

**Kelly L. Cole**

University of Maine Darling Marine Center  
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**Research interests**

Numerical modeling of ocean circulation, coastal and estuarine dynamics, river plumes and other buoyancy driven flow, geophysical fluid dynamics, climate dynamics and coupled climate modeling, biological-physical interactions, sustainability science.

**Education**

Ph.D. in Oceanography, May 2014 , Texas A&M University – College Station, TX, Dissertation chair: Robert D. Hetland, Dissertation title: *A numerical study of the mid-field river plume*.  
M.S. in Oceanography, August 2008, Texas A&M University – College Station, TX, Thesis chair: Steven F. DiMarco , Thesis title: *Low-frequency variability of currents in the deepwater eastern Gulf of Mexico*.  
B.S. in Applied Mathematical Sciences, *cum laude*, December 2004, Texas A&M University – College Station, TX.

**Employment**

Postdoctoral Research Associate, Advisors: Damian Brady and Huijie Xue , School of Marine Sciences and Senator George J. Mitchell Center for Sustainability Solution, University of Maine, University of Maine, Orono, ME, January 2015 – present.  
Postdoctoral Research Associate, Advisor: Ping Chang , Department of Oceanography, Texas A&M University, College Station, TX, May 2014 - December 2014.  
Graduate Assistant Lecturer, Department of Oceanography, Texas A&M University, College Station, TX, Spring 2014.  
Graduate Research Assistant, Department of Oceanography, Texas A&M University, College Station, TX, Summer 2006 – Fall 2013.  
Graduate Teaching Assistant, Department of Oceanography, Texas A&M University, College Station, TX, Spring & Fall 2006, Spring 2008.

**Awards**

NSF S-STEM Scholar, Spring 2010 – Spring 2013.  
Selected student for the University of Washington Friday Harbor Laboratories Coastal and Estuarine Fluid Dynamics summer course, Summer 2009.

**Memberships**

Coastal and Estuarine Research Federation, 2015 – present; Sigma Xi Research Society, 2008 – present; The Oceanography Society, 2007 – present; American Geophysical Union, 2006 – present.

**Publications**

**Cole, K.L.**, D.G. MacDonald, G. Kakoulaki and R.D. Hetland (in prep), River plume source-front connectivity. *Ocean Modelling*.  
**Cole, K.L.**, and R.D. Hetland (2015). The effects of rotation and river discharge on net mixing in small mouth Kelvin number plumes. *Journal of Physical Oceanography*.

- Wang, J., MacDonald, D.G., Orton, P.M., **Cole, K.L.**, and Lan, J. (2015). The Effect of Discharge, Tides, and Wind on Lift-Off Turbulence. *Estuaries and Coasts*, 1-15.
- Cole, K.L.**, and S.F. DiMarco (2010), Low-frequency variability of currents in the deepwater eastern Gulf of Mexico, U.S. Dept. of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA, OCS Study MMS 2010-015, 136 pp.

**Recent conference presentations, \* Invited**

- Smith, S., B. McGreavy, S. Roy, B. Gerard, **K.L. Cole**, D. Rothenheber, S. Jones, D. Brady, C. Petersen and B. Smith, *Downeast drainage – Examining and communicating the dynamics of bacteria pollution events in the Gulf of Maine*, American Geophysical Union (AGU) Fall Meeting, December 2015, San Francisco, CA. (poster)
- Cole, K.L.** and D.C. Brady, *Tracking pathogenic bacteria in the Webhannet River estuary, Wells National Estuarine Research Reserve*, Coastal and Estuarine Research Federation (CERF) Conference, November 2015, Portland, OR. (poster)
- Cole, K.L.**, *Linking freshwater and marine ecosystems and physics*, Mentoring Physical Oceanography Women to Increase Retention (MPOWIR) Pattullo Conference, October 2015, Warrenton, VA.
- Cole, K.L.**, and D.C. Brady, *A bio-physical coupled model of the Chester River estuary, Chesapeake Bay*, Gordon Research Conference on Coastal Ocean Modeling, June 2015, Biddeford, ME. (poster)
- \***Cole, K.L.**, G. Kakoulaki, D.G. Macdonald and R.D. Hetland, *The effects of rotation and river discharge on net mixing in small mouth Kelvin number plumes*, Gordon Research Seminar on Coastal Ocean Modeling, June 2015, Biddeford, ME.
- \***Cole, K.L.**, E. Urquhart, D.C. Brady, V. Cooper, S. Jones, M. Hartwick and J. Lemaire, *Modeling variation in pathogenic bacteria concentrations in coastal and estuarine waters*, Maine Sustainability and Water Conference, March 2015, Augusta, ME.
- \***Cole, K.L.**, and D.C. Brady, *Using numerical tools to track pathogenic bacteria*, Maine Fisherman's Forum, February 2015, Rockland, ME.
- Cole, K.L.**, and R.D. Hetland, *A numerical study of the mid-field river plume*, Estuarine and Coastal Modeling (ECM) Conference, November 2013, San Diego, CA.
- \***Cole, K.L.**, and R.D. Hetland, *River plume source-front connectivity*, River Plume Mixing Workshop, October 2013, Timberline Lodge, Mt. Hood, OR.
- Cole, K.L.**, and R.D. Hetland, *River plume source-front connectivity*, Physics of Estuaries and Coastal Seas (PECS) Symposium, August 2012, Manhattan, NY.
- \***Cole, K.L.**, and R.D. Hetland, *How does a river become an ocean? Understanding plume mixing, spreading and the transition from the near to far field*, Ocean University of China – Physical Oceanography Lab Seminar, May 2012, Qingdao, China.

**Recent workshops attended**

- Finite Volume Coastal Ocean Model (FVCOM) user group workshop, October 2015, Halifax, N.S., Canada.
- Maine Sustainability Summit, hosted by Working Films, September 2015, Camden, ME.
- NOAA North Atlantic Regional Team (NART) linking freshwater and marine ecosystems and physics workshop, August 2015, Norrie Point Estuarine Research Reserve, Rhinebeck, NY.
- Cobscook Bay sea lice workshop with Cooke Aquaculture, Information transfer meeting for Sentinel Cage Study, organized by Michael Pietrak, April 2015, Machiasport, ME.