitoring and Climate Change in Massachusetts, Leominster, MA, May 18-19, 2011.
- Freshwater fish and aquatic macroinvertebrate biomonitoring of the Eel River Headwaters Restoration sites in Plymouth, Massachusetts** (oral, O’Brion*), 67th Annual Northeast Fish and Wildlife Conference, Manchester, NH, April 17-19, 2011.
- Climate Change in New England: From Awareness towards Adaptation**, NCSE 2011: Our Changing Oceans, Washington, DC, January 21, 2011.
- Determining Environmental Impacts of Large Scale Irrigation in Turkey.** (poster, Simpson*) American Geophysical Union, Fall 2010 annual meeting, December 2010, San Francisco, CA.
- The Rising Tide in Boston: Sea Level Rise and Coastal Flooding due to Climate change**, (Douglas KEYNOTE SPEAKER), Boston Harbor Sea Level Rise Forum, November 9-10, 2010, Boston, MA.
- Monitoring and Modeling the restoration of Red Brook, a small coastal stream in southeastern Massachusetts**, (oral, Douglas), 66th Annual Northeast Fish and Wildlife Conference, April 26, 2010
- Is precipitation in northern New England becoming more extreme?** (Oral, Douglas) MA Water Resources Research Center conference, April 2010, Amherst MA.
- Monitoring and Modeling the restoration of Red Brook, a small coastal stream in southeastern Massachusetts** poster (Oral, Douglas), MA Water Resources Research Center conference, April 2010, Amherst MA.
- Conceptual Framework for Estimating the Costs and Benefits of Dam Removal**
Case studies: Northeastern Massachusetts, (Oral, Oglavie*), MA Water Resources Research Center conference, April 2010, Amherst MA.
- Water Rights Trading between Upstream and Downstream Users in the Yellow River Basin, China.** (poster, Sun*), MA Water Resources Research Center conference, April 2010, Amherst MA.
- A Physically-based and Policy-relevant River Classification Scheme for Sustainable Water and Ecosystem Management Decisions**, (poster, Simpson*), MA Water Resources Research Center conference, April 2010, Amherst MA.

