

Detlef R.U. Knappe

Department of Civil, Construction, and Environmental Engineering
North Carolina State University

Professional Preparation

University of Illinois, Urbana, IL	Civil Engineering	B.S., May 1989
University of Illinois, Urbana, IL	Environmental Engineering	M.S., May 1991
University of Illinois, Urbana, IL	Environmental Engineering	Ph.D., January 1996

Appointments

2008 – present	Professor, Dept. of Civil, Construction, and Environmental Engineering, NC State University
2013 (1/1-6/30)	Visiting Scholar, US EPA, Research Triangle Park, NC
2002 – 2008	Associate Professor, Dept. of Civil, Construction, and Environmental Engineering, NC State University
2005 (7/1-12/31)	Visiting Scholar, EAWAG, Swiss Federal Institute of Technology (ETH), Zürich, Switzerland
1996 - 2002	Assistant Professor, Department of Civil Engineering, NC State University

Recent/Representative Publications

1. Kovalova, L.; Knappe, D.R.U.; Lehnberg, K., Kazner, K., and Hollender, J. "Removal of highly polar micropollutants from wastewater by powdered activated carbon." *Environ. Sci. Poll. Res.*, 20(6): 3607-3615, 2013.
2. Chen, Y.; D.R.U. Knappe; and M.A. Barlaz. "The Effect of Aging on the Bioavailability of Toluene Sorbed to Municipal Solid Waste Components." *Chemosphere*, 90(2): 251-259, 2013.
3. Dunn, S.E. and D.R.U. Knappe. *Disinfection By-Product Precursor and Micropollutant Removal by Powdered Activated Carbon*. Water Research Foundation: Denver, Colorado, 2013.
4. Matsui, Y.; T. Yoshida; S. Nakao; D.R.U. Knappe; and T. Matsushita. "Characteristics of competitive adsorption between 2-methylisoborneol and natural organic matter on superfine and conventionally sized powdered activated carbons." *Water Research*, 45(16): 4741-4749, 2012.
5. Baeza, A.C. and D.R.U. Knappe. "Transformation Kinetics of Biochemically Active Compounds in Low-Pressure UV Photolysis and UV/H₂O₂ Advanced Oxidation Processes." *Water Research*, 45(15): 4531-4543, 2011.
6. Summers, R.S.; D.R.U. Knappe; and V.L. Snoeyink. 2011. "Adsorption of Organic Compounds." In *Water Quality & Treatment*, 6th ed., J.K. Edzwald (Ed.), McGraw-Hill: New York, NY.
7. Velten, S.; D.R.U. Knappe; J. Traber; H.P. Kaiser; U. von Gunten; M. Boller; and S. Meylan. "Characterization of natural organic matter adsorption in granular activated carbon adsorbers." *Water Research*, 45(13): 3951-3959, 2011.
8. Alpert, S.M.; D.R.U. Knappe; and J.J. Ducoste. "Modeling the UV/hydrogen peroxide advanced oxidation process using computational fluid dynamics." *Water Research*, 44(6): 1797-1808, 2010.
9. Saquing, J.M.; C.D. Saquing; D.R.U. Knappe; and M.A. Barlaz. "Impact of Plastics on Fate and Transport of Organic Contaminants in Landfills." *Environmental Science and Technology* 44(16): 6396-6402, 2010.
10. Saquing, J.M.; L.A. Mitchell; Wu, B.; T.B. Wagner; D.R.U. Knappe; and M.A. Barlaz. "Factors controlling alkylbenzene and tetrachloroethene desorption from municipal solid waste components." *Environmental Science and Technology* 44(3): 1123-1129, 2010.

