

## **KARL J. ROCKNE, Ph.D., P.E., BCEE, M.ASCE**

---

Associate Dean for Research  
College of Engineering, SEO Room 812  
University of Illinois at Chicago  
851 S. Morgan St., M/C 159  
Chicago, IL 60607-7023

Phone: (312) 413-8918  
E-mail: [krockne@uic.edu](mailto:krockne@uic.edu)

### **EDUCATION**

---

1998 Ph.D. in Environmental Engineering, University of Washington  
1992 M.S. in Environmental Engineering, University of Minnesota  
1990 B.S. in Civil Engineering, University of Minnesota  
**Advisors:** Patrick L. Brezonik (Minnesota), Stuart E. Strand (Washington)

### **POSTGRADUATE ACADEMIC AND BOARD POSITIONS HELD**

---

2021-present Associate Dean for Research, College of Engineering, Univ. of IL-Chicago  
2020-present Board of Directors, Association for Environmental Engineering & Science Professors (AEESP) Foundation  
2017-2021 Director, Environmental Engineering Program, National Science Foundation  
2014-2016 Interim Department Head, Civil and Materials Engineering, Univ. of IL-Chicago  
2012-present Full Professor with Tenure, Civil and Materials Engineering, Univ. of IL-Chicago  
2009-2010 Professeur invité, L'École Nationale Des Ponts et Chaussées, Centre d'Enseignement et de Recherche sur l'Eau, la Ville, et l'Environnement  
2005-2012 Associate Professor with Tenure, Civil and Materials Engineering, Univ. of IL-Chicago  
2000-2005 Assistant Professor, Civil and Materials Engineering, University of Illinois-Chicago  
2000-2000 Research Assistant Professor, Marine and Coastal Sciences, Rutgers University  
1998-2000 Post-Doctoral Research Associate, Dept. of Chemical Engineering, Rutgers University

### **AWARDS/ELECTIONS**

---

2021 Director's Award for Superior Accomplishment for broadening engagement between indigenous communities and researchers, National Science Foundation  
2017 CEPAC Award, for contributions to the Civil Engineering Professional Advisory Council  
2012 Faculty Advisor Award, UIC College of Engineering  
2011 Faculty Advisor Award, UIC College of Engineering  
2008 Teaching Recognition Program Award, Council for Excellence in Teaching and Learning  
2008 College of Engineering Faculty Research Award, UIC College of Engineering  
2006 College of Engineering Faculty Research Award, UIC College of Engineering  
2004-08 CAREER Young investigator award, National Science Foundation  
2003-04 Faculty Scholar, Institute for Environmental Science and Policy, Univ. of IL-Chicago

### **BOARD CERTIFICATION AND PROFESSIONAL ENGINEERING LICENSURE**

---

Board Certified Environmental Engineer, American Academy of Environmental Engineers and Scientists  
Registered Professional Engineer, State of Minnesota (license #40584)

### **PROFESSIONAL SOCIETIES**

---

Elected Member, American Society of Civil Engineers-EWRI (M.ASCE)  
American Institute of Chemical Engineers (AIChE)  
American Geophysical Union (AGU)  
American Chemical Society (ACS)  
Association of Environmental Engineering and Science Professors (AEESP)  
Water Environment Federation (WEF)

### **RECENT EDITORSHIPS (STEPPED DOWN FROM ALL EDITORIAL BOARDS WHILE AT NSF)**

---

2012-2017 Editorial Board, *Proceedings of the Library of Science (PLoS One)* IF: 3.73 (JCR 2012)  
2014-2017 Editorial Board, *Journal of Soils and Sediments (JSS)* IF: 1.97 (JCR 2012)

## **SUCCESSFUL GRANT ACTIVITY (41 TOTAL, \$17 M TOTAL; \$5 M IN DIRECT SUPPORT)**

---

1. "Modeling of Gas Ebullition and Thin Cap Processes" (1/1/2021-12/31/2021). **PI Karl Rockne**. Funding: \$124,429 from EXXON Corp.
2. "Biochar facilitated bioremediation: A green solution for dioxin/furan pollution" (2/1/2021-1/31/2024). **US PI Karl Rockne/ Vietnam PI Dang Thuong Huyen, Vietnam National University**. Funding: \$212,415 from USAID.
3. "Environmental Engineering Program Director IPA" (8/7/2020-8/6/2021). **PI Karl Rockne**. Funding: \$271,032 from the National Science Foundation.
4. "Impact of Non-Aqueous Phase Liquids on Gas Ebullition in Contaminated Sediments Phase IV" (1/1/2020-12/31/2020). **PI Karl Rockne**. Funding: \$109,000 from EXXON Corp.
5. "Environmental Engineering Program Director IPA" (8/7/2019-8/6/2020). **PI Karl Rockne**. Funding: \$271,032 from the National Science Foundation.
6. "RO1: Confined Compression and Image Analysis of Dental Composites" (6/1/2019-5/31/2023). **PI Karl Rockne**. Funding: \$961,855 from the National Institutes of Health National Institute of Dental and Cranial Research (NIH-NIDCR).
7. "Demonstration and Monitoring of Nutrient-Removal Wetlands in the Big Bureau Creek Watershed (North-Central Illinois) PHASE IV" (3/1/2019-2/28/2020). **PI Karl Rockne**. Funding: \$50,669 from the Illinois Nutrient Research & Education Council through The Wetlands Initiative.
8. "Impact of Non-Aqueous Phase Liquids on Gas Ebullition in Contaminated Sediments Phase III" (1/1/2019-12/31/2019). **PI Karl Rockne**. Funding: \$96,484 from EXXON Corp.
9. "Environmental Engineering Program Director IPA" (8/7/2018-8/6/2019). **PI Karl Rockne**. Funding: \$254,538 from the National Science Foundation.
10. "Demonstration and Monitoring of Nutrient-Removal Wetlands in the Big Bureau Creek Watershed (North-Central Illinois) PHASE III" (3/1/2018-2/28/2019). **PI Karl Rockne**. Funding: \$52,502 from the Illinois Nutrient Research & Education Council through The Wetlands Initiative.
11. "Environmental Engineering Program Director IPA" (8/7/2017-8/6/2018). **PI Karl Rockne**. Funding: \$254,538 from the National Science Foundation.
12. "MRI: Acquisition of a Multi-Reaction Mode Inductively Coupled Plasma-Mass Spectrometer for Metal Analysis in Environmental Media "(9/2017-8/2017). **PI's: Karl Rockne (original PI), Kathy Nagy (new PI), Reza Shahbazian-Yassar, Jordi Cabana, Gail Prins, Tolou Shokuhfar**. Funding \$209,946 (~\$41,989 direct) from the National Science Foundation. My move to NSF necessitated changing the PI to Kathy Nagy.
13. "Demonstration and Monitoring of Nutrient-Removal Wetlands in the Big Bureau Creek Watershed (North-Central Illinois) PHASE II" (3/2017-2/2018). **PI Karl Rockne**. Funding: \$61,883 from the Illinois Nutrient Research & Education Council through The Wetlands Initiative.
14. "Impact of Non-Aqueous Phase Liquids on Gas Ebullition in Contaminated Sediments Phase II" (3/2017-6/2018). **PI Karl Rockne**. Funding: \$102,857 from EXXON Corp.
15. "Identifying nitrogen removal limitations in constructed wetlands treating agricultural tile drainage" (2/2017-2/2018). **PIs Mahsa Izadmehr and Karl Rockne**. Funding: \$10,000 (No direct, all for Grad Student) from the Illinois Water Research Center/US Geological Survey.
16. "Industrial Assessment Center for Energy Efficiency, Smart Manufacturing and Cyber Security of IL and Northwestern IN Small and Medium Sized Manufacturing Companies and Water Facilities" (10/1/2016-9/30/2021). **PI's: Lin Li, Farzad Mashayek, Clifford Haefke, Karl Rockne and Venkat Vankatak Krishnan**. Funding \$1,575,000 (~\$78,750 direct) from the US Department of Energy.
17. "C-mode Scanning Acoustic Microscope for Understanding Fundamentals of Failure in Military-Relevant Materials"(9/2016-8/2017). **PI's: Didem Ozevin, Alexander Chudnovsky, Sheng Wei Chi, Eduard Karpov, Karl Rockne, Igor Paprotny, Sushant Anand, David He, Reza Shahbazian-Yassar, Alexander Yarin and Jie Xu**. Funding \$304,997 (~\$24,400 direct) from the Department of Defense Army Research Program.

18. "Computational Fluid Dynamics for the Environmental-Water Resources Engineering Curriculum" (6/2016-6/2017). **PI Sean Vitousek, Ben O'Connor, and Karl Rockne.** Funding: \$8000 (~\$2000 direct) from UIC.
19. "Impact of Non-Aqueous Phase Liquids on Gas Ebullition in Contaminated Sediments" (2/2016-2/2017). **PI Karl Rockne.** Funding: \$67,511 from EXXON Corp.
20. "Demonstration and Monitoring of Nutrient-Removal Wetlands in the Big Bureau Creek Watershed (North-Central Illinois)" (4/2015-4/2017). **PI Karl Rockne.** Funding: \$95,955 from the Illinois Nutrient Research & Education Council through The Wetlands Initiative.
21. "Great Lakes Sediment Surveillance Program" (7/2010-6/2016). **PIs: Karl Rockne (2013), An Li, John Giesy, and Neil Sturchio.** Funding: \$2,000,000 (~\$340,000 direct) from the Environmental Protection Agency (EPA).
22. "BURST: Building Urban Resilience and Sustainable Technology"(1/2012-12/2013). **PI's: Thomas Theis and Isabel Cruz, Co-PIs: Ning Ai, Farhad Ansari, Samuel Dorevitch, Sarah Dunn, Ernesto Indacochea, Kazuya Kawamura, Jane Lin, Emily Minor, Karl Rockne, Eric Welch, David Wise, Moira Zellner.** Funding \$250,000 (~\$10,000 direct) from the UIC Office of the Vice Chancellor for Research.
23. "A linkage Study for Health Effects and Environmental Data" (10/2010-9/2013). **PI's: Leslie Stayner, Karl Rockne, Robert Anderson, Mary Turyk, Judith Graber, and Lorraine Conroy.** Funding \$1,015,743 (~\$132,046 direct) from the US Centers for Disease Control.
24. "Sediment Gas Ebullition Study, Grand Calumet River, Western Branch Reaches 1 and 2" (10/2010-8/2011). **PI Karl Rockne.** Funding \$57,833 from the US Army Corps of Engineers/Environmental Protection Agency Great Lakes National Program Office.
25. "Area of Excellence in Urban Water Infrastructure, Policy, and Infectious Disease"(1/2012-12/2012). **PI's: Samuel Dorevitch, Rachael Jones, Charlotte Joslin, Karl Rockne, Ruxana Sadikot.** Funding \$31,987 (~\$6397 direct) from the UIC Office of the Vice Chancellor for Research and matching funds from the UIC School of Public Health-Environmental and Occupational Health Sciences and the UIC Institute for Environmental Science and Policy.
26. "Source Apportionment of Polycyclic Aromatic Hydrocarbons in Illinois River Sediments" (3/2010-7/2010). **PI: Karl Rockne** Funding: \$5000 (direct) from the Illinois Sustainable Technology Center.
27. MRI: Acquisition of a High Field Magnetic Resonance Imaging System for Science and Engineering Research. (9/2009-8/2012). **PIs: Richard Magin, Michael Ragozzino, Karl Rockne, Tom Royston, and Dan Shonfeld.** Funding: \$1,995,000 (all instrumentation, no direct) from NSF.
28. Sediment ebullition and flux studies at Bubbly Creek, Chicago, IL. **PI: Karl Rockne.** Funding: \$74,026 (direct) from US Army Corps of Engineers.
29. "Collaborative Research: Debromination of PBDEs in Aquatic Sediments" (4/2008-3/2011). **PIs: An Li and Karl Rockne.** Funding: \$368,452 (~\$147,380 direct) from NSF.
30. "ECO-PRO: An Intelligent System for Shipping to Protect the Ecosystem of the Great Lakes" (2006-2008). **PIs: Bing Liu and Karl Rockne.** Funding: \$434,846 (~\$130,453 direct) from the Great Lakes Protection Fund.
31. "Fate Analysis of Polybrominated Diphenyl Ethers in Anaerobic Digester Sludge" (2006-2009). **PIs: Karl Rockne and An Li.** Funding: \$109,452 (direct) from the IL Waste Management and Research Center.
32. "Integrative Graduate Education and Research Traineeship (IGERT): Ecology, Management and Restoration of Integrated Human/Natural Landscapes" (7/2006-6/2011). **PIs: Mary Ashley, Karl Rockne, Steve Forman, and Kayri Havens.** Funding: \$2,810,585 (~\$281,060 direct) from NSF.
33. "Sampling and Analysis of Sediments in Support of The Wetlands Initiative Restoration Activities" (1/2006-12/2006). **PI: Karl Rockne.** Funding: \$7000 (direct) from The Wetlands Initiative.
34. "Geochemical Characterization and Remediation of Contaminant Mixtures in the Subsurface" (9/04-8/06) **PI's: Krishna Reddy, Karl Rockne, Urmila Diwekar, Amid Khodadoust, Kathryn Nagy,**

**Neil Sturchio, Ali Mansoori, An Li.** Funding: \$15,000 (no direct), Institute for Environmental Science and Policy.

35. “CAREER: Active Capping for Contaminated Sediment Remediation” (1/2004-1/2010). **PI: Karl Rockne.** Funding: \$492,431 (direct, includes \$86K matching) from NSF.
36. “Life Cycle and Economic Impacts of Bio-based Production” (9/2003-8/2004). **PI’s: Thomas Theis, Karl Rockne, Urmila Diwekar and John Braden.** Funding: \$99,691 (~19,940 direct) from NSF.
37. “Chlorinated Solvent Remediation with Green Chemistry Solvents” (7/2003-6/2004). **PI: Karl Rockne.** Funding: \$11,774 (direct) from the University of Illinois-Chicago Campus Research Board.
38. “Chronology of PBDE Air Deposition in the Great Lakes from Sedimentary Records” (10/2001-9/2003). **PI’s: An Li, Karl Rockne, and William Mills.** Funding: \$160,000 (~\$40,900 direct) from the Environmental Protection Agency (EPA).
39. “In situ Quantification of Chlorinated Hydrocarbon Mass Flux and Intrinsic Remediation Using Fiber Optic Biosensors” (10/2001-9/2002). **PI’s: James Jawitz, Karl Rockne and Farhad Ansari.** Funding: \$95,384 (~\$41,492 direct) from the National Science Foundation (NSF).
40. “Biocomplexity: The Roles of Resources, Competition and Predation in Microbial Degradation of Organic Matter” (10/2001-9/2005). **PI (UIC subcontract): Karl Rockne.** Funding: \$268,165 (direct) from the National Science Foundation (NSF). Total budget \$2.1 million.
41. “Stimulation of Organic Contaminant Biodegradation Through the Amendment of Anaerobic Electron Acceptors to Estuarine Sediments” (8/1999-2/2002). **PI: Karl Rockne.** Funding: \$126,259 (direct) from NOAA through the Cooperative Institute for Coastal and Estuarine Environmental Technology.