- Distributional Impacts of Climate Change and Adaptation Options for Marginalized Communities: Place-based Research in Boston, Massachusetts and the Eastern Shore, Maryland**, (oral, Douglas), Association of American Geographers, April, 2010, Washington, D.C
- The Rising Tide in Boston: project coastal flooding under climate change**, (oral, Douglas), WSSS Seminar, Tufts University, Feb 2010, Medford, MA.
- Climate Change: no longer a matter of belief**, (oral, Douglas), sponsored by the Norwegian Embassy and Clean Air-Cool Planet, Climate Change forums in Charlotte, NC and Richmond, VA, Feb 2010.
- Patterns of Oversubscribed Water Services: Implications for Groundwater**, (oral, Douglas), Fall meeting American Geophysical Union, Dec 2009, San Francisco, CA.
- Teaching science to science teachers: Lessons taught and lessons learned**, (oral, Douglas), Fall meeting, American Geophysical Union, Dec 2009, San Francisco, CA.
- Increased Coastal Flooding due to Climate Change: Potential Impacts and Feasible Solutions**, Invited panelist, Annual meeting of NESTVAL, Nov 2009, Salem, MA.
- Impact of Projected Coastal Flooding due to Climate Change on Massport properties**, invited presentation to Massport managers, Nov 2009, Massport headquarters, Boston, MA
- Impacts of Climate Change on Extreme Precipitation and Coastal Flooding in New England**, Invited, American Water Resources Association, National Capitol Region Chapter, Sep 24, 2009, Washington, DC.
- Coastal Flooding and Environmental Justice: Identifying Vulnerable Communities and Feasible Adaptation Strategies for the Boston Metro Area**, (Oral, Douglas), Coastal Zone 2009: Revolutionary Times-Catching the Wave of Change, sponsored by NOAA, July 2009, Boston, MA.
- Monitoring and Modeling the restoration of Red Brook, a small coastal stream in southeastern Massachusetts** (poster, Douglas), July 2009, Coastal Zone 2009: Revolutionary Times-Catching the Wave of Change, sponsored by NOAA, Boston, MA.
- Coastal Flooding and Environmental Justice: Identifying Vulnerable Communities and Feasible Adaptation Strategies for the Boston Metro Area**, (Oral, Goodwin*), Association of American Geographers 2009 Annual Meeting, March 2009, Las Vegas, NV.
- The Rising Tide in Boston: sea level rise and coastal flooding due to climate change**, Symposium on Climate Change and the Marine Environment, Invited panelist, Co-sponsored by New England Aquarium and Woods Hole Oceanographic Institution, February 2009, Boston, MA.
- Accounting for climate change: the 100-year design storm now and in the future**, (Oral, Douglas), New England Water Environment Association, January 2009, Boston, MA
- Monitoring and Modeling the Hydrological Impacts of Stream Restoration in Red Brook, a small coastal stream in southeastern Massachusetts**, (Oral, Kichefski*), Water Resources Research Conference, April 2009, Amherst, MA.
- Monitoring the restoration of Red Brook, a small coastal stream in southeastern Massachusetts** (poster, Kichefski*), Geological Society of America, Northeast Chapter, March 2009, Portland ME.
- Modeling the Hydrological Impacts of Stream Restoration in Red Brook, a small coastal stream in southeastern Massachusetts**, (Oral, Fradkin*), Geological Society of America, Northeast Chapter, March 2009, Portland ME.
- Monitoring the restoration of Red Brook, a small coastal stream in southeastern Massachusetts**, (poster, Douglas), AGU Fall 2008, December 2008, San Francisco, CA.
- The Rising Tide in the Northeast: the impact of climate change on coastal flooding**, invited speaker, EPA, Region 1 headquarters, May 2008.
- The Rising Tide in Boston: the impact of climate change on coastal flooding**, invited speaker, New England Women in Real Estate (NEWIRE), April 2008.
- The Rising Tide in Boston: the impact of climate change on coastal flooding**, invited speaker, City of Boston, March 2008.
- Confronting Climate Change in the U.S. Northeast: Science, Impacts and Solutions** (invited speaker), 2nd Annual Sustainable Development Conference, American Institute of Architects, DE Chapter, December 2007, Lewes, DE
- Confronting Climate Change in the U.S. Northeast: Science, Impacts and Solutions** (invited speaker), Massachusetts Climate Action Network, November 2007, Cambridge, MA
- The impact of irrigation on land-atmosphere interactions and Indian monsoon precipitation** (invited speaker), ESA/SER Joint Meeting, Aug 2007, San Jose CA.
- Hydrology at different scales: from College Brook to the globe** (oral, Douglas), New England section of the Geological Society of America, March 2007, Durham, NH.
- Considering the Role of Aerosols and Land - Atmosphere Interactions Related to Agriculture and Urbanization in Climate Studies**, (oral). Association of American Geographers Annual meeting, March 2006, Chicago.
- Rethinking risk assessment for catastrophic rainfall along the Gulf Coast** (oral, Douglas), AGU Fall meeting, Dec 2006, San Francisco.
- Changes in moisture and energy fluxes due to groundwater-based irrigation in the Indian Monsoon Belt** (poster, Douglas). AGU Fall meeting, Dec 2006, San Francisco.

Security, and Poverty, (Oral, Douglas), Global Water Systems Project workshop, Center for Ecology and Hydrology, Wallingford, May, 2005.

Highlighting water scarcity and socioeconomic impacts with high-resolution global runoff fields (invited speaker), *Joint UNESCO-WCRP Invited Workshop on Applicability of Climate Research and Information for Water Resource Management in Semi-Arid and Arid Regions* to be held in Cairo, Egypt, April, 2005.