Synergistic Activities:

- Meeting/Symposium/Committee Leadership:
 - Organizer for special topic session on activated carbon, AWWA Annual Conf., 2013
 - AWWA Activated Carbon Standards Committee Member, 2003-present
 - AWWA Organic Contaminants Research Committee Member, 2000-2005, 2007-present
 - Co-organizer of ACS Symposium “Advances in Adsorption Processes,” Fall 2007-Spring 2008.
 - Technical Advisory Committee member and research advisor for the NCSU Student Chapter of Engineers Without Borders, Fall 2006-present.
 - Project Advisory Committee Member for AwwaRF/Water RF research projects, 1997-present
- Editorships
 - Associate Editor for Water Science & Technology, 2009-2013
 - Topical Editor for Open Access journal Drinking Water Engineering and Science, 2011-present
- Representative Scholarly and Professional Honors
 - Thesis advisor for the 1st place winner in the American Water Works Association Academic Achievement Award competition for the best Master’s Thesis, 2013
 - Outstanding Teacher, NC State University, 2011
 - Thesis advisor for the 2nd place winner in the American Water Works Association Academic Achievement Award competition for the best Master’s Thesis, 2007
 - AWWA Water Science & Research Division Best Poster Award, 2006
 - Bill Horn Kimley-Horn Faculty Award, NC State University, 2003
 - AWWA Water Science & Research Division Best Paper Award, 2001

Collaborators and Co-Editors:

Morton A. Barlaz, NCSU	Steven Shannon, NCSU
Joel J. Ducoste, NCSU	Karl Linden, University of Colorado-Boulder
Francis L. de los Reyes, NCSU	R. Scott Summers, University of Colorado-Boulder
Howard Weinberg, UNC-Chapel Hill	Andrew Lindstrom, US EPA, RTP, NC
Mark A. Nanny, University of Oklahoma	Thomas Speth, US EPA, Cincinnati, OH

Graduate Advisors and Postdoctoral Sponsors:

Vernon L. Snoeyink (University of Illinois, MS and PhD)

Thesis Advisor & Postgraduate-Scholar Sponsor:

(38 total, 23 MS, 9 PhD, 6 post-graduate scholars)

MS: Andrew Rike, 1998, Rike Consulting, AR; David Briley, 1999, Hazen & Sawyer Engineers, NC; Robert Belk, 1999 Hazen & Sawyer Engineers, NC; Neerja Rastogi, 1999, Camp Dresser & McKee, NC; Caleb Taylor, 2000; Steven Gandy, 2000, Municipal Engineering Services Company, NC; Patricia Quinlivan, 2001, URS Corporation, NC; Travis Wagner, 2003, Pure Technologies, MD; Alfred Rossner, 2004, continued for PhD; Lisa Mitchell, 2005, GHD Professional, NC; Isabella Mezzari, 2006, GSI Environmental, TX; Venkata Mandapaka, 2008, CalTrans; Anjali Viswakumar, 2010, US EPA, NC; Qianru Deng, 2010, MWH, WA; Angela Mastropole, 2010, Dewberry, NC; Susan Dunn, 2011, Black & Veatch, MD; Leigh-Ann Dudley, 2012, Dewberry, NC; Meredith Fotta, CDM-Smith, NC; Allison Reinert, Hazen&Sawyer, NC. *Current:* Elisa Arevalo, Amber Greune, Viking Edeback, Rachel Ingham.

PhD: B. Wu, PhD 2002, Rho Inc., NC; L. Li, PhD 2002, California Department of Public Health, CA; Y. Chen, PhD 2003, Novozymes, NC; C. Chun, PhD 2007, VDOT, VA; A. C. Baeza, PhD 2008, Universidad de Concepcion, Chile; A. A. Rossner, PhD 2008, Universidad de Concepcion, Chile; J. M. Saquing, PhD 2009; B. Yuncu, Solutions IES, NC. *Current:* Josh Kearns (Scott Summers, chair).

Postgraduate Scholars: Shannon Bartelt-Hunt, UN Nebraska; Erik Rosenfeldt, Hazen & Sawyer, VA; Koichi Ohno, Osaka University (Japan), Qingdong Qing, Southeast University (China), Zhang Hua, Tongji University (China). *Current:* Mei Sun.