#### RESEARCH VESSEL EXPERIENCE

2014	Chief Science Officer, Lake Erie sediment survey (5/27-31) USEPA R/V Lake Guardian
2013	Chief Science Officer, Lake Ontario sediment survey (7/23-26) USEPA R/V Lake Guardian
2012	Chief Science Officer, Lake Huron sediment survey (9/15-20) USEPA R/V Lake Guardian
2011	Chief Science Officer, Lake Superior sediment survey (5/23-29) USEPA R/V Lake Guardian
2010	Chief Science Officer, Lake Michigan sediment survey (9/16-20) USEPA R/V Lake Guardian
2003	Scientist, Lake Huron summer survey, USEPA R/V Lake Guardian

#### PUBLICATIONS (114 TOTAL: 93 JOURNAL AND PROCEEDINGS ARTICLES PUBLISHED, 2 DISSERTATIONS AND 19 TECHNICAL REPORTS)

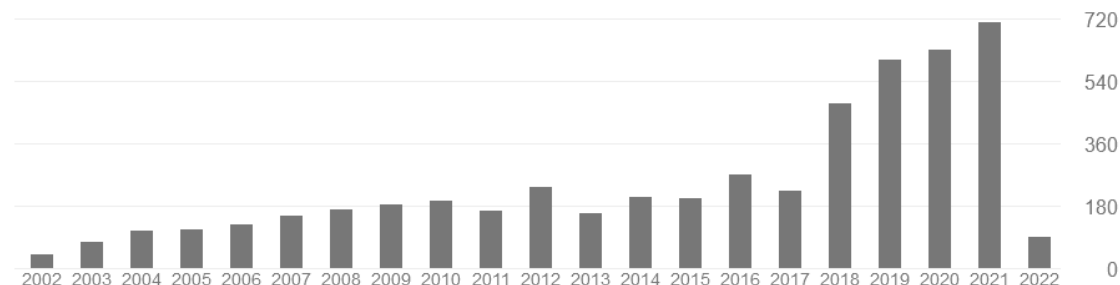
**METRICS:** *Google Scholar:* (as of 1/2022): Total Citations=5275; *i10* Index=56; *h* index=33

<http://scholar.google.com/citations?user=wUE1Pu0AAAAJ&hl=en>

**#56 (top 4%) worldwide in the field of *Bioremediation***

**#79 (top 6%) worldwide in the field of *Environmental Biotechnology***

**#220 worldwide in the field of *Environmental Engineering***



**Citation metrics.** Shown are citations by year.

1. Viana, P. Z. and K. J. Rockne (2021) Fundamentals of Ebullition Facilitated NAPL and Contaminant Transport. *Appl. NAPL Sci. Rev.* **9**(6).

2. Yang, L. H. Zhang, A. Li, K. J. Rockne, K. Xu, Y. Wu, X. Xu, S. Chen, Y. Hu, X. Wang, and D. Chen (2021) Halogenated flame retardants in sediments from the Upper Laurentian Great Lakes: Implications to long-range transport and evidence of long-term transformation. *Sci. Tot. Environ.* 788:147908. <https://doi.org/10.1016/j.scitotenv.2021.147908>
3. Khazraee, M. and K. J. Rockne (2020) Gas Ebullition from Petroleum Hydrocarbons in Aquatic Sediments: A Review. *J. Environ. Management.* **271**: 110997-111020.
4. Sherman, J., C. Thiel, A. MacNeill, M. Bilec, R. Dubrow, M. J. Eckelman, H. Hopf, R. Lagasse, J. Bialowitz, A. Costello, F. McGain, R. Stancliffe, P. Anastas, L. Anderko, M. Baratz, S. Barna, U. Bhatnagar, J. Burnham, G. Cai, A. Cassels-Brown, A. F. Cimprich, H. Cole, L. Coronado-Garcia, B. Duane, G. Grisotti, A. Hartwell, V. Kumar, A. Kurth, M. Leapman, D. Morris, M. Overcash, A. Parvatker, D. Pencheon, A. Pollard, B. J. Rockne, B. L. Sadler, B. Schenk, T. Sethi, S. Sussman, J. Thompson, J. M. Twomey, S. Vermund, D. Vukelich, N. Wasim, D. Wilson, S. Young, J. Zimmerman (2020) The Green Print: Agenda for the Advancement of Environmental Sustainability in Healthcare. *Resources, Conservation, and Recycling.* **161**:104882.
5. Guo, J., Z. Li, P. Ranasinghe, K. J. Rockne, N. C. Sturchio, J. P. Giesy, and A. Li (2019) Halogenated flame retardants in sediments from the Upper Laurentian Great Lakes: Implications to long-range transport and evidence of long-term transformation. *J. Haz. Mat.* **640**:121346. <https://doi.org/10.1016/j.jhazmat.2019.121346>
6. Oskoe, S. K., J. Drummond, and K. J. Rockne (2019). The Effect of Esterase Enzyme on Aging Dental Composites. *Journal of Biomedical Materials Research Part B: Applied Biomaterials.* **2018:9999B:1–7** <https://doi.org/10.1002/jbm.b.34313>
7. Yin, K., M. P. Z. Viana, and K. J. Rockne (2019). Organic contaminated sediments remediation with active caps: Nonlinear adsorption unveiled by combined isotherm and column transportation studies. *Chemosphere.* **214**(1):710-718. <https://doi.org/10.1016/j.chemosphere.2018.09.122>
8. Zou, B., K. J. Rockne, S. Vitousek, and M. Noruzoliaee (2018) Ecosystem and Transportation Infrastructure Resilience to Climate Change in the Great Lakes. *Environment: Science and Policy for Sustainable Development.* **60**(5):18-31. <https://doi.org/10.1080/00139157.2018.1495508>
9. Yin, K., P. Z. Viana, and K. J. Rockne (2018). Modeling Organic Contaminant Transport Through Reactive Media. *ASCE J. Environmental Engineering.* **144**(9): [https://doi.org/10.1061/\(ASCE\)EE.1943-7870.0001429](https://doi.org/10.1061/(ASCE)EE.1943-7870.0001429)
10. Corcoran, M., M. Sherif, C. Smalley, A. Li, K. Rockne, J. Giesy, and N. Sturchio (2018) Accumulation rates, focusing factors, and chronologies from depth profiles of 210Pb and 137Cs in sediments of the Laurentian Great Lakes. *J. Great Lakes Res.* **44**(4):693-704. <https://doi.org/10.1016/j.jglr.2018.05.013>
11. Bonina, S. M., G. Codling, M. B. Corcoran, J. Guo, J. Giesy, A. Li, N. Sturchio, A. Li, and K. J. Rockne (2018) Temporal and Spatial Differences in the Deposition of Organic Matter and Black Carbon in Lake Michigan Sediments Over the Period 1850-2010. *J. Great Lakes Res.* **44**(4):705-715. <https://doi.org/10.1016/j.jglr.2018.03.001>
12. Li, A., J. Guo, Z. Li, T. Lin, S. Zhou, H. He, P. Ranasinghe, N. Sturchio, K. Rockne, and J. Giesy (2018) Legacy Polychlorinated Organic Pollutants in the Sediment of the Great Lakes. *J. Great Lakes Res.* **44**(4):682-692. <https://doi.org/10.1016/j.jglr.2018.02.002>
13. Codling, G., J. Giesy, T. Tse, H. Peng, K. J. Rockne, N. Sturchio, P. Jones, and A. Li (2018) Spatial and temporal trends in poly- and per-fluorinated compounds in the Laurentian Great Lakes Erie, Ontario, and St. Clair. *Environ. Pollut.* **237**(6):396-405.
14. Zamanpour, M. K. and K. J. Rockne (2018). A Mechanistic Model for Gas Ebullition in the Presence of NAPLs in Sediments. In: World Environmental and Water Resources Congress 2018: Hydraulics and Waterways, Water Distribution Systems Analysis, and Smart Water. Sri Kamojjala, Ed., pp 109-118. <https://doi.org/10.1061/9780784481424.012>.
15. Izadmehr, M. and K. J. Rockne (2018) “Pocket Wetlands for Nutrient Removal in Tile-Drained Agriculture”. In: World Environmental and Water Resources Congress 2018: Watershed Management, Irrigation and Drainage, and Water Resources Planning and Management. Sri Kamojjala, Ed., pp 404-414. <https://doi.org/10.1061/9780784481400.038>.

16. Codling, G., S. Bonina, N. Sturchio, M. Corcoran, K. J. Rockne, K. Ji, A. Li, Prof J. Giesy, T. Lin, S. Hosseini, and H. Peng (2018) Current and historical concentrations of poly and perfluorinated compounds in sediments of the northern Great Lakes – Superior, Huron, and Michigan. *Environ. Pollut.* **236**(2):373-381.
17. Viana, P. Z., K. Yin, K. J. Rockne (2018). Comparison of Direct Benthic Flux to Ebullition-Facilitated Flux of Polycyclic Aromatic Hydrocarbons and Heavy Metals Measured in the Field. *J. Soils Sediments.* **18**(4):1729-1742. [https://doi: 10.1007/s11368-017-1893-z](https://doi.org/10.1007/s11368-017-1893-z)
18. Thompson, L. R., J. G. Sanders, et al. and the Earth Microbiome Consortium (2017) Communal Catalogue Reveals Earth's Multiscale Microbial Diversity. *Nature.* 551(7681):457. [https://doi:10.1038/nature24621](https://doi.org/10.1038/nature24621).
19. Cao, D., J. Guo, Y. Wang, Z. Li, K. Liang, M. B. Corcoran, S. Hosseini, S. M.C. Bonina, K. J. Rockne, N. C. Sturchio, J. P. Giesy, J. Liu, A. Li, G. Jiang (2017). Organophosphate Esters in the Sediments of the Great Lakes. *Environmental Science and Technology*, **51**(3):1441-1449.
20. Guo, J., Z. Li, P. Ranasinghe, S. Bonina, S. Hosseini, M. B. Corcoran, C. Smalley, K. J. Rockne, N. C. Sturchio, J. P. Giesy, and A. Li (2017). Spatial and Temporal Trends of Polyhalogenated Carbazoles in Sediments of Upper Great Lakes: Insights Into Their Origin. *Environmental Science and Technology*, **51**(1):89-97. [http://dx.DOI/10.1021/acs.est.6b06128](http://dx.doi.org/10.1021/acs.est.6b06128).
21. Peng, H., C. Chen, J. Cantin, D. M. V. Saunders, J. Sun, S. Tang, G. Codling, M. Hecker, S. Wiseman, P. D. Jones, A. Li, K. J. Rockne, N. C. Sturchio, J. P. Giesy (2016) Untargeted Screening and Distribution of Organo-Iodine Compounds in Sediments of Lake Michigan and the Arctic Ocean. *Environmental Science and Technology.* **50**(18):10097–10105.
22. Buckley, D., M. Izadmehr, J. Kostel, and K. J. Rockne (2016) Constructed Wetlands to Reduce Nutrients from Runoff in Croplands: The Implications for Urban Stormwater. *Stormwater.* **17**(7):4.
23. Guo, J., Z. Li, P. Ranasinghe, S. Bonina, S. Hosseini, M. B. Corcoran, C. Smalley, R. Kaliappan, Y. Wu, D. Chen, A. L. Sandy, K. J. Rockne, N. C. Sturchio, J. P. Giesy and A. Li (2016) Occurrence of Atrazine and Related Compounds in Sediments of the Upper Great Lakes. *Environmental Science and Technology.* **50**(14):7335–7343.
24. Guo, L., K. Ding, K. J. Rockne, M. Duran, and B. P. Chaplin (2016) Bacterial Disinfection at a Sub-Stoichiometric Titanium Dioxide Reactive Electrochemical Membrane. *J. Hazardous Materials.* **319**: 137–146. <http://dx.doi.org/10.1016/j.jhazmat.2016.05.051>.
25. Zou, Y. A. C. Aziz-Schwanbeck, H. Wei, E. R. Christensen, K. J. Rockne, and A. Li (2016) Debromination of PBDEs in Arkansas Water Bodies Analyzed by Positive Matrix Factorization. *Environmental Science and Technology.* **50**(3):1359–1367.
26. Peng, H., C. Chen, J. Cantin, D. M. V. Saunders, J. Sun, S. Tang, G. Codling, M. Hecker, S. Wiseman, P. D. Jones, A. Li, K. J. Rockne, N. C. Sturchio, J. P. Giesy (2015) Untargeted Screening and Distribution of Organo-Bromine Compounds in Sediments of Lake Michigan. *Environmental Science and Technology.* **50**(1):321–330.
27. Peng, H., C. Chen, D. M. V. Saunders, J. Sun, S. Tang, G. Codling, M. Hecker, S. Wiseman, P. D. Jones, A. Li, K. J. Rockne, J. P. Giesy (2015) Untargeted Identification of Organo-bromine Compounds by Ultra-High Resolution Mass Spectrometry with the Data-Independent Precursor Isolation and Characteristic Fragment (DIPIC-Frag) Method. *Analytical Chemistry.* **87**(20):10237–10246. Manuscript [https://DOI: 10.1021/acs.analchem.5b01435](https://doi.org/10.1021/acs.analchem.5b01435)
28. Rani, A., K. J. Rockne, J. Drummond, M. Al-Hinai and R. Ranjan (2015) Geochemical influences and mercury methylation of a dental wastewater microbiome. *Nature Scientific Reports.* **5**:12872. DOI: 10.1038/srep12872 (2015). <http://www.nature.com/articles/srep12872>.
29. Hosseini, S., K. J. Rockne, Z. Li, A. Li, C. Smalley, and N. C. Sturchio (2015) “Black Carbon Depositional Flux and Its Influence on SV-PBTs in Lake Superior Sediment,” *Eighth International Conference on the Remediation and Management of Contaminated Sediments* (New Orleans, LA; January 13–15, 2015). 10 pp.
30. Kaliappan, R. and K. J. Rockne (2015) “Estimating Post-Capping GW-SW Exchange at the Grand Calumet River using Streambed Temperature Profiles”, *Eighth International Conference on the*

*Remediation and Management of Contaminated Sediments* (New Orleans, LA; January 13–15, 2015). 9 pp.

