

## R. Heath Kelsey

University of Maryland Center for Environmental Science

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### Education

University of South Carolina, Arnold School of Public Health	Ph.D.	2006
University of South Carolina, Arnold School of Public Health	MSPH	2000
St. Mary's College of Maryland	B.A.	1988

### Appointments

2015-Present	Adjunct Faculty, Charles Darwin University Research Institute for Environment and Livelihoods (RIEL)
2015-2015	RIEL Visiting Research Fellow, Charles Darwin University, Darwin Australia
2013-Present	Program Director and Science Integrator, Integration and Application Network. Associate Research Scientist, University of Maryland Center for Environmental Science
2011-2103	Program Manager and Science Integrator, Integration and Application Network. Associate Research Scientist, University of Maryland Center for Environmental Science
2009-2011	Science Integrator, Integration and Application Network. Assistant Research Scientist, University of Maryland Center for Environmental Science
2008-Present	Adjunct Faculty, University of South Carolina Arnold School of Public Health
2006-2009	Ecological Modeler, NOAA's Cooperative Oxford Laboratory, JHT Incorporated
2002-2006	GIS Manager and GIS Laboratory Manager, University of South Carolina Belle W Baruch Institute for Marine and Coastal Sciences
2000-2002	Research Associate, University of South Carolina Center for Environmental Policy

### Goals

Advance our understanding of how science can be taken up and applied in environmental decision-making through stakeholder engagement processes, including multi and transdisciplinary science, synthesis, and communication. Improve applications of practical indicators that fully integrate economic, cultural, and social data with environmental assessment. Teach and advise graduate students on ecosystem evaluation and synthesis assessment techniques, and stakeholder engagement approaches.

### Publications

- Marion Glaser, Annette Breckwoldt, Tim Carruthers, Simon Costanzo, Donald L. Forbes, R. Heath Kelsey, Ramesh Ramachandran, Selina Stead. A Framework for the Analysis of Small Islands to Support Coastal Change Governance. Submitted to *Environmental Conservation*.
- Vanessa Vargas, R. Heath Kelsey, William Dennison, Harald Jordahl, and Charles Somerville. The Mississippi River Watershed report card as a tool for transdisciplinary collaboration toward holistic ecosystem based management. In preparation.
- Bertule, M., Bjørnsen, P.K., Costanzo, S.D., Ecurra, J., Freeman, S., Gallagher, L., Kelsey, R.H. and Vollmer, D. 2017. Using indicators for improved water resources management - guide for basin managers and practitioners. 82 pp. ISBN 978-87-90634-05-6.
- Rob Ragsdale, Eric Vowinkel, Dwayne Porter, Pixie Hamilton, Ru Morrison, Josh Kohut, Bob Connel, R. Heath Kelsey, and Phil Trowbridge. 2011. Successful integration efforts in water quality from the integrated ocean observing system regional associations and the national water quality monitoring network. *Marine Technology Society Journal* 45(1): 19-28.

- R. Heath Kelsey and Ben Longstaff. Spatial Analysis. 2010. Book Chapter In: *Handbook of Coastal Assessment*. Longstaff, Carruthers, and Dennison (Eds) IAN Press, Cambridge, MD.
- R. Heath Kelsey, Geoffrey I. Scott, Dwayne E. Porter, Don Edwards, Thomas C. Siewicki. Improvements to shellfish harvest area closure decision-making using GIS, remote sensing, and predictive models. Online. *Estuaries and Coasts* (2010) 33:712-722. doi: 10.1007/s12237-010-9264-7
- R. Heath Kelsey, Laura F. Webster, David J. Kenny, Jill R. Stewart, and Geoffrey I. Scott. 2008. Spatial and temporal variability of ribotyping results at a small watershed in South Carolina. *Water Research* 42 (2008): 2220-2228. doi:10.1016/j.watres.2007.11.038
- R. Heath Kelsey, Dwayne E. Porter, Geoffrey I. Scott, David L. White, and Matthew J. Neet. 2004. Measuring land use effects on fecal Pollution using GIS and regression modeling. *Journal of Experimental Marine Biology and Ecology*. 298 (2004) 197-209.
- Margaret Vo, Dwayne E. Porter, G. Thomas Chandler, R. Heath Kelsey, Samuel Walker and Benjamin E. Jones. 2004. Integrating techniques to assess photo-induced toxicity of PAH within an urbanized estuary. *Ecology and Society*. 9(5):3. [online] URL: <http://www.ecologyandsociety.org/vol9/iss5/art3>
- R. Heath Kelsey, Geoffrey I. Scott, Dwayne E. Porter, Brian C. Thompson, and Laura F. Webster. 2003. Using multiple antibiotic resistance and land use characteristics to determine sources of fecal coliform bacterial pollution. *Journal of Environmental Monitoring and Assessment* 81:337-348.

