NANCY G. LOVE, Ph.D., P.E., BCEE

Borchardt and Glysson Collegiate Professor
Fellow, Water Environment Federation; International Water Association; and
Association of Environmental Engineering and Science Professors
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RESEARCH EMPHASIS

The Love Research Group works at the interface of water, infrastructure and public health in both domestic and global settings. We focus on assessing and advancing public and environmental health using chemical, biological and analytical approaches applied to water systems using both physical experiments and computational models. Through our work, we: evaluate the fate of chemicals, pathogens and contaminants of emerging concern in water with relevance to public health and the environment; use technologies to sense and remove these constituents; and advance technologies that recover useful resources from water. I emphasize interdisciplinarity and critical thinking in students; consequently, many of my students are co-advised across disciplines and sectors and gain a broad range of professional skills in return.

EDUCATION

Doctor of Philosophy Environmental Systems Engineering, Clemson University Advisor: C. P. Leslie Grady Jr.	1994
Masters of Science Civil Engineering, University of Illinois at Urbana-Champaign Advisor: John T. Pfeffer	1986
Bachelors of Science Civil Engineering, University of Illinois at Urbana-Champaign	1984

PROFESSIONAL EXPERIENCE AND LICENSURE

Professor Department of Civil and Environmental Engineering, University of Michigan Co-Founder and Co-PI, Environmental Biotechnology Lab, University of Michigan	2008-present
Adjunct Professor Institute of Biotechnology, Addis Ababa University, Ethiopia	2016 - present
Staff UNESCO-IHE (United Nations Water Education Institute), sabbatical	Feb – July 2014
Associate Dean for Academic Programs and Initiatives Horace H. Rackham School for Graduate Studies	2011 - 2012
Board Certified Environmental Engineer (BCEE) Certified by Eminence, American Academy of Environmental Engineers	2011
Professional Engineer License Environmental Engineering, State of Michigan, License No. 6201057483.	May 2010 - present
Department Chair Department of Civil and Environmental Engineering, University of Michigan	2008 – 2011
Faculty Affiliate University of Michigan Graham Environmental Sustainability Institute	2009-present
Professor Department of Civil and Environmental Engineering, Virginia Tech	2005 – 2007
Adjunct Professor Department of Biological Sciences, Virginia Tech	2002 – 2007

Associate Professor Department of Civil and Environmental Engineering, Virginia Tech	2000 – 2005
Assistant Professor Department of Civil and Environmental Engineering, Virginia Tech	1994 – 2000
Co-Founder and Co-Principal Investigator at Virginia Tech	
Environmental BioNanoTechnology Laboratory, Virginia Tech	2005 – 2007
Fralin Environmental Biotechnology Laboratory, Virginia Tech	1995 – 1999
Project Engineer CH2M Hill, Inc. Dallas, Texas	1986 – 1989

MAJOR HONORS AND NOTABLE RECOGNITIONS

• Kappe Lecture, American Academy of Environmental Engineers & Scientists	2019 - 2020
• Distinguished Faculty Fellow in Sustainability, University of Michigan	2017-present
• Named Borchardt and Glysson Collegiate Professor, University of Michigan	2016
• Elected Fellow, Association of Environmental Engineering and Science Professors.	2015
• *Environmental Science and Technology Letters*, Best of the Best Paper Award for Delgado Vela et al. 2015 (see publications list).	2015
• Selected AEESP Distinguished Lecturer.	2015-2016
• Elected Fellow of the International Water Association.	2014
• Gordon Maskew Fair Distinguished Engineering Educator, Water Environment Federation.	2011
• Elected Fellow of the Water Environment Federation. Inaugural class.	2011
• Certification by Eminence, Board Certified Environmental Engineer (BCEE). American Academy of Environmental Engineers.	2011
• President and Member of the Board, Association of Environmental Engineering and Science Professors. Position on Board of Directors is elected nationally, and position of president is then elected by the Board of Directors.	2007 - 2011
• Rudolfs Industrial Waste Management Medal for noteworthy accomplishments in industrial waste management research, Water Environment Federation. For Henriques et al. 2007. Activated sludge inhibition by chemical stressors – a comprehensive study. *Water Environment Research* 79(9):940-951.	2008
• CEE Alumni Teaching Excellence Award, Virginia Tech	2006
• Women's Center Advancing Women Award, Virginia Tech	2005
• Excellence in Research Award, College of Engineering, Virginia Tech	2005
• Faculty Fellow, $15,000 over 3 years, College of Engineering, Virginia Tech	2003 – 2006
• Harrison Prescott Eddy Medal for outstanding contribution to wastewater principles/process research, Water Environment Federation. For Charles B. Bott and Nancy G. Love, for "Investigating a mechanistic cause for activated sludge deflocculation in response to shock loads of toxic electrophilic chemicals." *Water Environment Research*, 74:306-315 (2002).	2003
• Outstanding Young Alumni, College of Engineering & Science, Clemson Univ.	2002
• Paul L. Busch Award for Innovation in Applied Water Quality Research, Water Environment Research Foundation ($100,000)	2001
• National Science Foundation CAREER Award Recipient	1995
• American Association of University Women Selected Professions Fellow	1993
• Chi Epsilon Civil Engineering Honor Society initiate	1985