31. Guo, J., D. Chen, D. Potter, K. Rockne, N. C. Sturchio, J. Giesy, A. Li (2014). Polyhalogenated Carbazoles in Sediments of Lake Michigan- A new Discovery. *Environmental Science and Technology*, **48** (21), 12807-12815.
32. Codling, Garry A. Vogt, P. D. Jones, T. Wang, P. Wang, Y.-L. Lu, M. Corcoran, S. Bonina, A. Li, N. C. Sturchio, K. J. Rockne, K. Ji, J.-S. Khim, J. E. Naile, J. P. Giesy (2014). Historical trends of inorganic and organic fluorine in sediments of Lake Michigan. *Chemosphere*, **114**: 203-209.
33. Jones, R., J. Graber, R. Anderson, L. K. J. Rockne, M. Turyk, L. Stayner (2014) Community Drinking Water Quality Monitoring Data: Utility for Public Health Research and Practice. *Journal of Public Health Management and Practice*. **20** (2), 210-219.
34. Wei, Hua, Y. Zou, A. Li, E. Christensen, and K. J. Rockne (2013). Photolytic Debromination Pathway of Polybrominated Diphenyl Ethers in Hexane by Sunlight. *Environmental Pollution*. **174**(1):194-200.
35. Viana, P., K. Yin, K. J. Rockne (2012). Field Measurements and Modeling of Ebullition-Facilitated Flux of Heavy Metals and Polycyclic Aromatic Hydrocarbons from Sediments to the Water Column. *Environmental Science and Technology*. **46**(21):12046–12054.
36. Wei, Hua, A. Aziz-Schwanbeck, Y. Zou, M. Corcoran, A. Poghosyan, A. Li, K. J. Rockne, E. Christensen, N. Sturchio (2012). Polybromodiphenyl Ethers and Decabromodiphenyl Ethane in Aquatic Sediments from Southern and Eastern Arkansas, USA. *Environmental Science and Technology*. **46**:8017–8024. doi.org/10.1021/es301237w.
37. Borrel, G., A. C. Lehours, O. Crouzet, D. Jézéquel, K. Rockne, A. Kulczak, E. Duffaud, K. Joblin, F. Gérard (2012) Stratification of Archaea in the Deep Sediments of a Freshwater Meromictic Lake: Vertical Shift from Methanogenic to Uncultured Archaeal Lineages. *PLoS ONE* **7**(8): e43346. doi:10.1371/journal.pone.0043346.
38. Mittal, M., and K. J. Rockne (2012) Dynamic models of multi-trophic interactions in microbial food-webs. *Journal of Environment Science and Health Part A: Toxic/Hazardous Substances and Environmental Engineering*. **47**(10):1391-1406.
39. Zhao, X., L., K. J. Rockne, and J. L. Drummond (2012) Aeration prevents methyl mercury production in dental wastewater, *Journal of Environment Science and Health Part A: Toxic/Hazardous Substances and Environmental Engineering*, **47**(4):598-604.
40. Granberg, K.J., K. Rockne, J.C. Marlin, E.R. Christensen (2011) “Source apportionment of polycyclic aromatic hydrocarbons in Illinois River Sediment,” *Paper B-84, in: E.A. Foote and A.K. Bullard (Conference Chairs), Remediation of Contaminated Sediments—2011. Sixth International Conference on Remediation of Contaminated Sediments* (New Orleans, LA; February 7–10, 2011). ISBN 978-0-9819730-3-6, Battelle Memorial Institute, Columbus, OH. 8 pp.
41. Viana, P., K.J. Rockne, D. Bucaro, L. Thai (2011) “Sediment Gas Ebullition and Flux Studies in the Chicago River,” *Paper A-48, in: E.A. Foote and A.K. Bullard (Conference Chairs), Remediation of Contaminated Sediments—2011. Sixth International Conference on Remediation of Contaminated Sediments* (New Orleans, LA; February 7–10, 2011). ISBN 978-0-9819730-3-6, Battelle Memorial Institute, Columbus, OH. 8 pp.
42. Yin, K., P. Viana, K. Rockne (2011) “Verification of Aromatic Contaminant Transport in Amended Caps via Isotherm Adsorption and Column Studies,” *Paper C-51, in: E.A. Foote and A.K. Bullard (Conference Chairs), Remediation of Contaminated Sediments—2011. Sixth International Conference on Remediation of Contaminated Sediments* (New Orleans, LA; February 7–10, 2011). ISBN 978-0-9819730-3-6, Battelle Memorial Institute, Columbus, OH. 8 pp.
43. Aziz, A., K. Rockne, E.R. Christensen, A. Li, H. Wei (2011) “Sediment Physical Characteristics as a Biological Indicator for Microbial Reductive Debromination of Polybrominated Diphenyl Ethers (PBDEs),” *Paper B-18, in: E.A. Foote and A.K. Bullard (Conference Chairs), Remediation of Contaminated Sediments—2011. Sixth International Conference on Remediation of Contaminated Sediments* (New Orleans, LA; February 7–10, 2011). ISBN 978-0-9819730-3-6, Battelle Memorial Institute, Columbus, OH. 8 pp.



44. Thai, L.T., J. Miller, L. Vandenberg, D. Wethington, T. Willoughby, K.J. Rockne, K.J. Granberg, (2011) "Indiana Harbor and Canal Confined Disposal Facility Air Monitoring," *Paper D-11*, in: E.A. Foote and A.K. Bullard (Conference Chairs), *Remediation of Contaminated Sediments—2011. Sixth International Conference on Remediation of Contaminated Sediments* (New Orleans, LA; February 7–10, 2011). ISBN 978-0-9819730-3-6, Battelle Memorial Institute, Columbus, OH. 8 pp.
45. Zou, Y., E.R. Christensen, A. Li, H. Wei, K. Rockne, and A.C. Aziz (2011) "PBDEs in Three-Chicago Area Sediment Cores as Determined by Positive Matrix Factorization," *Paper B-28*, in: E.A. Foote and A.K. Bullard (Conference Chairs), *Remediation of Contaminated Sediments—2011. Sixth International Conference on Remediation of Contaminated Sediments* (New Orleans, LA; February 7–10, 2011). ISBN 978-0-9819730-3-6, Battelle Memorial Institute, Columbus, OH. 8 pp.
46. Yin, K., P. Viana, and K. Rockne (2010) Characterization, Performance Modeling, and Design of an Active Capping Remediation Project in a Heavily Polluted Urban Channel. *Science of the Total Environment*. 408(16):3454-3463.
47. Mittal, M., and K. J. Rockne (2010) Diffusional losses of amended anaerobic electron acceptors in sediment field microcosms. *Marine Pollution Bulletin*. 60:1217-1225.
48. Wei, H., R. Yang, A. Li, E. Christensen, and K. J. Rockne (2010). Gas chromatographic retention of 180 polybrominated diphenyl ethers and prediction of relative retention under various operational conditions. *Journal of Chromatography A*. 17:2964-72.
49. Zhao, X., L. Drumm, K. Yin and K. J. Rockne (2009) Segregation of PAH Contaminated Sediments during Hydraulic Dredging and Disposal. *ASCE Journal of Environmental Engineering*. 135(5):291-298.
50. Mittal, M., and K. J. Rockne (2009) Naphthalene and phenanthrene sorption to very low organic content diatomaceous earth: Modeling implications for microbial bioavailability. *Chemosphere*. 74(8): 1134–1144.
51. Li, A., K. J. Rockne, N. C. Sturchio, Song, W. L., J. Ford, and H. Wei (2009). PCBs in Sediments of the Great Lakes -Distribution and Trends, Particle Mediated Fractionation, and In-Situ Degradation. *Environmental Pollution*. 157(1):141–147.
52. Christensen, E. R., Y. Zou, A. Li, K. Rockne, H. Wei, A. C. Aziz (2009) Modeling PAH, PCB, and PBDE sources and degradation in aquatic sediments based on factor analysis with nonnegative constraints. In: *International Conference on Water Scarcity, Global Scarcity, and Groundwater Management Responses*. UNESCO-UCI.
53. Viana, P., K. Yin, and K. Rockne (2009) Ebullition-facilitated transport of heavy metal and organic contaminants to the water column. E-22. In: *Remediation of Contaminated Sediments—2009*. ISBN 978-0-9819730-0-5, Proceedings of the Fifth International Conference on Remediation of Contaminated Sediments. Battelle Press, Columbus, OH.
54. Yin, K., P. Viana, and K. Rockne (2009) Verification of active cap contaminant breakthrough simulations via laboratory column studies. E-03. In: *Remediation of Contaminated Sediments—2009*. Proceedings of the Fifth International Conference on Remediation of Contaminated Sediments. ISBN 978-0-9819730-0-5, Battelle Press, Columbus, OH.
55. Viana, P., K. Yin and K. Rockne (2008) Modeling Active Capping Efficacy I: Metal and Organometal Contaminated Sediment Remediation. *Environmental Science and Technology*. 42(23):8922–8929.
56. Mittal, M., and K. J. Rockne (2008) Indole Production during Anaerobic Naphthalene Biodegradation by *Pseudomonas stutzeri* str. NAP-3. *Journal of Environmental Science and Health, Part A*. 43(9):1027-1034.
57. Zhao, X., L., K. J. Rockne, J. L. Drummond, R. K. Hurley, C. W. Slade, and R. Hudson (2008) Methyl Mercury Generation in Dental Wastewater: A Potential Role of Sulfate Reducing Bacteria. *Environmental Science and Technology*. 42(8):2780-2786.
58. Viana, P., K. Yin, X. Zhao, and K. Rockne (2007) Active sediment capping for pollutant mixtures: Control of biogenic gas production under highly intermittent flows. *Land Contamination and Reclamation*. 15(4):413-425.



59. Rockne, K. J. (2007) Kinetic Hindrance of Iron (II) Oxidation at Alkaline pH and in the Presence of Nitrate and Oxygen in a Facultative Wastewater Stabilization Pond. *Journal of Environmental Science and Health, Part A.* 42(3):265-275.
60. Zhao, X, P. Viana, K. Yin, K. Rockne, D. Hey, J. Schuh, and R. Lanyon (2007) Combined active capping/wetland demonstration in the Chicago River. *D-019*. In: E.A. Foote and G.S. Durell (Conference Chairs), *Remediation of Contaminated Sediments—2007*. Proceedings of the Fourth International Conference on Remediation of Contaminated Sediments. ISBN 978-1-57477-159-6, Battelle Press, Columbus, OH.
61. Viana, P., K. Yin, X. Zhao, and K. Rockne (2007) Modeling and control of gas ebullition in capped sediments. *D-027*. In: E.A. Foote and G.S. Durell (Conference Chairs), *Remediation of Contaminated Sediments—2007*. Proceedings of the Fourth International Conference on Remediation of Contaminated Sediments. ISBN 978-1-57477-159-6, Battelle Press, Columbus, OH.
62. Yin, K., P. Viana, X. Zhao and K. Rockne (2007) A Monte Carlo simulation approach for active caps in mixed contaminant environments. *D-018*. In: E.A. Foote and G.S. Durell (Conference Chairs), *Remediation of Contaminated Sediments—2007*. Proceedings of the Fourth International Conference on Remediation of Contaminated Sediments. ISBN 978-1-57477-159-6, Battelle Press, Columbus, OH.
63. Li, A., K. J. Rockne, N. C. Sturchio, Song, W. L., J. Ford, D. R. Buckley, and W. J. Mills (2006) Polybrominated Diphenyl Ethers in the Sediment of the Great Lakes: 4 - Influencing Factors and Implications. *Environmental Science and Technology.* 40(24):7528-7534.
64. Rockne, K. J. and P. L. Brezonik (2006) Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization. *ASCE J. Environmental Engineering.* 132(4): 451-459.
65. Darnault, C., K. J. Rockne, A. Stevens, A. Mansoori and N. Sturchio (2005) Fate of Environmental Pollutants. *Water Environment Research.* 77(6):2576-2658.
66. Song, W. L., J. Ford, A. Li, N. C. Sturchio, K. J. Rockne, D. R. Buckley, and W. J. Mills (2005) Polybrominated Diphenyl Ethers in the Sediment of the Great Lakes. 3 – Lakes Ontario and Erie. *Environmental Science and Technology.* 39(15); 5600-5605.
67. Song, W. L., A. Li, J. Ford, N. Sturchio, K. J. Rockne, D. R. Buckley, and W. J. Mills (2005) Polybrominated Diphenyl Ethers in the Sediment of the Great Lakes. 2 – Lakes Michigan and Huron. *Environmental Science and Technology.* 39(10):3474-3479.
68. Li, A., W. Song, J. Ford, N. C. Sturchio, K. J. Rockne, D. R. Buckley, W. J. Mills (2005) Temporal Trend and Spatial Distribution of PBDEs In the Sediments of the Great Lakes. *DIOXIN 2005 Conference: Sources and Fate of POPs in the Great Lakes*, 4 pp.
69. Shor, L. M., D. S. Kosson, K. J. Rockne, L. Y. Young and G. L. Taghon (2004) Combined effects of contaminant desorption and toxicity on risk from PAH contaminated sediments. *Risk Analysis.* 24(5):1109-1120.
70. Song, W. L., J. Ford, A. Li, W. J. Mills, D. R. Buckley, and K. J. Rockne (2004) Polybrominated Diphenyl Ethers in the Sediment of the Great Lakes. 1 - Lake Superior. *Environmental Science and Technology.* 38(12):3286-3293.
71. Jayaraj, J., K. J. Rockne, and R. S. Makkar (2004) Reductive Dechlorination of Tetrachloroethene by a Mixed Bacterial Culture Growing on Ethyl Lactate. *Journal of Environmental Science and Health, Part A.* 39(6):1399-1414.
72. Buckley, D. R., K. J. Rockne, A. Li and W. S. Mills (2004) Soot Deposition in the Great Lakes: Implications for Semi-Volatile Hydrophobic Organic Pollutant Deposition. *Environmental Science and Technology.* 38(6):1732-1739.
73. Makkar, R. S. and K. J. Rockne (2003) Comparison of Synthetic Surfactant and Biosurfactants in Enhancing Biodegradation of Polycyclic Aromatic Hydrocarbons. *Environmental Toxicology and Chemistry.* 22(10):2280-2292.
74. Rockne, K. J., and K. R. Reddy (2003) Bioremediation of Contaminated Sites. *Invited Theme Paper, International e-Conference on Modern Trends in Foundation Engineering: Geotechnical Challenges and Solutions*, 22 pp.