The Role of Tropical Forests in Supporting Biodiversity and Hydrological Integrity: A Synoptic Overview (poster, Douglas), *Working Forests in the Tropics*, Gainesville, Florida, USA, February 13-15, 2005.

Behavior of the Flood of Record in the US, BHS 2004, London, England, July 2004

Pan-tropic Physical Hydrology: Activity 1 Final, BNPP/ICRAF Mtg, Washington, DC, December, 2003.

Indicators and their Application in River Basin Assessment (invited), IARBA, Nairobi, Kenya, November 2003.

Assessment of Water Vulnerability in Africa (invited), UNEP, Nairobi, Kenya, October, 2003.

A Geospatial Approach to Assessing Water Stress in Africa (invited), MODSIM 2003, Townsville, Australia, July 2003.

Pan-tropic Physical Hydrology: Activity 1 Update, BNPP/ICRAF Mtg, Washington, DC, April, 2003.

Geospatial approach to Water Resources Issues, IFPRI, Washington, DC, April, 2003.

Geospatial approach to Water Resources Issues, NOAA CEOS Mtg, Washington, DC, April, 2003.

Pan-tropic Physical Hydrology: Activity 1 Approach, BNPP/ICRAF Mtg, Chiang Mai, Thailand, January, 2003.

Geospatial Estimation of Virtual Water: preliminary results (invited), Virtual Water Expert Meeting, IHE, Delft, the Netherlands, December 2002.

Probable maximum precipitation estimation using multifractals, AGU, Washington, DC, May, 2002.

Surface water-groundwater interactions (invited), NH NRS Annual Mtg, Concord, NH, February, 2002.

The role of data dependence in hydrologic analysis (invited), USGS, Reston, VA, December 2001.

Information requirements for strategic water supply planning and design (invited), AGU, Boston, MA, May 2001.

Impact of streamflow persistence on hydrologic design, ASCE, Orlando, FL, May, 2001.

Trends in flood and low flows in the U.S., AGU Spring Meeting, Washington, DC, 2000.

Modeling contaminated ground water in fractured crystalline bedrock, NGWA, Las Vegas, NV, 1998.

Nitrogen Transport and Fate at a Farm and Yard Waste Composting Facility, AIH, Denver, CO, 1995.

Nitrogen Transport and Fate at a Farm and Yard Waste Composting Facility, NGWA, Burlington, VT, 1994.

ACADEMIC SERVICE

INTERIM GRADUATE PROGRAM DIRECTOR , EEOS, UMass Boston	Sep 2011 to present
SURFACE WATER COMMITTEE MEMBER (invited), American Geophysical Union	2010 to present
ECOHYDROLOGY COMMITTEE MEMBER , American Geophysical Union	2008-2009
MEMBER, GRADUATE PROGRAM in URBAN PLANNING AND COMMUNITY DEVELOPMENT PROPOSAL , UMass Boston	June – December 2010
MEMBER, DEAN REVIEW COMMITTEE , CSM, UMass Boston	Spring 2011
COORDINATOR, INTERNAL REVIEW BOARD , EEOS, UMass Boston	Apr 2009 to present
CHAIR, GRADUATE ADMISSIONS COMMITTEE , EEOS, UMass Boston	Dec 2006 – Aug 2011
MEMBER, INTEGRATED SCIENCE CENTER COMMITTEE , UMass Boston	Jan 2008 - present
MEMBER, CHAIR SEARCH COMMITTEE , EEOS, UMass Boston	Dec 2007 - May 2008
REPRESENTATIVE, PROFESSIONAL, ACADEMIC AND TECHNICAL (PAT) COUNCIL University of New Hampshire	Dec 2005-Jun 2006
DEAN SEARCH COMMITTEE College of Engineering and Physical Science (CEPS), University of New Hampshire	Jan to Apr 2000

MEMBERSHIPS

American Society of Civil Engineers, Senior Member
American Geophysical Union, Member
River Management Society, Member