

# Emily Kumpel

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## EDUCATION

- Ph.D (2013) Civil and Environmental Engineering, University of California, Berkeley  
Civil Systems Program  
Dissertation: *Water Quality and Quantity in Intermittent and Continuous Piped Water Supplies in Hubli-Dharwad, India*
- M.S. (2007) Civil and Environmental Engineering, University of California, Berkeley  
Civil Systems Program
- B.S. (2006) Mechanical Engineering, Johns Hopkins University

## EXPERIENCE

- 2017-current Assistant Professor, Department of Civil and Environmental Engineering, University of Massachusetts Amherst
- 2015-2016 Senior Research Scientist, Aquaya Institute, Nairobi, Kenya
- 2014-2015 Research Scientist, Aquaya Institute, Nairobi, Kenya
- 2013-2014 Research Associate, Aquaya Institute, Nairobi, Kenya
- 2011, 2013 Graduate Student Instructor, Civil and Environmental Engineering, U.C. Berkeley
- 2010 Consultant, Health Canada
- 2009 Intern, World Health Organization, Geneva, Switzerland
- 2005 Intern, Catholic Relief Services, Antananarivo, Madagascar
- 2005 Research Assistant, University of Dar es Salaam, Tanzania

## RESEARCH AREAS

global WASH (water, sanitation, and hygiene), intermittent piped water supply, distribution system water quality, water quality monitoring, domestic water consumption, water access, sustainability of small community water supplies, information and communication technology for development (ICTD), water safety plans

## PEER-REVIEWED PUBLICATIONS

12. **Kumpel, E.**, C. Woelfe-Erskine, I. Ray, and K. Nelson (2017). Household water access and use in an intermittent piped water distribution system. *Water Resources Research*. *In press*.
11. Misati, A., G. Ogendi, R. Peletz, R. Khush, and **E. Kumpel** (2017). Can Sanitary Surveys Replace Water Quality Testing? Evidence from Kisii, Kenya. *International Journal of Environmental Research and Public Health*. *In press*.
10. Mellor, J., **E. Kumpel**, A. Ercumen, and J. Zimmerman (2016). A Systems Approach to Climate, Water and Diarrhea in Hubli-Dharwad, India. *Environmental Science & Technology*. 50 (23).
9. **Kumpel, E.**, A. Cock-Esteb, M. Duret, D. de Waal, and R. Khush (2016). Seasonal variation in drinking and domestic water sources and quality in Port Harcourt, Nigeria. *American Journal of Tropical Medicine and Hygiene*. 95(1).
8. **Kumpel, E.**, R. Peletz, M. Bonham, and R. Khush (2016). Assessing drinking water quality and water safety management in sub-Saharan Africa using regulated monitoring data. *Environmental Science & Technology* doi:10.1021/acs.est.6b02707.
7. **Kumpel, E.**, R. Peletz, J. Albert, D. de Waal, M. Hirn, A. Danilenko, V. Uhl, A. Daw, and R. Khush (2016). Urban water services in fragile states: An analysis of drinking water sources and quality in Port Harcourt, Nigeria and Monrovia, Liberia. *American Journal of Tropical Medicine and Hygiene* 15 (0766).
6. Peletz, R., **E. Kumpel**, M. Bonham, Z. Rahman, and R. Khush (2016). To what extent is drinking water tested in sub-Saharan Africa? A comparative analysis of regulated water quality monitoring. *International Journal of*

- Environmental Research and Public Health* 13 (3).
5. **Kumpel, E.** and K. Nelson (2016). Intermittent Water Supply: Prevalence, Practice, and Microbial Water Quality. *Environmental Science & Technology* 50 (2).
  4. Ercumen, A., B. F. Arnold, **E. Kumpel**, Z. Burt, I. Ray, K. Nelson, and J. M. Colford Jr. (2015). Upgrading a Piped Water Supply from Intermittent to Continuous Delivery and Association with Waterborne Illness: A Matched Cohort Study in Urban India. *PLoS Medicine* 12(10).
  3. **Kumpel, E.**, R. Peletz, M. Bonham, A. Fay, A. Cock-Esteb, and R. Khush (2015). When are mobile phones useful for water quality data collection? An analysis of data flows and ICT applications among regulated monitoring institutions in sub-Saharan Africa. *International Journal of Environmental Research and Public Health* 12 (9), 10846–10860.
  2. **Kumpel, E.** and K. Nelson (2014). Mechanisms affecting water quality in an intermittent piped water supply. *Environmental Science & Technology* 48(5), 2766–2775.
  1. **Kumpel, E.** and K. Nelson (2013). Comparing Microbial Water Quality in an Intermittent and Continuous Piped Water Supply. *Water Research* 47(14), 5176–5188.

#### PEER-REVIEWED CONFERENCE PROCEEDINGS PUBLISHED

1. **Kumpel, E.**, A. Sridharan, T. Kote, A. Olmos, T. Parikh (2012). *NextDrop: Using human observations to track water distribution*. USENIX Networked Systems for Developing Regions '12, Boston, MA, June 2012

#### REPORTS

1. Kumpel, E., R. Peletz, J. Kisiangani, and R. Khush (2016). “Water Safety Plan Impact Assessment in the Asia Pacific Region”. Report to the World Health Organization. August 2016.
2. Kumpel, E. and R. Khush (2015). “Final Report: Water Quality Testing Study in Port Harcourt, Nigeria”. Report to the World Bank Water and Sanitation Program. 10 December 2015.
3. Kumpel, E., J. Albert and R. Khush (2014). “Final Report: Water Quality Testing Study in Port Harcourt, Nigeria”. Report to the World Bank Water and Sanitation Program. 4 September 2014.