ADMINISTRATIVE ACCOMPLISHMENTS

- As department chair of Civil and Environmental Engineering at the University of Michigan, I lead or oversaw: a significant transition in administrative staff; centralization of departmental operating management to enhance efficiencies; the development of procedures to achieve a balanced budget; the development of new strategic directions for the department; an increase in external funding of 40%; the doubling of student enrollments within a 5 year period; addition of $8.5 million to the department's endowment; hiring five assistant professors, all of whom have achieved tenure and promotion. — Jan 2008–Aug 2011
- As a co-PI of the $3.5 million Virginia Tech NSF Advance Institutional Transformation Grant focused on women's leadership in academia, I lead activities associated with graduate student and post-doctoral engagement toward the professoriate. — July 2003–June 2008

ADVISING RESPONSIBILITIES

I am currently serving as advisor for 2 undergraduate research students, 3 master's students, and 8 Ph.D. students (most are co-advised). I also serve as co-advisor for 3 Ph.D. students at Addis Ababa University in Ethiopia. Previously, I advised 39 M.S. students with thesis or significant project, 15 Ph.D. students, 7 post-doctoral research associates, and 32 undergraduate research projects/theses.

NOTABLE NATIONAL RECOGNITIONS FOR STUDENTS AS MENTEES

- Hollie Adejumo, National Science Foundation Graduate Research Fellowship Recipient — 2017-2020
- Brett Wagner, National Science Foundation Graduate Research Fellowship Recipient — 2016-2019
- Lauren Stadler, CH2M/Association of Environmental Engineering and Science Professors Best Dissertation Award — 2016
- Jeseth Delgado Vela, Ford Foundation Dissertation Fellowship — 2016-2017
- Andrea McFarland, National Science Foundation Graduate Research Fellowship Recipient — 2016-2019
- Lauren Stadler and Jeseth Delgado-Vela, Best Student Presentation, AEESP Biannual Meeting — 2015
- Jeseth Delgado-Vela, National Science Foundation Graduate Research Fellowship Recipient — 2012-2015
- Lauren Stadler, National Science Foundation Graduate Research Fellowship Recipient — 2011-2014
- Sherri M. Cook, National Science Foundation Graduate Research Fellowship Recipient — 2009-2012
- Hardin, S. Water Environment Federation 81st Annual Conference and Exposition, Chicago, IL, 1st Place - Best Poster Award. — 2008
- Henriques, I. D. S. Water Environment Federation 76th Annual Conference and Exposition, Los Angeles, CA. 1st Place - Best Poster Award. — 2003
- Charles B. Bott, Parsons Engineering Science/Association of Environmental Engineering and Science Professors Doctoral Thesis Award — 2002