75. Rockne, K. J., and S. E. Strand (2003) Amplification of Marine Methanotrophic Enrichment DNA with 16s rDNA PCR Primers for Type II  $\alpha$  Proteobacteria Methanotrophs. *Journal of Environmental Science and Health, Part A*. 38(9):1877-1887.
76. Shor, L. M., K. J. Rockne, G. L. Taghon, L. Y. Young and D. S. Kosson (2003) Desorption Kinetics for Field-Aged Polycyclic Aromatic Hydrocarbons from Sediments. *Environmental Science and Technology*. 37(8):1535-1544.
77. Shor, L. M., W. Liang, K. J. Rockne, L. Y. Young, G. L. Taghon and D. S. Kosson (2003) Intra-Aggregate Mass Transport-Limited Bioavailability of Polycyclic Aromatic Hydrocarbons to *Mycobacterium* Strain PC01. *Environmental Science and Technology*. 37(8):1545-1552.
78. Rockne, K. J., W. Liang, L. Y. Young and G. L. Taghon (2003) Toxicity of Density Separation Media to *Escherichia coli* and *Mycobacterium* strain PC01: Implications for Density-Separation of Soils and Sediments. *FEMS Microbiology Ecology*. 43(2):185-189.
79. Jayaraj, J., R. S. Makkar and K. J. Rockne (2003) A New Electron Donor for Reductive Dechlorination of Perchloroethylene. *In Situ and On Site Bioremediation*. V.S. Magar and M.E. Kelley (Eds.). A-35:1-10.
80. Makkar, R. S., M. Mittal, and K. J. Rockne (2003) Novel Metabolites of Anaerobic Naphthalene Biodegradation by Pure Cultures. *In Situ and On-Site Bioremediation*. V.S. Magar and M.E. Kelley (Eds.). J-07:1-10.
81. Rockne, K. J., L. M. Shor, L. Y. Young, G. L. Taghon and D. S. Kosson (2002) Distributed Sequestration and Release of PAHs in Weathered Sediment: The Role of Sediment Structure and Organic Carbon Properties. *Environmental Science and Technology*. 36(12):2636-2644.
82. Young, L. Y., W. Liang, L. Shor, D. S. Kosson, K. J. Rockne, G. L. Taghon. (2002). Bioavailability of PAHs to Bacteria in Estuarine Sediment. *Soil and Sediment Contamination* 11(3):488.
83. Rockne, K. J., and R. Makkar (2001) Anaerobic Electron Acceptor Amendment for Aromatic Pollutant Biodegradation in Sediments. *In Situ and On-Site Bioremediation*. 6(5):297-304.
84. Rockne, K. J., and S. E. Strand (2001) Anaerobic Biodegradation of Phenanthrene, Naphthalene and Biphenyl by a Denitrifying Enrichment Culture. *Water Research*. 35(1):291-299.
85. Kosson, D. S., L. M. Shor, K. J. Rockne, W. Liang, G. L. Taghon and L. Y. Young (2000) Mass Transfer Limitations on Bioavailability of PAHs from Contaminated Estuarine Sediments. *220<sup>th</sup> American Chemical Society National Meeting*. 40(2):4 pp.
86. Rockne, K. J., G. L. Taghon and D. S. Kosson (2000) Pore Structure of Soot Deposits from Several Combustion Sources. *Chemosphere*. 41(8):1125-1135.
87. Rockne, K. J., J. C. Chee-Sanford, B. Hedlund, R. A. Sanford, S. E. Strand, J. Leigh, and J. T. Staley (2000) Anaerobic Polycyclic Aromatic Hydrocarbon Degradation by Marine Microbial Isolates under Nitrate-reducing Conditions. *Applied Environmental Microbiology*. 66(4):1595-1601.
88. Rockne, K. J., D. S. Kosson, L. Y. Young and G. L. Taghon (1999) Sequestration of PAHs in Size- and Density-Fractionated Estuarine Sediments. *In-Situ and On-Site Bioremediation*. 5(8):191-196.
89. Rockne, K. J., J. C. Chee-Sanford, R. A. Sanford, B. Hedlund, J. T. Staley and S. E. Strand (1999) Naphthalene Degradation and Mineralization by Nitrate-Reducing and Denitrifying Pure Cultures. *In-Situ and On-Site Bioremediation*. 5(8):271-276.
90. Rockne, K. J., and S. E. Strand (1998) Biodegradation of Bicyclic and Polycyclic Aromatic Hydrocarbons in Marine Anaerobic Enrichments. *Environmental Science and Technology* 32(24):3962-3967.
91. Rockne, K. J., H. D. Stensel, R. P. Herwig and S. E. Strand (1998) PAH Degradation and Bioaugmentation by a Marine Methanotroph Enrichment. *Bioremediation Journal*. 1(3) 209-222.
92. Rockne, K. J., H. D. Stensel and S. E. Strand (1997) Transformations of Polyaromatic Hydrocarbons in Sulfate- and Nitrate-Reducing Enrichments. *In-Situ and On-Site Bioremediation*. 4(4) 377-382.
93. Melin, E. S., J. A. Puhaaka, S. E. Strand, K. J. Rockne, and J. F. Ferguson (1996) Fluidized-Bed Enrichment of Marine Ammonia-to-Nitrite Oxidizers and their Ability to Cometabolically Oxidize Chloroaliphatics. *International Biodeterioration and Biodegradation*. 38(1) 9-18.

## DISSERTATIONS (2 TOTAL)

---

94. Rockne, K. J. (1997) "Alternative Electron Acceptors for Polycyclic Aromatic Hydrocarbon Biodegradation." Ph.D. Dissertation. University of Washington, Seattle, WA. 256 pp. Dissertation Abstracts International. 58-12(B): 6748.
95. Rockne, K. J. (1992) "The Chemical Water Quality of Wastewater Stabilization Ponds in Minnesota." M.S. Thesis. University of Minnesota, Minneapolis, Minnesota. 148 pp.

## REPORTS (19 TOTAL)

---

96. Khazraee, M. and K. J. Rockne (2019) Linear Elastic Fracture Mechanics (LEFM) Modeling of the Gas Ebullition Process in Sediments: Phase I LEFM Model Development and Testing; Phase II Biogenic Gas Fracture Mechanics (BGMF) Model Development and Testing. A project report prepared for ExxonMobil Environmental Services Corporation, Houston, TX and Parsons Engineering, Chicago, IL. 41 pp.
97. Khazraee, M., R. Kaliappan, and K. J. Rockne (2018) Gas Ebullition from Petroleum Hydrocarbons in Aquatic Sediments: A Review. A report to ExxonMobil Environmental Services Corporation. Houston, TX. 76 pp.
98. Wackler, T., et al. (2018) Plan for addressing critical research gaps related to emerging contaminants in drinking water, A report by the Task Force on Emerging Contaminants. National Science and Technology Council in the Office of Science and Technology Policy (OSTP). Executive Office of the President of the United States. October 2018. 28 pp.
99. Li, A, K. J. Rockne, N. Sturchio, and J. Geisy (2018) Great Lakes Sediment Surveillance Program (GLSSP). Final report for project GL-00E00538. Great Lakes National Program Office, United States Environmental Protection Agency. Chicago, IL 13 pp.
100. Mendoza, G., et al. (2018) Coordinated Strategic Plan to Advance Desalination for Enhanced Water Security, A report by the Desalination and Technology Task Force of the Subcommittee on Water Availability and Quality (SWAQ). National Science and Technology Council in the Office of Science and Technology Policy (OSTP). Executive Office of the President of the United States.
101. Granberg, K. J. and K. J. Rockne (2015). Source Apportionment of Polycyclic Aromatic Hydrocarbons in Illinois River Sediment. TR Series (Illinois Sustainable Technology Center); 058. 2015-06. <http://hdl.handle.net/2142/78039>. 47 pp.
102. Rockne, K. J. (2014). ABET Self-Study Report for the Department of Civil and Materials Engineering at University of Illinois at Chicago. July 1, 2014. 312 pp.
103. Rockne, K. J., and R. Kaliappan (2013) Post-Capping Sediment Gas Ebullition Study, Grand Calumet River, Western Branch, Reaches 1 and 2, USACE-Chicago District, 157 pp.
104. Rockne, K. J., R. Kaliappan, G. Bourgon (2011) Sediment Gas Ebullition Study, Grand Calumet River, Western Branch, Reaches 1 and 2, USACE-Chicago District, 234 pp.
105. Rockne, K. J., P. Viana, K. Yin (2010) Sediment Gas Ebullition and Flux Studies: Bubbly Creek, South Fork South Branch, Chicago River. **Volume 1 of 2**: Report and Appendices A-D. United States Army Corps of Engineers Chicago District. 96 pp.  
Rockne, K. J., P. Viana, K. Yin (2010) Sediment Gas Ebullition and Flux Studies: Bubbly Creek, South Fork South Branch, Chicago River. **Volume 2 of 2**: Appendix E, Analytical Results. United States Army Corps of Engineers Chicago District. 369 pp.
106. Rockne, K. J. (2010). Active Capping for Contaminated Sediment Remediation, Final Report, National Science Foundation. February 2010. 11 pp.
107. Rockne, K. J., J. Jayaraj, A. Li (2009). Fate Analysis of Polybrominated Diphenyl Ethers in Anaerobic Digester Sludge, Final Report, Waste Management and Research Center, Illinois Department of Natural Resources. May 2009. 182 pp.
108. Rockne, K. J. (2008). ABET Self-Study Report for the Civil and Materials Engineering Program at The University of Illinois at Chicago. July 1, 2008. 260 pp.
109. Li, A., K. J. Rockne, N. Sturchio, W. J. Mills, W. Song, J. Ford (2006). Chronology of PBDE Air Deposition in the Great Lakes from Sedimentary Records, Final Report, Great Lakes Atmospheric

Deposition Program Office, Air and Radiation Division, United States Environmental Protection Agency. March 31, 2006. 190 pp.

110. Li, A., K. J. Rockne, B. Mills, W. Song, D. Buckley, J. Ford (2003). Year-2 Annual Progress Report: Chronology of PBDE Air Deposition in the Great Lakes from Sedimentary Records, Environmental Protection Agency Great Lakes Atmospheric Deposition Program Office. October 21, 2003. 8 pp.
111. Rockne, K. J. (2003). Stimulation of Organic Contaminant Biodegradation Through the Amendment of Anaerobic Electron Acceptors to Estuarine Sediments, Final Report. The NOAA/UNH Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET). NOAA Grant NA97OR0338. [http://www.ciceet.unh.edu/files/full\\_project/Rockne\\_final\\_report.pdf](http://www.ciceet.unh.edu/files/full_project/Rockne_final_report.pdf). May 28, 2003. 77 pp.
112. Li, A., K. J. Rockne, B. Mills, W. Song, D. Gunty, J. Ford (2002). Year-1 Annual Progress Report: Chronology of PBDE Air Deposition in the Great Lakes from Sedimentary Records, Environmental Protection Agency Great Lakes Atmospheric Deposition Program Office. October 28, 2002. 10 pp.
113. Li, A., K. J. Rockne, B. Mills, W. Song, D. Gunty (2002). Quality Assurance Plan: Chronology of PBDE Air Deposition in the Great Lakes from Sedimentary Records, Environmental Protection Agency Great Lakes Atmospheric Deposition Program Office. February 12, 2002. 30 pp.
114. Taghon, G.L., D.S. Kosson, K.J. Rockne, and L.M. Shor (1999). Final Report: Bioavailability of organic contaminants in estuarine sediments to microbes and benthic animals. Available at [http://cfpub.epa.gov/ncer\\_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/160/report/F](http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/160/report/F).

---

**PRESENTATIONS (LAST FIVE YEARS), OVERALL: >240 TOTAL, >80 INVITED**

---

(Presenter underlined, most recent first)

1. Rockne, K. (2021) “NSF Support of Micro/Nano-Plastics Research.” **Invited Speaker**, The Optical Society (OSA): Optical Sensing Congress. SpE5/AIS Panel: Microplastics in the Environment: Challenges and Opportunities. July 21, 2021.
2. Rockne, K. (2021) “Association of Environmental Engineering and Science Professors (AEESP) NSF CAREER Panel.” **Invited Speaker**, Association of Environmental Engineering and Science Professors (AEESP): 2021 AEESP “Virtual Appetizer” Meeting for AEESP St. Louis 2022. Washington University (virtual). July 13, 2021.
3. Rockne, K. (2021) “NSF Environmental Engineering program Four Year Perspective.” **Invited Speaker**, National Academies of Science, Engineering, and Medicine (NASEM): Water Science and Technology Board (WSTB) Spring 2021 Meeting. Washington DC. May 26, 2021.
4. Rockne, K., and L. Lautz (2021) “Water Related Science Priorities at NSF.” **Invited Speaker**, National Academies of Science, Engineering, and Medicine (NASEM): Water Science and Technology Board (WSTB) Spring 2021 Meeting. Washington DC. May 24, 2021.
5. Rockne, K. (2021) “Discussion of Solution Pathways: Technical Tools.” **Invited Speaker**, National Academies of Science, Engineering, and Medicine (NASEM): Environmental Health Matters Initiative (EHMI) *Reducing the Health Impacts of the Nitrogen Problem: Reflection and Synthesis: Proceedings of a Workshop in Brief*. Washington, DC: The National Academies Press. Washington DC. February 25, 2021.
6. Rockne, K. (2021) “Environmental Engineering Past, Present, and a Vision for the Future.” **Invited Speaker**, Department of Environmental Engineering Sciences Spring 2021 EES Seminar Series. Gainesville, FL (virtual), February 12, 2021.
7. Rockne, K. (2020) “NSF support of SARS CoV-2 Wastewater Surveillance Research.” **Invited Speaker**, National Sewage Surveillance Interagency Leadership Committee (NSSILC). Washington DC. December 9, 2020.
8. Rockne, K. (2020) “SARS CoV-2 Wastewater Surveillance Research Coordination Network.” **Invited Speaker**, Centers for Disease Control (CDC). Washington DC (virtual). September 2, 2020.
9. Rockne, K. J. (2020) “Grand Challenges for Bioremediation in the 21<sup>st</sup> Century”. US/Chile Joint Biomitigation Workshop. **Invited speaker**. Santiago, Chile. March 30-April 2, 2020.
10. Rockne, K. J. (2020) “CBET CAREER Program Webinar.” CAREER PI Workshop. **Session Chair**. Washington DC. May 22, 2020.