#### **Recent Presentations/Conference Proceedings (2013-2017)**

- Evolving ecosystem health report cards to address issues of scale, acceptance and engagement*. Coastal and Estuarine Research Federation, Providence Rhode Island. November 2017.
- Shared visioning and stakeholder engagement through ecosystem health report cards*. International RiverSymposium, Brisbane, Australia. September 2017. R. Heath Kelsey, Simon Costanzo, Bill Dennison, Michele Thieme, Caroline Donovan, Alex Fries, Harald Jordahl.
- The Continuing Evolution of the Report Card Process: Principles for Practice*. Recorded for the Conference on Report Cards. Brisbane Australia April 2017. R. Heath Kelsey and W. C. Dennison.
- Visual Science Communication: Tools for Stakeholder Engagement*. CommOcean2016, Bruges, Belgium. December 2016. R. Heath Kelsey.
- Future Cards, Tools for Integrated River Basin Management*. International RiverSymposium, Delhi, India November 2016. R. Heath Kelsey, Simon Costanzo, Andre Abassi, Sara Freeman, Louise Gallagher.
- Evaluating Restoration Success in the context of Multiple Interests: A Report Card for the Mississippi River Watershed*. Coastal and Estuarine Research Federation, Portland, Oregon. November 2015. R. Heath Kelsey, Bill Dennison, Bill Nuttle, Jane Thomas, Jordy Jordahl, Charles Sommerville.
- Stakeholders engaged to measure goal achievement in the Mississippi River Basin Report Card*. International RiverSymposium Brisbane Australia September 2014. R. Heath Kelsey, Jordy Jordahl, Bill Dennison, Bill Nuttle, Caroline Wicks, Brianne Walsh, Jonathan Higgins, Michael Reuter, Charles Somerville, Rainy Shorey
- Ecosystem Health Report Cards: Research Management and Engagement*. Australian National University, Northern Australian Research Unit Seminar Series, April 2015. R. Heath Kelsey
- Model result and software comparisons in Myrtle Beach using Virtual Beach and R regression toolboxes*. Matthew Neet, R. Heath Kelsey, Dwayne Porter, Dan Ramage, and Adrian Jones. *Proceedings of the South Carolina Water Resources Conference 2015*.
- A Mississippi River Report Card Supports Integrated River Basin Management*. Conference on Ecological and Ecosystem Restoration. July 2014, New Orleans, Louisiana. R. Heath Kelsey, Bill Dennison, Bill Nuttle, Jordy Jordahl.

*A holistic coastal assessment and reporting framework that balances economic, societal, and environmental perspectives.* Coastal and Estuarine Research Federation, San Diego, CA, November 2013. R. Heath Kelsey, W. C. Dennison, E. C. Wicks, J. E. Thomas, S. D. Costanzo.

*Visual Science Communication.* Atlantic Coast Fisheries Communication Group. January 2013, Alexandria, Virginia.

*A holistic coastal assessment and reporting framework that balances economic, societal, and environmental perspectives.* Coastal and Estuarine Research Federation, San Diego, CA, November 2013. R. Heath Kelsey, W. C. Dennison, E. C. Wicks, J. E. Thomas, S. D. Costanzo.

*An assessment and reporting framework for integrated river basin management in the Mississippi River watershed.* International River Symposium, Brisbane, Australia, September 2013. R. Heath Kelsey, W.C. Dennison.

### **Teaching**

MEES 618A. Transdisciplinary science for environmental decision making. University of Maryland Center for Environmental Science. Co-Instructor with Bill Dennison. Fall 2017.

MEES 698Y. Science For Environmental Management. University of Maryland Center for Environmental Science. Guest Lecturer. Spring 2017, Spring 2015, Spring 2013.

ENHS 775. Resource Management and Environmental Impact Assessment. University of South Carolina Arnold School of Public Health. Guest Lecturer. Spring 2017, Spring 2015, Spring 2013.

IAN Science Communication Course. Short courses on science communication principles and application for environmental science and management. Instructor. Various. 2009-2017.

### **Student Committees and Review**

Kim Jones. PhD. University of South Carolina. Exp. 2019. Committee Member.

Vanessa Vargas. PhD. University of Maryland Center for Environmental Science. Exp. 2018. Committee member.

Lisa Wickliffe. PhD. University of South Carolina. 2013. Decision-Support Tool for Residential Pesticides in the South Carolina Coastal Zone. Committee member.

Darrel Dodgens. MS. University of South Carolina. 2011. Modeling development thresholds causing fecal bacteria use impairment. Committee member.

Michelle Johnston. PhD. University of South Carolina. 2010. Bacterial communities in the American alligator in southeastern US estuaries. Committee member.

External Reviewer – PhD Thesis review for coastal and water resources students at Anna University, Chennai, India. Three students to date: 2014, 2015, 2016.

### **Synergistic Activities and Service**

Session Organizer – Get the Grade. River Basin Report Card Game. International RiverSymposium, Brisbane, Australia, September 2017.

Belmont Forum program impact synthesis process facilitation. San Francisco, California December 2016.