#### TEACHING

University of California, Berkeley - Graduate Student Instructor  
 Spring 2013 Ecological Engineering for Water Quality Improvement (CE 113N)  
 Fall 2011 Introduction to Environmental Engineering (CE 111)  
 Johns Hopkins University - Teaching Assistant  
 Fall 2005 Materials Selection (ME 530.352)

#### SELECTED PRESENTATIONS

1. *Measuring and monitoring urban water systems*. Seminar. Carnegie Mellon University – Rwanda Campus. Kigali, Rwanda, October 2016.
2. *Impact Assessment of Water Safety Plans in the Asia Pacific Region*. Global Water Safety Conference, Puerto Princessa, Palawan, Philippines, April 2016.
3. *Measuring and monitoring urban water systems: Understanding mechanisms of contamination in drinking water supplies*. Invited seminar, University of Virginia, March 2016.
4. *Towards safe and sustainable urban water systems: Understanding mechanisms of contamination in drinking water supplies*. Invited seminar, University of Massachusetts Amherst, March 2016.
5. *Urban water services in fragile states: Water supply and quality in Port Harcourt, Nigeria*. Water and Health: Where Science Meets Policy. University of North Carolina at Chapel Hill. October 2015 [poster].
6. *Mobile platform for water quality data management in Senegal*. 2015 World Water Week, Information technologies for a smarter water future, Stockholm, Sweden, Aug 2015.
7. *Do post-2015 frameworks indicate water quality in sub-Saharan African?* 2015 World Water Week, Implementing the SDGs in the Post-2015 Development Agenda, Stockholm, Sweden, Aug 2015 (poster)
8. *Water quality in Port Harcourt*. Fragile States Review, World Bank, Nairobi, Kenya, Mar 2014
9. *Impact evaluation for switching from intermittent to 24x7 water supply in Hubli-Dharwad, India*. Invited presentation at the World Bank and ICRIER in Delhi, India, July 2013.
10. *Do post-2015 frameworks indicate water quality in sub-Saharan African?* Water and Health, UNC Chapel Hill, NC, Oct 2014.
11. *Monitoring for safe water: Microbial water testing methods and drinking water quality in Africa*. African Water

- Congress, Abidjan, Ivory Coast, Feb 2014.
12. *Evaluation of intermittent versus 24x7 water supply in Hubli-Dharwad, India.* IWA Development Congress, Nairobi, Kenya, Oct 2013.
  13. *Comparing water quality in an intermittent and continuous piped water supply in Hubli-Dharwad, India.* University of Maryland, College Park, MD, Feb 2013.
  14. *The challenge of providing safe water with an intermittently supplied piped water distribution system.* Poster, American Geophysical Union, San Francisco, CA, Dec 2012.
  15. *Comparing water quality in intermittent and continuous piped water supplies in urban India.* Environmental Engineering Seminar at UC Berkeley, Nov 2012.
  16. *NextDrop: Implementation challenges.* Emily Kumpel. WASH in Real Time: Making Better Decisions Through Use of Mobile Applications (workshop). Water and Health, UNC Chapel Hill, NC, Nov 2012.
  17. *NextDrop: Using human observations to track water distribution.* USENIX Networked Systems for Developing Regions '12, Boston, MA, June 2012
  18. *Mechanisms affecting water quality in intermittent piped water distribution systems.* American Water Works Association ACE, Dallas, Texas, June 2012.
  19. *Impact on water quality of the conversation from intermittent to continuous piped water supply in urban South India.* Water and Health, UNC Chapel Hill, NC, Oct 2011. Top Student Abstract.
  20. *Water quality and household behaviors affecting water quality in an intermittent and continuous urban piped water supply.* Singapore Water Week, Singapore, June 2010.
  21. *A volunteer-led effort linking research to development practice to promote safe water and hygiene in slums in India.* WEF: Disinfection, Atlanta, GA, Mar 2009.
  22. *Systematic review of social factors contributing to the sustainability of small community water supplies.* International Small Community Water Supply Network, Kampala, Uganda, Nov 20, 2008.

## HONORS AND AWARDS

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| 2011 | First Place in the Global Social Venture Competition for NextDrop                            |
| 2011 | Winner of the Knight News Foundation Challenge for NextDrop                                  |
| 2011 | Water and Health Conference Top Student Abstract (University of North Carolina, Chapel Hill) |
| 2006 | National Science Foundation Graduate Research Fellowship                                     |
| 2006 | Chancellor's Fellowship for Graduate Study (University of California, Berkeley)              |
| 2006 | First place for the Johns Hopkins University Mechanical Engineering Senior Design Project    |
| 2005 | American Society of Mechanical Engineers Kenneth Andrew Roe Scholarship                      |

## SERVICE ACTIVITIES

### Peer-reviewer:

#### Journals

- Environmental Science and Technology; Journal of Water, Sanitation, and Hygiene for Development; Information Technologies and International Development; International Journal of Hygiene and Environmental Health; International Journal of Environmental Research and Public Health; PLOS ONE; Journal of Environmental Sciences; Environmental Pollution; Water

#### Conferences

- Water and Health Conference (UNC Chapel Hill, 2014)

#### Grants

- Big Ideas at Berkeley Judge (2016)

#### Affiliations

- American Water Works Association; International Water Association; American Society of Mechanical Engineering; American Association of University Women
- Academic honor societies: Tau Beta Pi, Pi Tau Sigma

## COUNTRY-SPECIFIC FIELD RESEARCH EXPERIENCE

India (3 years, residence), Kenya (3 years, residence), Senegal, Nigeria, Uganda, Madagascar, Tanzania, Sri Lanka