11. **Rockne, K.** (2019) “Nano-Tech Enabled Research and Development for Sustainable Water Treatment.” **Invited Speaker**, Water NSI 2020 Federal Meeting, National Nanotechnology Initiative (NNI). Washington, DC, Feb 21, 2020.
12. **Rockne, K.** (2019) “Air Pollution Research funding by the NSF Environmental Engineering program.” **Invited Speaker**, American Association of Aerosol Research, AAAR 2019. Portland, OR. October 15-17, 2019.
13. **Rockne, K.** (2019) “NSF CBET Programs: Environmental Engineering and Sustainability.” **Invited Speaker**, American Institute of Chemical Engineers, AIChE 2019. Orlando, FL. November 11, 2019.
14. **Rockne, K.** (2019) “Wastewater/Resource Recovery Research funding by the NSF Environmental Engineering program”. **Invited Speaker**, Late breaking research. WEFTEC 2019. Chicago, IL. September 24, 2019.
15. **Izadmehr, M.** and **K. Rockne** (2019) “Impact of Drought Conditions on Nutrient Removal, Sediment Organic Matter, and Flow Hydraulics in a Treatment Wetland”. “Linking Sustainable Urban Water Systems Conference.” University of Wisconsin-Milwaukee School of Freshwater Sciences, Milwaukee, WI. July 26, 2019.
16. **Rockne, K.** (2019) “NSF Environmental Engineering Initiatives”. **Invited Speaker**, National Academies of Science, Engineering, and Medicine (NASEM) Water Science and Technology Board (WSTB) meeting. Washington, DC, June 15, 2019.
17. **Rockne, K.**, and M. Khazraee (2019) “Biogenic Gas Fracture Model for Gas Ebullition in sediments”. US Army Corps of Engineers Engineering Research and Development Center (ERDC). Environmental Laboratory. Vicksburg, MS. June 12, 2019.
18. Rockne, K. J., and B. Johnson (2019) “NSF-Directorate for Engineering”. NSF Spring Grants Conference. Los Angeles, CA. May 20-21, 2019.
19. Rockne, K. J. F. Cobb-Payton, K. Santoro, and B. Tuller (2019) “Merit Review Process”. NSF Spring Grants Conference. Los Angeles, CA. May 20, 2019.
20. Rockne, K. J. (2019) “Grand Challenges for Environmental Engineering in the 21st Century: The 6th Grand Challenge”. Keynote, Association of Environmental Engineering and Science Professors (AEESP) Bi-Annual Meeting. Arizona State University, Tempe, AZ. May 15, 2019.
21. Khazraee, M. and K. Rockne (2019) “Gas Biokinetic and Sediment Structure Controls on Gas Ebullition from Contaminated Sediments”. Association of Environmental Engineering and Science Professors (AEESP) Bi-Annual Meeting. Arizona State University, Tempe, AZ. May 15, 2019.
22. Izadmehr, M. and K. Rockne (2019) “Impact of Drought Conditions on Nutrient Removal, Sediment Organic Matter, and Microbial Communities in a Treatment Wetland”. Association of Environmental Engineering and Science Professors (AEESP) Bi-Annual Meeting. Arizona State University, Tempe, AZ. May 14, 2019.
23. Rockne, K. J. (2019) “Grand Challenges for Environmental Engineering in the 21st Century”. Invited Speaker, University of Maryland Baltimore County College of Engineering Seminar. Baltimore, MD. April 22, 2019.
24. Rockne, K. J. (2019) “Grand Challenges for Environmental Engineering in the 21st Century”. Invited Speaker, University of Washington College of Engineering Seminar. Seattle, WA. March 14, 2019.
25. Rockne, K. J. (2019) “Grand Challenges for Environmental Engineering in the 21st Century”. Invited Speaker, University of Utah College of Engineering Seminar. Salt Lake City, UT. March 8, 2019.
26. Izadmehr, M. and K. Rockne (2019) “Identifying Limits to Denitrification in Constructed Wetlands”. Wetland Science Conference of the Wisconsin Wetlands Association, Elkhart Lake, WI. February 20, 2019.
27. Rockne, K., and M. Khazraee (2019) “Evaluating the potential for petroleum hydrocarbons to induce gas ebullition in sediments”. 10th International Conference on the Remediation and Management of Contaminated Sediments. Session D.5 Ebullition. New Orleans, LA. February 13, 2019.
28. **Rockne, K. J.** (2019) “Wetland Monitoring: Needs, Objectives, and Future Directions”. **Invited Keynote Speaker**, Smart Wetlands Roundtable Luncheon: Hardware, Software, Policy, and Results. Northern Trust Corporation. Chicago, IL. January 10, 2019.
29. Izadmehr, M. and K. Rockne (2018) “Impact of Drought Conditions on Nutrient Removal, Sediment Organic Matter, and Flow Hydraulics in a Treatment Wetland”. American Geophysical Union (AGU) Fall 2018 Meeting. Washington DC. December 12, 2018.

30. Khazraee, M. and K. Rockne (2018) "Validation and Sensitivity Analysis of Gas Ebullition Prediction by Biogenic Gas Fracture Mechanics Theory". American Geophysical Union (AGU) Fall 2018 Meeting. Washington DC. December 12, 2018.
31. **Rockne, K. J.** (2018) "Opportunities and Challenges in Environmental Engineering: Past, Present, and Future". **Invited Speaker**, Drexel University College of Engineering Seminar. Philadelphia, Pennsylvania. October 4, 2018.
32. **Izadmehr, M.** and **K. Rockne** (2018) "Annual Changes in the Sediment Microbiome Structure During Development of a Constructed Wetland". American Society for Microbiology (ASM) Microbe 2018. Atlanta, GA. June 8, 2018.
33. **Khazraee, M.** and **K. Rockne** (2018) "A Mechanistic Model for Gas Ebullition in the Presence of NAPLs in Sediments". American Society of Civil Engineers Environmental and Water Research Institute (ASCE-EWRI) 2018 World Environmental & Water Resources Congress. Minneapolis, MN. June 3-7, 2018. Paper awarded **second place in the graduate student paper competition**.
34. **Izadmehr, M.** and **K. Rockne** (2018) "Pocket Wetlands for Nutrient Removal in Tile-Drained Agriculture". American Society of Civil Engineers Environmental and Water Research Institute (ASCE-EWRI) 2018 World Environmental & Water Resources Congress. Minneapolis, MN. June 3-7, 2018. Paper awarded **first place in the graduate student paper competition**.
35. **Krishnamurthy, A.,** and **K. Rockne** (2018) "The Impact of an Eco-restoration on the Fate of Nutrients and Emerging Contaminants in a Suburban Effluent-Dominated Stream". American Society of Civil Engineers Environmental and Water Research Institute (ASCE-EWRI) 2018 World Environmental & Water Resources Congress. Minneapolis, MN. June 3-7, 2018.
36. **Rockne, K. J.** (2018) "Managing Legionella and Other Pathogens in Building Water Systems: The National Science Foundation Perspective". **Invited Speaker**, Legionella 2018. Baltimore, MD. May 9, 2018.
37. **Rockne, K. J.** (2018) "The Engineering Grand Challenges: Where Environmental Engineering fits into the Landscape of Transformative Research". **Keynote Speaker**, *American Academy of Environmental Engineers and Scientists (AAEES): Excellence in Environmental Engineering and Science Awards Luncheon and Conference*. National Press Club, Washington, DC. April 19, 2018.
38. **Rockne, K. J.,** and M. Khazraee (2018) "Biogeochemical Model for Gas Ebullition in the Presence of NAPLs in Sediments". 255<sup>th</sup> American Chemical Society (ACS) National Meeting. New Orleans, LA. March 22, 2018.
39. **Rockne, K. J.** (2018) "NSF-CBET Overview and Funding Opportunities for Researchers in the Clinical Sustainability Field". **Invited Speaker**, The Workshop on Environmental Sustainability in Clinical Care. Yale University, New Haven, CT. April 7, 2018.
40. **Rockne, K. J.** (2018) "Environmental Engineering Challenges both Grand and Small". **Invited Speaker**, Colloquium. Arizona State University, Tempe, AZ. February 6, 2018.
41. **Rockne, K. J.** (2018) "NSF's Water Research Programs and Interests". **Invited Speaker**, International Center for Integrated Water Resources Management (ICIWaRM). National Academies of Science, Engineering, and Medicine (NASEM), Washington, DC. January 19, 2018.
42. **Rockne, K. J.** (2017) "Grand Challenges and Opportunities in Environmental Engineering and Science in the 21<sup>st</sup> Century: The National Science Foundation's Perspective". **Invited Speaker**. California Academy of Sciences. San Francisco, CA September 5-8, 2017.
43. **Rockne, K. J.,** and J. Kostel (2017) Treatment Wetlands for Meeting the Illinois Nutrient Reduction Strategy Goals, Illinois Nutrient Research and Education Council, Northern Illinois Public Forum, Princeton, IL, June 27, 2017.
44. **Rockne, K. J.** (2017) The Worldwide Problem of Hypoxia: How to Combat the Problem Through Nutrient Removal at the Source, **Invited Speaker**: UNESCO/*UN World Water Day*, Bari, Italy, March 22, 2017.
45. **Rockne, K. J.** (2017) Threats to the Laurentian Great Lakes: Past, Present, and Future **Invited Speaker**: *National Science Foundation, Environmental Engineering Program*, Arlington, VA, February 22, 2017.
46. **Rockne, K. J.** M. Izadmehr, J. Kostel (2017) Treatment Wetlands: A Key Technology for Meeting the Illinois Nutrient Reduction Strategy Goals, **Invited Speaker**: *Society of American Military Engineers (SAME)*, US Army Corps of Engineers Chicago District, Chicago, IL, January 18, 2017.
47. **Rockne, K. J.,** H. Peng, J. Guo, S. Hosseini, A. Li, J. Giesy and N. Sturchio (2017) Halogenated "Pollutants" Everywhere: An Overview of Findings from the Great Lakes Sediment Surveillance Program, the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 10, 2017.

48. **Rockne, K. J.**, and R. Kaliappan (2017) The Archaeal Microbiome in an Ebullition-Active Capped Sediment, **Invited Speaker:** the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 11, 2017.
49. **Zamanpour, M. K.** and **K. J. Rockne** (2017) Towards a Mechanistic Model of Gas Ebullition in Sediments in the Presence of NAPLs, **Invited Speaker:** the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 11, 2017.
50. **Izadmehr, M.**, **K. J. Rockne**, J. Kostel and G. Johnson (2017) Sediment Microbiome Dynamics in a Nutrient Treatment Wetland Sediment, the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 15, 2017.
51. Kaliappan, R. and **K. J. Rockne** (2017) Continuous Post-Capping Darcy Flux Measurement Using Dynamic Harmonic Regression Filtering of Sediment Temperature Data in the Grand Calumet River, Indiana, the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 10, 2017.
52. **Rockne, K. J.** (2016) Methyl Hg in the Dental Clinic, **Invited Speaker:** *Current Topics in Water and Health Research*, School of Public Health, University of Illinois at Chicago, Chicago, IL, March 1, 2016.
53. **Peng, H.**, J. Giesy, D. Saunders, S. Tang, G. Codling, M. Hecker, S. Wiseman, P. Jones, A. Li, N. Sturchio and **K. J. Rockne** (2015) “Untargeted Screening of Brominated Compounds in Sediments Using a Data Independent Precursor Isolation and Characteristic Fragment (DIPIC-Frag) Method”. PACHIFICHEM: The International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, USA, December 15-20, 2015.
54. **Rockne, K. J.**, and J. Giesy and G. Codling (2015) “Applications of Environmental Forensics for Chemicals of Emerging Concern”. **Invited Speaker** PACHIFICHEM: The International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, USA, December 15-20, 2015.
55. **Rockne, K. J.**, and A. Rani (2015) “Geochemical Influences on the Dental Wastewater Microbiome”. PACHIFICHEM: The International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, USA, December 15-20, 2015.
56. **Rockne, K. J.** (2015) Enhanced Biological Phosphorus Removal, **Invited Speaker:** *Metropolitan Water Reclamation District of Greater Chicago*, Stickney, IL April 30, 2015.
57. **Rockne, K. J.** (2015) Active Capping and Contaminated Sediments, **Invited Speaker:** *Biological Sciences Seminar*, University of Illinois at Chicago, Chicago, IL February 19, 2015.
58. **Rockne, K. J.**, A. Li, J. Giesy N. Sturchio, S. Bonina, G. Codling, M. Corcoran, J. Guo, S. Hosseini, Z. Li, C. Smalley, and A. Vogt (2015) The Great Lakes Sediment Surveillance Program, the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 15, 2015.
59. **Kaliappan, R.** and **K. J. Rockne** (2015) Estimating Post-Capping GW-SW Exchange at the Grand Calumet River using Streambed Temperature Profiles, the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 14, 2015.
60. **Rockne, K. J.**, and R. Kaliappan (2015) Three-Year Post Cap Gas Ebullition Monitoring Study in Reaches 1 and 2 of the Grand Calumet River, Indiana, **Invited Speaker:** the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 14, 2015.
61. **Hosseini, S.**, **K. J. Rockne**, Z. Li, A. Li, C. Smalley, and N. C. Sturchio (2015) Black Carbon Depositional Flux and Its Influence on SV-PBTs in Lake Superior Sediment, the *Battelle Contaminated Sediment Conference*, New Orleans, LA, January 15, 2015.
62. **Rockne, K. J.**, S. M.C. Bonina, S. Hosseini, and A. Rani (2014) The Great Lakes Sediment Surveillance Program: Carbon in Lakes Superior and Michigan, Invited Speaker at the *USEPA Great Lakes National Program Office (USEPA-GLNPO)*, Chicago, IL, November 19, 2014.
63. **Guo, J.**, D. Chen, A. Li, Z. Li, P. Ranasinghe, **K. J. Rockne**, J. P. Giesy, N. C. Sturchio, D. Potter. (2014) Mixed Halogenated Carbazole Identification and Spatial Distribution and Temporal Trend in the Sediments of Upper Great Lakes. Poster presented at The Society of Environmental Toxicology and Chemistry (SETAC) North America 35th Annual Meeting. Vancouver, British Columbia, Canada. November 9–13 2014.
64. **Zhuona, L.**, P. Ranasinghe, J. Guo, A. Li, **K. J. Rockne**, J. P. Giesy, N. C. Sturchio. (2014) Legacy and Emerging Halogenated Organic Compounds in the Surface Sediments of Lake Huron. Poster presented at The Society of Environmental Toxicology and Chemistry (SETAC) North America 35th Annual Meeting., Vancouver, British Columbia, Canada. November 9–13, 2014.