CURRENT AND RECENT PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

- American Association for the Advancement of Science, Member — 2016-current
- *American Society of Civil Engineers*, Member — 1984 – 2013
  - EWRE Sustainability subcommittee — 2007 - 2009
- *American Society for Engineering Education,* Member — 2009 - 2013
- American Academy of Environmental Engineers and Scientist (AAEES), Member and Board Certified Environmental Engineer (by eminence) — 2011 – present; 2012 – current
  - Environmental Engineering and Science Foundation Board of Directors — 2014-2016
- *American Society for Microbiology,* Member — 1991–2010
- *Association of Environmental Engineering and Science Professors*
  - Member — 1994 – present
  - Master's Thesis Awards Subcommittee (Chair, 1999) — 1997 – 1999
  - Awards Committee (Chair, 2006-2007) — 2004 – 2007
  - Board of Directors (Elected by membership; elected by board as Vice-President 2008-2009; President-Elect 2009-2010; President 2010-2011) — 2007 – 2011
  - Co-Chair, AEESP 2017 Biannual Conference — 2016-2017
  - AEESP Fellows Selection Committee — 2018
- *Environmental Protection Agency* — 2010 - 2012
  - EPA Science Advisory Board, Drinking Water Subcommittee
- *International Water Association,* Member — 1989 – present
  - Environmental Engineering Education specialists group, chair effective 2014 — 2006 - present
  - Microbial Ecology in Water Engineering (formerly Activated Sludge Population Dynamics) Specialty Group — 1995 – present
  - MEWE program committee — 2005 - present
  - Chair, MEWE2013 conference, Ann Arbor, Michigan USA — 2012 - 2013
  - Leading Edge Technology (LET) Program Committee — 2007 – 2009
  - Instrumentation, Control and Automation Group — 2001 – 2007
  - Organizing Committee, Nutrient Management 2007 Workshop — 2005 – 2007
  - MEGA working group member — 2005 – 2008
  - Biofilms 2010 Conference Program Committee — 2009 – 2010
- National Society of Professional Engineers, Member — 1980s, 2015, 2018
- Appointed Member, *Michigan Department of Agriculture/Michigan Department of Environmental Quality Food Processors Working Group* — 2009 - 2010
- *Michigan Economic Development Corporation (MEDC) Water Cluster Committee*, establishing water-based technology investment goals for Michigan. — 2008 – 2010
- *Member, NSF's CLEANER (later, WATERS Network) Initiative* as (a) planning phase participant, (b) Co-PI on environmental impacts to coastal margins planning grant and (c) Member, sensor sub-committee. — 2002 – 2007
- Appointed by Governors Warner and Kaine (Virginia) to the *Scientific and Technical Advisory Committee to the Chesapeake Executive Council* — 2005 – 2007
  - Workshop co-chair and author, Establishing a Research Agenda for Assessing the Bioavailability of Wastewater-Derived Organic Nitrogen in Treatment Systems and Receiving Waters, September 27 and 28, 2007, Baltimore, Maryland. http://www.chesapeake.org/stac/Pubs/eonreport.pdf
- *Water Environment Federation,* Member — 1986 – present
  - Associate Editor, *Water Environment Research* — 2002 – 2005
  - Research Symposium Subcommittee — 1999 – 2003

Virginia WEA Student Activities Committee	1997 – 2007
Work Force Task Force – WEF Presidential Appointment	2008 – 2009
Nutrient Specialty Conference Program Committee	2008 - 2009
Chair, Academic Committee	2009 – 2013
Member, *Water Environment Research* Journal Editor-in-Chief search	2009

- *Water Environment Research Foundation*

Chlorination Control and Monitoring Practices Project Advisory Committee	2000 – 2003
Wastewater Security Project Subcommittee	2003 – 2004
Sensors for Security in WWT Systems Project Advisory Committee	2005 – 2007
Paul L. Busch Award Selection Committee	2005 – 2011
Leaders Innovation Forum for Technology (LIFT) Steering Committee	2015 – current
Bench and Pilot Studies of the Membrane Aerated Biofilm Reactor Project Advisory Committee, U2R14	2016-2018

- *Women in Engineering Leadership Institute (WELI) Strategic Planning Committee* — 2004 – 2005

MAJOR COMMUNITY SERVICE AND OUTREACH ACTIVITIES

- *City of Flint Technical Advisory Committee*. Service to Mayor Karen Weaver's efforts on behalf of the city undergoing recovery after the water crisis. — 2017 – current
- *Train-the-Trainers.* Design, develop and deliver a curriculum about faucet-mounted point-of-use filters to Flint residents who will be trainers of other Flint residents. Syndicate the curriculum to other communities with input from Flint community and partners. — 2018 - current

UNIVERSITY TEACHING RESPONSIBILITIES

Introduction to Environmental Engineering; Models in Environmental Engineering; Water and Wastewater Treatment Design; Applied Biology of Environmental Systems; Biological Treatment Processes: Theory and Design; Environmental Microbiology; Introduction to Civil and Environmental Engineering; Engineering Solutions to Global Water Issues (Freshmen Design – Build – Test course); Decentralized Water Supply, Hygiene and Sanitation (co-produced with faculty at Addis Ababa University, Ethiopia); Robots, Sensors and Smart Water Systems (co-developed Freshmen Design-Build-Test Course)