Scientific Steering Committee, Future Earths Coasts. Institutional Partner Representative. Science Implementation Plan Development Meeting, Taipei, Taiwan July 2016.

Session Organizer – Get the Grade. River Basin Report Card Game. International RiverSymposium, Delhi, India, September 2016.

Session Organizer – Ecosystem Health Report Cards. International RiverSymposium, Brisbane, Australia, September 2015.

Session Organizer – Story-telling for scientists. Coastal and Estuarine Research Federation, Portland, OR, November 2015.

Session Organizer – Science Communication Strategies for Ecosystem-Based Management. Coastal and Estuarine Research Federation, San Diego, CA, November 2013.

Session Co-convenor – Integrated Assessment and Environmental Report Cards as Tools for Ecosystem Restoration. National Conference on Ecosystem Restoration, July 2013.

Session Co-Chair – Ecosystem Based Management of Human Pathogens in Chesapeake Bay CRC Ecosystem Based Management Conference, March 2009.

Reviewer – Ecological Indicators 2018.

Reviewer – *Journal of South Carolina Water Resources* 2017.

Reviewer – *Water* 2014.

Reviewer – South Carolina Water Resources Center Competitive Grants Program. 2014.

Reviewer – *Water Research* 2010.

Reviewer – *Environmental Management* 2008-2009.

Reviewer – *Water Practice* 2008.

Reviewer – National Estuarine Research Reserve Graduate Research Fellowship Program 2008.

Reviewer – *Environmental Science and Technology* 2006, 2007.

Reviewer – *International Journal of Environment and Pollution* 2004.

Reviewer – USGS Water Resources Research Institutes Competitive Grants Program 2003.

Reviewer – Draft Stormwater Utility for Beaufort County, SC. Lowcountry Institute 2003.

US Peace Corps Volunteer. Community Development and Water Supply. Papua New Guinea. 1995-1998.

### **Awards and Recognition**

Professional Achievement Award, JHT Incorporated (NOAA Contractor) – 2007.

Doctoral Student Award, University of South Carolina Arnold School of Public Health – 2006

Walter B. Jones NOAA OCRM Award for Excellence in Graduate Study – 2005.

University of South Carolina ENHS Department Outstanding Student Award – 2005.

Best Graduate Poster, Southeast Estuarine Research Society Conference, Charleston, SC – 2005.

Invited Speaker – 2005 Virgin Islands Water Resources Research Institute Conference.

Invited Speaker – 2004 Society for Environmental Toxicology and Chemistry World Conference.

Invited Speaker – 2003 University of the Virgin Islands Research Seminar Series.

### **Dissertation**

*Fecal Pollution Modeling, Source Identification, and Management In The Southeastern Coastal Zone.*

Dissertation Committee: Dr. Geoffrey Scott, Dr. Dwayne Porter, Dr. Tom Siewicki, Dr. Don Edwards, and Dr. Hank McKellar

### **Recent Collaborators**

Andrew Ellmore, University of Maryland Center for Environmental Science, MD USA

April Patterson, US Army Corps of Engineers, FL USA

Bill Dennison, University of Maryland Center for Environmental Science, MD USA

Bill Nuttle, University of Maryland Center for Environmental Science, Ottawa Canada

Dwayne Porter, University of South Carolina Arnold School of Public Health, SC USA

Eric Davidson, University of Maryland Center for Environmental Science, MD USA

Eva Abal, University of Queensland, Brisbane Australia

Frank Porkilo, Maryland Coastal Bays Program, MD USA

Irina Ize Lema, Universidad Nacionale Autónoma de Mexico, Merida, Mexico

Jack Gentile, Harwell, Gentile and Associates, MA USA

James Udy, Healthy Waterways, Brisbane, Australia

Jennifer Koss, NOAA, MD USA  
Jordy Jordahl, The Nature Conservancy, WI USA  
Karin Krchnak WWF, DC USA  
Kirstin Kenyon, Queensland State Government, Brisbane, Australia.  
Larry McKinney, Texas A&M University Corpus Christi, TX USA  
Mark Harwell, Harwell, Gentile and Associates, FL USA  
Martin LeTissier, University College of Cork, Cork Ireland  
Michael Douglas, University of Western Australia, Perth, Australia  
Michael Reuter, The Nature Conservancy, IL USA  
Michele Thieme, WWF, DC USA  
Nyssa Henry, Queensland State Government, Brisbane, Australia  
Pam Wiley, Myer Memorial Trust, OR USA  
Paolo Salles, Universidad Nacional Autónoma de Mexico, Merida, Mexico  
Patricia Gorman, South Florida Water Management District  
Patrick Biber, University of Southern Mississippi, MS USA  
Porfirio Alvarez, Universidad Juárez Autónoma de Tabasco, Villahermosa, Mexico  
Ramesh Ramachandran, India Ministry of Environment and Forests, Chennai, India  
Simon Costanzo, University of Maryland Center for Environmental Science, MD USA