65. Zhuona, L., J. Guo, A. Li, **K. J. Rockne**, J. P. Giesy, N. C. Sturchio. (2014) Distribution and Trends of Polybrominated Diphenyl Ethers and Dechloranes in Lake Superior Sediment. Poster presented at Brominated Flame Retardant Workshop. Indianapolis, IN. June 22-24, 2014.
66. Guo, J., M. B. Corcoran, A. Li, **K. J. Rockne**, N. C. Sturchio, J. P. Giesy. (2014) Spatial Distribution and Time Trend of Persistent and Bioaccumulative Organics in the Sediments of Lake Michigan. Poster presented at Brominated Flame Retardant Workshop. Indianapolis, IN. June 22-24, 2014.
67. Guo, J., Z. Li, P. Ranasinghe, M. B. Corcoran, A. Li, **K. J. Rockne**, N. C. Sturchio, J. P. Giesy. (2014) Report from the Great Lakes Sediment Surveillance Program –Halogenated Organic Chemicals in Upper Great Lakes. Platform presentation at the Brominated Flame Retardant Workshop. Indianapolis, IN. June 22-24, 2014.
68. **Rockne, K. J.** (2014) Active Capping and Contaminated Sediments, **Invited Speaker: Civil and Environmental Engineering Departmental Seminar**, Northwestern University, Evanston, IL April 4, 2014.

**>170 presentations pre-2014**

---

**ADVISEES (35 TOTAL: INCLUDING 3 POST DOCS; 8 MS, 12 PHD COMPLETED; 2 PHD CURRENT)**

---

### **Current**

#### **Graduate Students**

1. Karabi Mondal, **PhD student** (Fall 2019-present). M.S. Material Science (2019) “A study on zeta potential and its effect on electrophoretic deposition of ceramic reinforced copper, tin, nickel”, Department of Metallurgical & Materials Engineering, Indian Institute of Technology Karagpur.
2. Teralyn Murray, **PhD student** (2017-present). BS/MS Civil Engineering.

### **Completed**

#### **Post-Doctoral Research Associates (4 Total):**

1. Dr. Morvarid Khazraee (January 2021-October 2021). PhD. Environmental Engineering (2020) Dept. of Civil, Materials and Environmental Engineering, University of Illinois at Chicago.
2. Evan O’Brien (Spring 2020-present). PhD. Environmental Engineering (2019) Dept. of Civil and Environmental Engineering, Michigan State University.
3. Asha Rani (Fall 2010-2012). PhD. Microbiology (2007) Institute of Genomics and Integrative Biology, University of Delhi. Current: Research Professor, Genomics Resource Laboratory, University of Massachusetts, Amherst, 01003, USA.
4. Dr. Randhir Makkar (2001-2002). Ph.D. Biotechnology (1999), Institute of Microbial Technology, Chandigarh, India. Current: Post-Doctoral Research Associate, Medical University of South Carolina.

#### **Graduate Students Completed (20 Total: 12 PhD and 8 Masters)**

1. Mahsa Izadmehr, **Ph.D. 2021**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: B.S. Civil Engineering (2008) Power and Water University of Technology, Tehran, Iran (2008) and M.S. Environmental Engineering (2013) IIT.
2. Morvarid Khazraee, **Ph.D. 2020**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: “Biokinetic and Sediment Structural Controls on Gas Release from Contaminated Sediments.” B.S. (2011) and M.S. (2015) Environmental-Chemical Engineering, Sharif University, of Technology. MS Thesis “Electricity generation and Desalination in Microbial Desalination Cell with algal Bio-catalyst”
3. Sepideh Karkouti, **M.S. Material Engineering 2017**. “The effect of aging under biologically-relevant conditions on the mechanical properties of dental composite”. B.S. (2016) Material Engineering, Sharif University, Tehran.
4. Soheil Hosseini, **Ph.D. 2016**. “Implications of Carbon Deposition on the Fate of Semi-Volatile Organic Pollutants in the Great Lakes”. M.S. (2009) Chemical and Petroleum Engineering, Sharif University, Tehran. B.S. (2006) Chemical Engineering, Isfahan University of Technology, Isfahan.
5. Raja Kaliappan **Ph.D. 2016**. “Sediment Capping Effects on Gas Ebullition, Hyporheic Exchange and Benthic Microbial Community Structure”. M.S. (2008) Environmental Engineering, Illinois Institute of

Technology. Current: CH2M Hill, Milwaukee, WI.

6. Solidea Bonina, **Ph.D. 2016**. “Carbon Loading to Lake Michigan Sediments”. M.S. (2007) Civil Engineering, Politecnico de Bari, Italy. Current: USEPA, Chicago, IL.
7. Azivy Che Aziz, **Ph.D. 2014** Environmental Engineering, “Polybromodiphenyl Ethers and Polychlorinated Biphenyls in Aquatic Sediments” University of Illinois-Chicago, M.S. (2012) University of Illinois at Chicago; B.S. (2007) Chemical Engineering, University of Wisconsin, Madison. Current: Research Scientist, Exxon-Mobil, Houston, TX.
8. Kelly Granberg, **Ph.D. 2013**. IGERT Fellow, Environmental Engineering University of Illinois-Chicago. "Multimedia Source Apportionment of Semi-volatile Organic Contaminants in the Chicago Area of Influence."
9. Gregory Bourgon **M.S. 2012**. Environmental Engineering, University of Illinois-Chicago, Chicago, IL. B.S. (2008) Geology, Northwestern University.
10. Azivy Che Aziz, **M.S. 2012**. Environmental Engineering, University of Illinois-Chicago, Chicago, IL. B.S. (2007) Chemical Engineering, University of Wisconsin, Madison. Completed PhD in my laboratory.
11. Priscilla Zuconi Viana **Ph.D. 2012**. Fulbright Scholar/AAUW Fellow/NOAA Fellow, Civil Engineering University of Illinois-Chicago. "Contaminant flux through capped and uncapped sediments." 271 pp.
12. Xiuhong Zhao, **Ph.D. 2009**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: “Methyl Mercury in Dental Wastewater.”
13. Yin Ke, **Ph.D. 2009**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: “Modeling Active Capping Potential of Contaminated Sediments.” Currently Senior Research Fellow, Residues and Resource Reclamation Centre, Nanyang Technological University, Singapore.
14. Jayashree Jayaraj, **Ph.D. 2009**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: “Fate Analysis of Polybrominated Diphenyl Ethers in Anaerobic Digester Sludge.”
15. Menka Mittal, **Ph.D. 2006**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: “Dynamic models of multi-trophic interactions in microbial food webs.” Currently Adjunct Professor, Civil Engineering, University of Colorado at Denver, and Health Sciences (UCDHS).
16. Laura Drumm, **M.S. 2004**. Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master’s Thesis: “Indiana Harbor Sediments: Low Density Separation for Treatment of Hydrophobic Contaminants.” Currently Engineer, URS.
17. Menka Mittal, **M.S. 2003**. Civil Engineering, University of Illinois-Chicago. Master’s Thesis: “Transport of Anaerobic Electron Acceptors in Bioremediated Sediments and Detection of PAH Metabolites.” Completed Ph.D. in my laboratory.
18. David Gunty-Buckley, **M.S. 2003**. Civil Engineering, University of Illinois-Chicago. Master’s Thesis: “Recent Soot and Organic Carbon Flux to the Great Lakes: Links to Atmospheric Transport and Availability of Organic Pollutants in Sediments.” Currently Engineer, Christopher Burke Engineering.
19. Jayashree Jayaraj, **M.S. 2002**. Civil Engineering, University of Illinois-Chicago. Master’s Thesis: “Reductive Dechlorination of Perchloroethylene by a Green Solvent in Bioreactors.” Completed Ph.D. in my laboratory.
20. Monika Tkaczyk, **M.S. 2002**. B.S. (2000) in Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master’s Thesis: “Rainfall Runoff and Flow Analysis to Investigate Flow Paths in Forested Watersheds Utilizing TOPMODEL.” Completed Ph.D., Dept. of Civil Engineering, University of Florida.

#### **Undergraduate Research Assistants and Visiting Laboratory Interns:**

1. Nalin Naranjo (2028-2020). University of Illinois-Chicago, Civil Engineering. Currently graduate student working on her Ph.D. in Civil Engineering.
2. Gary Johnson (2014-2015, 2015-2016 AY) University of Illinois-Chicago, Civil Engineering.
3. Petr Doškář (August 2014-September 2014) Visiting scholar from University of J.E. Purkyně (Czech Republic) interned in my laboratory from the Czech Republic as part of an international program to learn about river eco-restoration.

4. Omar Rubio (June 2014-August 2014) University of Illinois-Chicago, Civil Engineering.
5. Anthony Gliganic (June 2014-August 2014) University of Illinois-Chicago, Civil Engineering.
6. Ammar Elmajdoub (June 2014-August 2014) Oakton Community College.
7. Sandra Verthein (July 2001-January 2002). B.S. in Civil Engineering (spring 2002), University of Illinois-Chicago, Chicago, IL. Presented her work at the 2002 University of Illinois-Chicago Undergraduate Research Symposium.

#### **High School Students:**

1. Ranjani Sundar (Summer 2014). Mentored high school student from the Illinois Mathematics and Science Academy on the project “Metagenomics characterization of wastewater digester sludge that degrades polybrominated flame retardants”.
2. Eshani Mishra (Summer 2014). Mentored high school student from Hinsdale Central High School on the project “Effects of Electric and Magnetic Fields on Paraffin and Asphaltene-based Solution Viscosity”.
3. Nishith Reddy (Summer 2010). Mentored high school student from the Illinois Mathematics and Science Academy on the project “CdS/ZnS Quantum Dot-Photoexcited Glucose Oxidase Biosensor for Ag<sup>+</sup> Detection in Contaminated Aqueous Environments”. **Project received second place in the 2011 National Stockholm Junior Water Prize** sponsored by the Water Environment Federation.

#### **Awards won by UIC PhD advisees (16 total):**

1. **Second place** in the graduate student paper competition awarded to Professor Rockne PhD advisee Morvarid Khazraee (2018) for “A Mechanistic Model for Gas Ebullition in the Presence of NAPLs in Sediments”. American Society of Civil Engineers Environmental and Water Research Institute (ASCE-EWRI) 2018 World Environmental & Water Resources Congress. Minneapolis, MN. June 3-7, 2018.
2. **First place** in the graduate student paper competition awarded to Professor Rockne PhD advisee Mahsa Izadmehr (2018) for “Pocket Wetlands for Nutrient Removal in Tile-Drained Agriculture”. American Society of Civil Engineers Environmental and Water Research Institute (ASCE-EWRI) 2018 World Environmental & Water Resources Congress. Minneapolis, MN. June 3-7, 2018.
3. Illinois Seagrant Fellowship (2017). Awarded to Professor Rockne PhD advisee Mahsa Izadmehr from the Illinois Seagrant Program.
4. Pre-Doctoral Fellowship (2015). Awarded to Professor Rockne PhD advisee Soheil Hosseini from the Institute for Environmental Science and Policy, University of Illinois at Chicago.
5. Environmental Sustainability Award given to Caleb Carr, Paul Jacobs, Diana Mejorado for their Engineering EXPO project “Nutrient Removal Using a Constructed Wetland” advised by Civil and Materials Engineering Professor Karl Rockne. April 22, 2014.
6. 2011-12 Pre-Doctoral Fellowship (2011-12). Awarded to Professor Rockne PhD advisee Kelly Granberg from the Institute for Environmental Science and Policy, University of Illinois at Chicago.
7. Christopher Burke Graduate Student Scholarship (2011). Awarded to Professor Rockne advisee Azivy Che-Aziz Schwanbeck.
8. National Stockholm Junior Water Prize, 2<sup>nd</sup> place (2011). Awarded to Nishith Reddy for the project “CdS/ZnS Quantum Dot-Photoexcited Glucose Oxidase Biosensor for Ag<sup>+</sup> Detection in Contaminated Aqueous Environments.” Sponsored by the Water Environment Federation.
9. Worldwide Workshop for Young Environmental Scientists (WWW-YES) scholarship (2010). Awarded to Professor Rockne PhD advisee Kelly Granberg from the Université Paris-Est Water Environment & Urban Systems Laboratory, Val-de-Marne County, and H<sub>2</sub>O Paris foundation.
10. Pursuing Academic Careers in Engineering (PACE) membership (2010). Awarded to three of Professor Rockne’s PhD advisees: Azivy Che-Aziz, Priscilla Viana, and Kelly Granberg. Co-sponsored by the UIC College of Engineering, Department of Mechanical and Industrial Engineering, and Women in Science and Engineering.
11. American Society of Civil Engineers (2010). IL Section, Environmental Engineering and Water Resources Technical Group Student Scholarship awarded to advisee Azivy Che-Aziz.

12. National Oceanographic and Atmospheric Administration (NOAA) Seagrant John A. Knauss Marine Policy Fellowship (2010-2011). Awarded to Professor Rockne PhD advisee Priscilla Viana. Ms. Viana served >1 year at the National Science Foundation Ocean Directorate as a Knauss Fellow, returned to complete her PhD studies at UIC in fall 2011.
13. American Chemical Society (2009). Outstanding Graduate Student, Division of Environmental Chemistry awarded to Professor Rockne PhD advisee Priscilla Viana.
14. American Society of Civil Engineers (2009). Illinois Section, Environmental Engineering and Water Resources Technical Group Student Scholarship awarded to Professor Rockne advisee Priscilla Viana.
15. American Association of University Women (2009-10). International dissertation fellowship awarded to Professor Rockne PhD advisee Priscilla Viana.
16. Vespucci Initiative Summer Institute scholarship (2008). Awarded to Professor Rockne PhD advisee Kelly Granberg from University of Buffalo NSF IGERT Geographic Information Science program.