MAJOR UNIVERSITY, COLLEGE AND DEPARTMENT SERVICE RESPONSIBILITIES

University of Michigan

- Advisory Group: U-M Lead and Copper Rule Project, Graham Institute overseeing Mott Foundation project. — 2018-current
- Civil and Environmental Engineering Strategic Plan Implementation and Development Committee, Revising plan in 2017-2018 — 2013-current
- College of Engineering Graduate Recruitment, Retention & Summer Programs Advisory Group — 2017-2018
- Internal Advisory Board Member, Center for Socially-Engaged Design — 2017-2020
- Administrative Structure Working Group, School of the Environment and Sustainability Transition Subcommittee — 2017
- U-M ADVANCE LAUNCH Committee Chair — 2016-2017
- College of Engineering Promotion, Tenure and Reappointment Process Review Committee, Chair — 2017
- College of Engineering Faculty Search Committee for positions in Engineering Education Research (EER) — 2015-2016
- Ethiopia – Michigan Collaborative Consortium (EMC2) Planning Committee, appointed by Assoc Provost James Holloway — 2015-2018
- Provost's Committee on Environment and Sustainability — 2016

- Provost's Poverty Visioning Committee 2015-2016
- President's Advisory Commission on Women's Issues 2014-2015
- President's Postdoctoral Fellowship Advisory Committee 2014-2015
- Rackham Graduate School Dean Search Committee 2014
- Provost's Promotion and Tenure Committee 2013
- Mentoring Others Results in Excellence (MORE) Committee, Rackham Graduate School, Member and Chair 2012 - 2013
- Alumni Liaison Committee, Civil and Environmental Engineering 2012-2014
- Deans Advisory Committee on Female Faculty, College of Engineering 2012-2013
- Faculty Search Committee Co-Chair, Civil and Environmental Engineering 2011-2012
- College of Engineering Alumni Awards Selection Committee 2011
- Graham Environmental Sustainability Institute, Executive Committee 2009 - 2011
- College of Engineering Dean's Advisory Committee on Faculty Diversity Spring 2010 - 2012
- Provost's Office - Classroom Emergency Training Video Planning Group Fall 2008 – 2009
- College of Engineering *ad hoc* Committee on Graduate Student Excellence Summer 2008

Virginia Tech

- Chair, College of Engineering "Think Tank" Committee (6 faculty) 2006 – 2007
- Space/Overhead Return Allocation *ad hoc* Committee, Provost apptmt 2005
- College of Engineering Dean's Search Committee 2005
- co-Coordinator, Via Academic Preparation Program for graduate student professional development, Dept of Civil and Environmental Engineering 2004 – 2007
- co-Principal Investigator and Advance Professor for $3.5 million NSF Advance Institutional Transformation grant focused on increasing the participation and advancement of women in academic STEM careers. Chair: Advancing Women into the Profession 2003 – 2006
- Environmental Public Health Committee 2003 – 2004
- Provost's Implementation Committee, Biomedical & Public Health Institute 2002
- Board of Directors, WPI, Inc., a Virginia Tech affiliated company. 2001 – 2003
- Provost's Environmental Health Committee 2002
- Provost's Committee on Biomedical Research 2001 – 2002
- College of Engineering Diversity Committee 2001 – 2005
- Environmental Engineering Laboratory Coordinator & staff supervisor 1997 – 2005
- University Cross Cutting Initiatives Committee, Environment & Energy 1998 – 2000
- Fralin Biotechnology Center 5 Year Review Committee 2000
- Environmental Engineering Graduate Student Recruitment Officer 2000

Other Universities

- Science Advisory Board, ReNUWIt Engineering Research Center, Stanford University, University of California-Berkeley, Colorado School of Mines, New Mexico State University Fall 2015 - current
- Advisory Board Member, University of Iowa NSF Sustainable Water Development Graduate Program 2017-present

FUNDED PROJECTS
(Total Value: $29.3 million; Share Value: $7.4 million)

Research Support Received – External Programs
(Total Value: $21.6 million; Share Value: $5.8 million)