---

**THESIS/DISSERTATION COMMITTEE SERVICE (49 TOTAL, 20 AS CHAIR, 32 PHD DISSERTATIONS)**

---

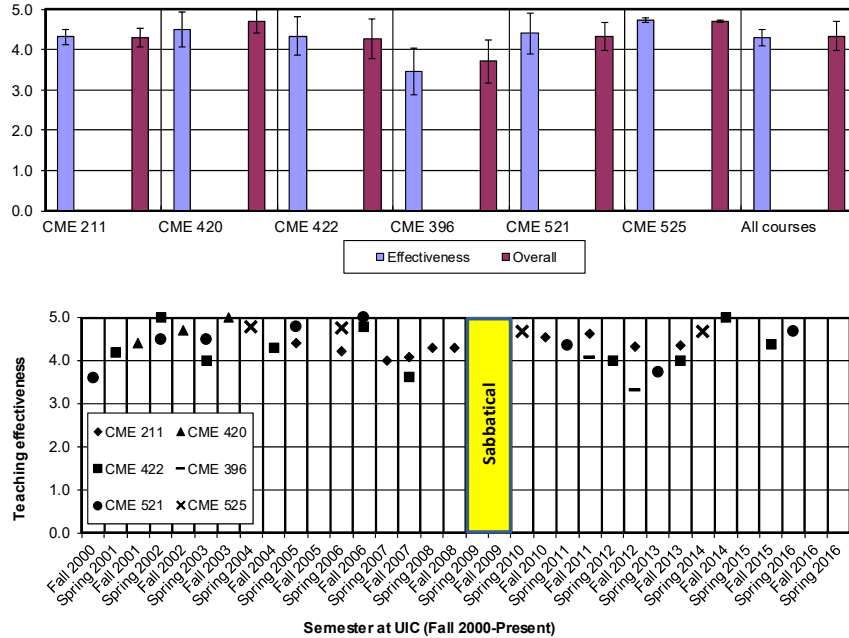
1. Mahsa Izadmehr, **Ph.D. (2021) Chair**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: January.
2. Morvarid Khazraee, **Ph.D. (2020) Chair**. Civil Engineering, University of Illinois-Chicago. Doctoral Dissertation: “Biokinetic and Sediment Structural Controls on Gas Release from Contaminated Sediments.”
3. Adit Chaudhary, **Ph.D. (2020)** Microbiology, University of Illinois at Chicago. Dissertation: “Impact of environmental disturbances on aquatic microbial community structure and function.” December.
4. Sanjeeta Ghimire, **Ph.D. (2020)** Civil Engineering, University of Illinois at Chicago. Dissertation: “Dam and Spillway Safety: Screening technique to identify risky auxiliary spillways at a large scale.” October.
5. John Mulrow, **Ph.D. (2019)** Civil Engineering, University of Illinois at Chicago. Dissertation: “The affluence-technology connection: Metrics, analysis, and implications for sustainable technology”. December.
6. Sepideh Karkouti, **M.S. Material Engineering (2017) Chair** Civil and Materials Engineering, University of Illinois at Chicago. MS Dissertation “The effect of aging under biologically-relevant conditions on the mechanical properties of dental composite”. August.
7. Nicholas Haas, **Ph.D. preliminary (2016)** Civil Engineering, University of Illinois at Chicago. May.
8. Lisha Wu, **Ph.D. preliminary (2016)** Civil Engineering, University of Illinois at Chicago. May.
9. Pralay Gayan, **Ph.D. preliminary (2016)** Chemical Engineering, University of Illinois at Chicago. Dissertation: Surface Modification of Electrode Surfaces for Water Treatment and Sensing Applications. March.
10. Soheil Hosseini, **Ph.D. (2016) Chair** Civil Engineering, University of Illinois at Chicago. Dissertation: “Implications of Carbon Deposition on the Fate of Semi-Volatile Organic Pollutants in the Great Lakes”. March.
11. Raja Kaliappan **Ph.D. (2016) Chair** Civil Engineering, University of Illinois at Chicago. Dissertation: “Sediment Capping Effects on Gas Ebullition, Hyporheic Exchange and Benthic Microbial Community Structure”. February.
12. Solidea Bonina, **Ph.D. (2016) Chair** Civil Engineering, University of Illinois at Chicago. Dissertation: “Carbon Loading to Lake Michigan Sediments”. February.
13. Jiehong Guo, **Ph.D. (2015)** Environmental Science and Occupational Health, School of Public Health, University of Illinois-Chicago. Dissertation: “Spatial Distribution and Time Trend of Organic Pollutant Chemicals in the Sediments of Upper Great Lakes”, June.
14. Azivy Che Aziz, **Ph.D. (2013) Chair**, Civil Engineering, University of Illinois at Chicago. Dissertation: “Polybromodiphenyl Ethers and Polychlorinated Biphenyls in Aquatic Sediments”, November.

15. Kelly Granberg, **Ph.D. (2013) Chair**, Civil Engineering, University of Illinois at Chicago. Dissertation: "Multimedia Source Apportionment of Semi-volatile Organic Contaminants in the Chicago Area of Influence." June.
16. Itzel Godinez, **Ph.D. (2013)**, Civil Engineering University of Illinois at Chicago. Dissertation: "Transport, deposition and release kinetics of nano-TiO<sub>2</sub> in saturated porous media." January.
17. Emre Koken, **M.S. (2012)**, Civil Engineering University of Illinois at Chicago. Dissertation: "Quantitative PCR detection of *Cryptosporidium* oocysts." May.
18. Hua Wei, **Ph.D. (2011)**, Public Health, University of Illinois at Chicago. Dissertation: "PBDEs in sediments of Arkansas, Illinois, and Indiana of the United States." February.
19. Priscilla Viana, **Ph.D. (2011) Chair**, Civil Engineering University of Illinois at Chicago. Dissertation: "Contaminant flux through capped and uncapped sediments." December.
20. Muntasar Al-Hinai, **Ph.D. (2011)**, Public Health, University of Illinois at Chicago. Dissertation: "Mercury in the Dental Clinic." October.
21. Burcu Uyusur, **Ph.D. (2010)**, Civil Engineering University of Illinois at Chicago. Dissertation: "Fate and Transport of Quantum Dot and Uranyl Silicate Nanomaterials in the Subsurface Environment." June.
22. Srinivasa Varadhan, **Ph.D. (2010)**, Civil Engineering University of Illinois-Chicago. Dissertation: "Enhanced Anaerobic Biodegradation of PCBs in Contaminated Sediments Using Periodic Amendment of Iron." May.
23. Xiuhong Zhao, **Ph.D. (2009) Chair**, Civil Engineering University of Illinois at Chicago. Dissertation: "Methyl Mercury in Dental Wastewater." May.
24. Yin Ke, **Ph.D. (2009) Chair**, Civil Engineering University of Illinois at Chicago. Dissertation: "Modeling Active Capping Potential of Contaminated Sediments." May.
25. Jayashree Jayaraj, **Ph.D. (2009) Chair**, Civil Engineering University of Illinois at Chicago. Dissertation: "Fate Analysis of Polybrominated Diphenyl Ethers in Anaerobic Digester Sludge." May.
26. Hatice Sengul **Ph.D. (2009)**, Civil and Materials Engineering, University of Illinois at Chicago, Chicago, IL. Dissertation: "Life cycle analysis of quantum dot semiconductor materials." February.
27. Saikrishnan Ramamurthy **M.S. (2007)**, Civil and Materials Engineering, University of Illinois at Chicago, Chicago, IL. Thesis: "Enhanced anaerobic biodegradation of PCBs in contaminated sediments using iron." October.
28. Hua Wei, **M.S. (2007)**, Environmental and Occupational Health Sciences, University of Illinois-Chicago, Chicago, IL. Thesis: "Analytical method enhancement of PBDEs in the samples from lake sediment, sludge and indoor dust." October.
29. Ravikumar Srirangam **Ph.D. (2007)**, Civil and Materials Engineering, University of Illinois at Chicago, Chicago, IL. Dissertation: "Enhanced anaerobic biodegradation of PCBs in contaminated sediments using hydrogen." July.
30. Menka Mittal, **Ph.D. (2006) Chair**, Civil and Materials Engineering, University of Illinois at Chicago, Chicago, IL. Dissertation: "Dynamic models of multi-trophic interactions in microbial food webs." October. **Chair.**
31. Shelie Miller, **Ph.D. (2006)**, Civil and Materials Engineering, University of Illinois at Chicago, Chicago, IL. Dissertation: "Comparative life cycle analysis of soybean-based and mineral oil lubricants in aluminum rolling." March.
32. Justin Ford, **MS. (2005)**, Environmental and Occupational Health Sciences, University of Illinois at Chicago, Chicago, IL. Dissertation: "Sedimentation rates in the Laurentian Great Lakes as determined by alpha spectroscopy." September.
33. Wenlu Song, **Ph.D. (2005)**, Environmental and Occupational Health Sciences, University of Illinois-Chicago, Chicago, IL. Dissertation: "Temporal and spatial distribution of PBDEs and PCBs in the sediments of the Great Lakes as well as the estimation of them in other media." August.

34. Laura Drumm, **M.S. (2004) Chair**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Indiana Harbor Sediments: Low Density Separation for Treatment of Hydrophobic Contaminants." October.
35. Erin Argylin, **Ph.D. (2004)**, Earth and Environmental Sciences, University of Illinois-Chicago, Chicago, IL. Dissertation: "Climate variability and lake-level response in the upper Laurentian Great Lakes, ~5000 years ago to present." June.
36. Kranthi Maturi, **M.S. (2004)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Enhanced electrokinetic remediation of soils contaminated with co-existing PAHs and heavy metals." March.
37. Prateek Gupta, **M.S. (2004)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Bacterial adhesion on carbide-derived carbon." March.
38. Chandrasekaran, Srividya, **M.S. (2003)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Determination of the chemical availability of HOCs in soils." July.
39. Menka Mittal, **M.S. (2003) Chair**, Civil Engineering University of Illinois-Chicago. Master's Thesis: "Transport of Anaerobic Electron Acceptors in Bioremediated Sediments and Detection of PAH Metabolites." June.
40. David Buckley, **M.S. (2003) Chair**, Civil Engineering University of Illinois-Chicago. Master's Thesis: "Recent Soot and Organic Carbon Flux to the Great Lakes: Links to Atmospheric Transport and Availability of Organic Pollutants in Sediments." May.
41. Kalyan Chandhuri, **M.S. (2003)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Integrated electrochemical oxidation of organic contaminants using native and chelated native iron in contaminated soils." March.
42. Omprasad Narla, **M.S. (2003)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Remediation of 2,4 Dinitrotoluene contaminated soils." March.
43. Birat Pandey, **M.S. (2002)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Application of traffic assignment to the prediction of congestion from road closures." December.
44. Jayashree Jayaraj, **M.S. (2002) Chair**, Civil Engineering, University of IL-Chicago, Chicago, IL. Thesis: "Reductive Dechlorination of Perchloroethylene by a Green Solvent in Bioreactors." October.
45. Leslie Shor, **Ph.D. (2002)**, Chemical Engineering, Rutgers University. New Brunswick, NJ. Dissertation title: "Predicting Bioavailability of Polycyclic Aromatic Hydrocarbons in Estuarine Sediments: Decoupling Biological, Physical and Chemical Processes." April.
46. Nicole Roach, **M.S. (2002)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Mineral structure and Particle Morphology of Kaolin Subjected to Electrokinetic Remediation." March.
47. Monika Tkaczyk, **M.S. (2002) Chair**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Master's Thesis: "Rainfall Runoff and Flow Analysis to Investigate Flow Paths in Forested Watersheds Utilizing TOPMODEL." January.
48. Richard Saichek, **Ph.D. (2001)**, Civil Engineering, University of Illinois-Chicago, Chicago, IL. Dissertation: "Electrokinetically Enhanced In-Situ Flushing for HOC-Contaminated Soils." November.
49. Wenhsin Liang, **Ph.D. (2001)**, Environmental Science, Rutgers University. New Brunswick, NJ. Dissertation: "Bioavailability of Polycyclic Aromatic Hydrocarbons to Bacteria in Estuarine Sediments." October.

---

## TEACHING EVALUATIONS



Students for the improvement of teaching (SIT) student evaluations for all courses taught since initial appointment as Assistant Professor in Fall 2000. Scores are for teaching effectiveness and overall course quality on a scale of 1-5, 5 being excellent. Teaching effectiveness is  $4.3 \pm 0.2$  for all courses.

## SERVICE TO COMMUNITY

### 2017- National Service

#### Administrative and Board (2 total)

1. Director, Environmental Engineering Program (8/2017-8/2021), Division of Chemical, Bioengineering, Environmental and Transport Processes (CBET), Engineering Directorate, National Science Foundation
2. Board of Directors, Association of Environmental Engineering and Science Professors Foundation (1/2020-present). Elected to the Foundation Board with a mission of outreach, education, and developing the future of the environmental engineering and science profession.

#### Committees (9 total)

1. Leadership and STEP Science Committees, National Sewage Surveillance Network Intergovernmental Leadership Committee, CDC, NSF, NIH, HHS, DHS, USGS, EPA.
2. Chair, Risk Mitigation Team (2020-2021), Task Force on Contaminants of Emerging Concern in Drinking Water, National Science and Technology Council (NSTC), Executive Office of Science and Technology (OSTP), President of the United States.
3. Chair, (2018-), Interagency Collaborative for Environmental Monitoring and Modeling (ICEMM), US Agencies: NRC, DOE, DoD, USGS, EPA, NSF.
4. NSF Liaison, United States National Academy of Sciences, Engineering, and Medicine (NASEM), Environmental Health Matters Initiative Committee.
5. Member, United States National Academy of Sciences, Engineering, and Medicine (NASEM) Intergovernmental Disaster Science Standing Committee (past). Currently renamed the Action Collaborative for Disaster Science.



6. Member, Subcommittee on Water Availability and Quality (SWAQ), National Science and Technology Council (NSTC), Executive Office of Science and Technology (OSTP), President of the United States.
7. Member, Subcommittee on Arctic/Polar Science, National Science and Technology Council (NSTC), Executive Office of Science and Technology (OSTP), President of the United States.
8. Member, Subcommittee on Emerging Pollutants, National Science and Technology Council (NSTC), Executive Office of Science and Technology (OSTP), President of the United States.
9. NSF Representative, International Center for Integrated Water Resources Management (ICIWaRM), US Army Institute for Water Resources

**2000- University of Illinois at Chicago**

**Administrative (3 total)**

1. Associate Dean for Research, College of Engineering (2021-present), College of Engineering.
2. Interim Department Head (2014-2016), Department of Civil and Materials Engineering
3. Director of Undergraduate Studies (2004-2014), Department of Civil and Materials Engineering

**Curriculum Development (6 Total)**

1. Complete revision of the University of Illinois at Chicago, College of Engineering Environmental Engineering minor. Worked with faculty from Civil, Chemical, and Mechanical Engineering to modernize and update the curriculum (approved Fall 2011)
2. Developed Graduate Curriculum Program for NSF IGERT: Landscape, Ecological and Anthropogenic Processes (2006-07)
3. Summer curriculum for inner-city Chicago public school district teachers to improve K-12 science teaching in conjunction with the Peggy Notebaert Nature Museum with *No Child Left Behind* funding (2006)
4. Developed two new classes for a comprehensive water resources engineering course curriculum (2003-04)
5. Recruitment campaign of local engineering professionals for part-time master's degrees to enhance enrollment at UIC (2002)
6. Developed courses, outlines and brochures describing the new environmental engineering curriculum at UIC (2000-2001)

**New Course Development/Upgrades (14 Total)**

1. **CME 396** "Senior Design I" Fall 2011. Complete re-design of course from scratch. Developed entire design content to be integrated with the CME design curriculum combined with CME 397.
2. **CME 397** "Senior Design II" Spring 2011. Redesign course content and evaluation system from peers, faculty, and industrial evaluators
3. **CME 540** "Interdisciplinary Approaches to the Study of Integrated Human/Natural Landscapes," Cross-listed between Biology, Civil Engineering, Earth and Environmental Sciences and Urban Planning
4. **CME 546** "Research Methods for Landscape Ecological and Anthropogenic Processes," Cross-listed between Biology, Civil Engineering, Earth and Environmental Sciences and Urban Planning
5. **CME 547** "Field Experiences in Landscape Ecological and Anthropogenic Processes," Cross-listed between Biology, Civil Engineering, Earth and Environmental Sciences and Urban Planning
6. **CME 548** "Capstone Project in Landscape Ecological and Anthropogenic Processes," Cross-listed between Biology, Civil Engineering, Earth and Environmental Sciences

and Urban Planning

7. **CME 594** “Environmental Research Seminar”
8. **CME 211** “Fluid Mechanics and Hydraulics”
9. **CME 311** “Hydrology and Water Resources Engineering”
10. **CME 594** “Environmental Biogeochemistry Seminar”
11. **CME 521** “Environmental Microbiology”
12. **CME 422** “Wastewater Treatment Design”
13. **CME 525** “Applied Environmental Biotechnology”
14. **CME 420** “Water and Wastewater Analysis Laboratory”

#### **Symposia/Conference Chairs (9 Total)**

1. Conference Chair *Battelle Contaminated Sediments Conference*, Nashville, TN January 2022.
2. Session Chair, “Gas Ebullition and Contaminated Sediments,” In: *Battelle Contaminated Sediments Conference*, Nashville, TN January 2022.
3. Session Chair, “Gas Ebullition and Contaminated Sediments,” In: *Battelle Contaminated Sediments Conference*, New Orleans, LA January 2017.
4. Session Chair, “Gas Ebullition and Contaminated Sediments,” In: *Battelle Contaminated Sediments Conference*, New Orleans, LA January 2015.
5. Conference Chair, Water Research Forum at the University of Illinois at Chicago. Developed the conference, speakers, and published the forum proceedings with funding from the UIC Area of Excellence in *Urban Water Infrastructure, Policy, and Infectious Diseases*. Chicago, IL April 10, 2012.
6. Session Chair, “Bioremediation,” In: *BIOMICROWORLD 2009: 3<sup>rd</sup> International Conference on Environmental, Industrial and Applied Microbiology*, Lisbon, Portugal December 3, 2009.
7. Session Chair, “PTS control techniques and remediation,” In: *5th Persistent and Toxic Substances Symposium*, Chinese National Academy of Sciences, Beijing, September 21, 2008.
8. Session Chair, “Nanotechnology Applications in the Health/Biological Processes,” In: *Interdisciplinary Science and Engineering Materials Research Group*, Chicago, IL April 17, 2008.
9. Conference Co-Chair and Organizer for the *25<sup>th</sup> Annual Midwest Environmental Chemistry Workshop*, University of Illinois-Chicago, October 2002. Assisted in raising over \$17K in funding

#### **Committee Service (23 total)**

##### **Internal**

1. Ad hoc UIC College of Engineering Supervision and Safety sub-committee for the Roosevelt Road Building Student Activities Center (2016)
2. University of Illinois-Chicago General Education Council (2015-6/2017)
3. College of Engineering Administrative Council (2014-12/2014)
4. Chair, UIC Department of Electrical and Computer Engineering head search committee (2014)
5. Ad hoc UIC College of Engineering Dean evaluation committee (2013)
6. College Promotion and Tenure Committee, College of Engineering (2012-2014)
7. Secretary, UIC College of Engineering, Executive Committee (2012-2014)
8. UIC Office of the Vice Chancellor for Research “Areas of Excellence” Committee for developing strategic funding initiatives at UIC. Member of the “*URGE*” group
9. UIC Faculty Senate (2011-2014)
10. Chair, Graduate Curriculum, NSF IGERT Landscape, Ecological and Anthropogenic Processes (2006-2010)
11. College of Engineering, Education Policy Committee (2005-2014)
12. Institute for Environmental Science and Policy steering committee (2004-2010)
13. UIC 2010 Civil and Materials Engineering (CME) committee

14. Chair, UIC Chemical Safety Committee/subcommittee of the Health and Safety Committee (2003-2008)
15. CME Departmental Advisory Committee (2000-2008)
16. CME graduate student committee (2001-2003)
17. CME undergraduate student committee (2003-2014)
18. Langelier UIC/UIUC scholarship committee (2001-2008)

#### **External**

1. Member, *Civil Engineering Body of Knowledge-3 (BOK-3) Task Committee*, ASCE: American Society of Civil Engineering (2016-)
2. Member, *Environmental Engineering Program Leaders Committee*, AEESP: Association of Environmental Engineering and Science Professors (2016-).
3. Member, *Capping Research and Development Summit*, United States Environmental Protection Agency Great Lakes National Program Office, Chicago, IL (February 2013).
4. Member, *Mercury Science in the Great Lakes "Key Processes" Committee* tasked with developing a state of the science review of mercury methylation, demethylation, volatilization, sedimentation, bioaccumulation, and biomagnification processes in the Great Lakes for the Environmental Protection Agency (May 2012).
5. Member, *Strategic Environmental Research and Development Program (SERDP) Contaminated Sediments Research Program Steering Committee*. DoD (August 2004).

#### **1998-1999 Rutgers University, Department of Chemical Engineering**

- Taught sessions for “Process Engineering”
- “Special Problems for Chemical Engineers”

#### **1993-1997 University of Washington, Environmental Engineering and Science**

- “Current Research in Bioremediation” seminar
- Lectured for “Microbial Degradation of Toxic Contaminants”

#### **REVIEW ACTIVITIES (17 TOTAL JOURNALS, 7 FUNDING AGENCIES)**

##### ***Journal review (manuscripts reviewed since 2011 and journal impact factor shown):***

1. Associate Editor, *Proceedings of the Library of Science (PLoS One)*.
2. Associate Editor, *Journal of Soils and Sediments* Impact factor 2.574 (*JCR 2010*) Reviewer since 2012.
3. *Environmental Science and Technology* Impact factor 4.827 (*JCR 2010*, #1 in total citations in the Environmental Engineering and Environmental Sciences categories) Reviewer since 2002.
4. *Chemosphere* Impact factor 3.155 (*JCR 2011*) Reviewer since 2006.
5. *Water Research* Impact factor 4.546 (*JCR 2011*) Reviewer since 2003.
6. *Proceedings of the Library of Science (PLoS One)* Impact factor 4.411 (*JCR 2010*) Reviewer since 2012. **Now associate editor.**
7. *Journal of Hazardous Materials* Impact factor 3.723 (*JCR 2011*) Reviewer since 2006.
8. *Marine Pollution Bulletin* Reviewer since 2011. Journal of marine pollution science.
9. *Journal of Hazardous Waste Management* Reviewer since 2011. Journal of environmental engineering and science.
10. *Journal of Applied Microbiology* Reviewer since 2006. Journal of microbiology.
11. *Journal of Industrial Microbiology and Biotechnology* Reviewer since 2006. Journal of microbiology.
12. *Journal of Environmental Engineering and Science* Reviewer since 2005. Environmental Engineering and Science journal.
13. *Applied Microbiology and Biotechnology* Reviewer since 2004. Journal of microbiology.
14. *Geochimica et Cosmochimica Acta* Reviewer since 2003. Journal of environmental chemistry.
15. *Biotechnology Progress* Reviewer since 2000. Journal in Microbiology.

16. *Environmental Toxicology and Chemistry* Reviewer since 2001. Journal of environmental chemistry.
17. *Water Environment Research* Reviewer since 2002. Journal of aquatic research.

**Proposal review:**

1. Small Business Innovative Research (SBIR), United States Environmental Protection Agency (9/2007) and (9/2012)
2. Strategic Environmental Research and Development Program (SERDP) Contaminated Sediment Research Proposals. Department of Defense. (2003-)
3. National Science Foundation (NSF). (2003-). Multiple unsolicited/solicited proposal reviews; Environmental Engineering and Science division panel reviews (2/2005), (2/2006), (12/2006), (5/2007), (11/2008), (3/2016) and (11/2021); Improving Undergraduate STEM Education (IUSE) panel review (4/2014 and 3/2015); PIPP Pandemic Prevention (2/2022)
4. American Association for the Advancement of Science. (2003-)
5. Petroleum Research Fund. American Chemical Society. (2003-)
6. Cooperative Institute for Coastal and Estuarine Environmental Technology (2004-)
7. University of Illinois at Chicago Campus Research Board (2004-)

**PRESS COMMUNICATION AND ARTICLES (AUTHOR CITED IF AVAILABLE, PUBLICATION IF ANONYMOUS)**

1. Nitkin, A. "26 CPS Schools Have Lead In Their Water: What Does This Mean For Kids?" *DNAInfo*, June 20, 2016. <https://www.dnainfo.com/chicago/20160620/downtown/do-chicago-schools-have-lead-problem-heres-what-you-need-know>
2. Parmet, S. "Examining pollution in Great Lakes sediment" *UIC News*, February 3, 2016.
3. Chemical pollution in the Great Lakes: <https://www.youtube.com/watch?v=xJak30cIGGA>
4. Otto, J. COVER STORY "Wetland born at expo: Nutrient management goal of conservation sites" *Illinois Agrinews*, August 14, 2015.
5. Ritter, S. COVER STORY: "Persistence pays off in studying persistent organic pollutants: Decades-long campaign begins to reveal how these compounds cycle through and impact the environment" *Chemical and Engineering News*, March 2, 2015. **93**(9):10-14.
6. Super, J. "From Sewage Ponds to Great Lakes Sediment: Karl Rockne's Passion for Water Quality" *UIC Engineering*, Fall 2013. <http://issuu.com/coeuic/docs/2013fall>
7. Guarino, M. "Bubbly Creek: Environmental advocates want to transform waterway on Chicago's South Side" *Chicago Tribune*, April 22, 2009. <http://www.chicagotribune.com/news/local/chicago/chi-bubbly-creek-city-zoneapr22,0,384435.story>
8. Lubick, N. "Dental offices contribute to methylmercury burden" *Environmental Science and Technology*, April 15, 2008. **42**(8):2712.
9. "Neurotoxic mercury waste pollution from dentistry" *Medical News Today*, March 27, 2008. <http://www.medicalnewstoday.com/articles/101868.php>.
10. "Dental Chair a possible source of Neurotoxic Mercury Waste" *Science Daily*, March 26, 2008. <http://www.sciencedaily.com/releases/2008/03/080326161639.htm>.
11. "Dental chair a possible source of neurotoxic mercury waste" *Science Blog*, March 26, 2008. <http://www.scienceblog.com/dental-chair-possible-source-neurotoxic-mercury-waste-15747.html>.
12. "Dental office mercury – pollution source" *United Press International*, March 27, 2008. According to University of Illinois at Chicago press office as of March 28, 2008: There are >34 additional stories (3 in print and 31 broadcast) that are the same or very similar to the *UPI* story "Dental office mercury – pollution source"
13. "Dental chair a possible source of neurotoxic mercury waste" *PHYSORG*, March 26, 2008. <http://www.physorg.com/news125767392.html>.

14. "Dental chair a possible source of neurotoxic mercury waste" *EurekaAlert*, March 26, 2008. [http://www.eurekaalert.org/pub\\_releases/2008-03/uoia-dca032608.php](http://www.eurekaalert.org/pub_releases/2008-03/uoia-dca032608.php).
15. Francuch, P. "Dental chair a possible source of neurotoxic mercury waste" *UIC News Release*, March 26, 2008. <http://tigger.uic.edu/htbin/cgiwrap/bin/newsbureau/cgi-bin/index.cgi?from=Releases&to=Release&id=2133&start=1200438575&end=1208214575&topic=0&dept=0>
16. "Mercury down the dental drain" *Chemical and Engineering News*, March 24, 2008. **86**(12):40.
17. Nesbitt, J. "Bubbly Creek: Cleaning up what lies beneath" *Brownfield News*, June 2007.
18. "Contaminated sediment clean-up" *Commissioner Frank Avila Speaks*, CAN-TV television show aired: February 21, 2007. <http://video.google.com/videoplay?docid=-8550135338012357193>.
19. "Emerging pollutants" *Commissioner Frank Avila Speaks*, CAN-TV television show aired: February 21, 2007. <http://video.google.com/videoplay?docid=-327685241423425086>.
20. Wisby, G. "Engineer favors natural approach to clean waterways" *Chicago Sun-Times*, March 9, 2004. pg. 38.
21. Francuch, P. "Low-cost remedy for environmental cleanup" *UIC News*, February 18, 2004. **22**(21):1.