1.	McElmurry, S. P., M. Seeger, N. G. Love, B. Kerkez, J. A. MacDonald Gibson. COLLABORATIVE PROPOSAL: CRISP 2.0 Type 2 – Water and Health Infrastructure Resilience and Learning (WHIRL). National Science Foundation	$2 million 09/18 – 08/22 5% share
2.	Love, N. G., V. Bertacco, B. Kerkez, L. Larsen. IRES: Advancing Cyber-Enabled, Decentralized Water Systems in Rapidly Developing Cities. National Science Foundation	$249,989 09/17 – 08/20 25% share
3.	Lastoskie, C. and N. G. Love. Workshop: Advancing Healthy Communities – the 2017 AEESP Meeting. National Science Foundation.	$49,999 01/17 – 12/17 50% share
4.	Kerkez, B. and N. G. Love. Dynamic collection system reconfiguration through real-time modeling and control. Great Lakes Water Authority	$131,864 5/22/17-11/21/18 10% share
5.	Love, N. G. An effect-directed monitoring program for SWIFT effluent. Hampton Roads Sanitation District.	$50,000 3/1/17-12/31/17 100% share
6.	Daigger, G. T. and N. G. Love. Characterizing the performance and operational characteristics of the bioreactors at the Detroit, MI wastewater treatment plant. Great Lakes Water Authority.	$100,000 5/1/17-4/30/17 10% share
7.	Daigger, G. T. and N. G. Love. Traverse City regional wastewater treatment plant's comma-shaped Gram positive bacteria study. Traverse City Regional Wastewater Treatment Plant.	$120,000 9/1/16-12/31/17 25% share
8.	Love, N.G., D. S. Aga, R. Hardin, A. Noe-Hays, and K. R. Wigginton. INFEWS/T3: Advancing technologies and improving communication of urine-derived fertilizers for food production within a risk-based framework. National Science Foundation.	$3 million 9/1/16-8/31/20 23% share
9.	McElmurry, S. (PI, Wayne State University), multiple co-PIs, N. G. Love is co-PI for project and PI for UM. Flint Area Community Health and Environment Partnership (FACHEP) Phase II Study-Enhanced disease surveillance and environmental monitoring in Flint, Michigan. State of Michigan Department of Health and Human Services.	$2 million 8/1/16-12/31/17 ~4% share
10.	Xu, M., J. Johnson, N. G. Love, S. Miller and J. Newell. UNS: U.S.-China: Integrated systems modeling of food-energy-water (FEW) nexus for urban sustainability. National Science Foundation.	$499,990 61/16-5/31/20 10% share
11.	Love, N.G. and T. M. Olson. RAPID: Assessing microbiological quality across point-of-use filters deployed in Flint, MI. ($30,250 cost share from College of Engineering). National Science Foundation.	$49,999 4/1/16 – 3/31/2017 50% share
12.	Newell, J. P., G. T. Daigger, N. McClintock, A. Ramswami,J. Vandermeer. N.G. Love Senior Personnel and one of three proposal authors (with Newell and Daigger). FEW Workshop: "Scaling Up" Urban Agriculture to Mitigate Food-Energy-Water Impacts. National Science Foundation.	$69,242 7/01/15 – 12/31/15 30% share
13.	Love, N.G. and C. B. Bott. GOALI: Developing Sensor-Mediated Control Strategies that Allow Innovative Treatment of Nitrogen in Wastewater. National Science Foundation.	$330,000 9/1/14 – 8/31/18 100% share

14.	Wigginton, K. R., N. G. Love, J. Jimenez, A. Noe Hayes, D. S. Aga, C. B. Bott. Nutrient Recovery Through Urine Separation. Water Environment Research Foundation EPA Water Center.	$554,034 5/1/14 – 12/31/15 10% share
15.	Raskin, L. and N. G. Love. Evaluation of Waste Activated Sludge Anaerobic Contactor (WASAC™) as a Process for Energy Conservation at Domestic Wastewater Treatment Plants. Carollo Engineering.	$104,481 3/1/2013-4/30/2014 50% share
16.	Love, N.G., L. Raskin, C. Bott, S. Skerlos and A. Salveson. Low Energy Alternatives for Activated Sludge-Advancing Anaerobic Membrane Bioreactor Technology. Water Environment Research Foundation.	$527,000 1/1/2013-12/31/2014 33% share
17.	Burns, M. A. and N. G. Love. Point-of-Use Water Quality Assessment (Sensors for Faucets). MASCO Inc.	$583,868 9/1/12-8/31/15 10% share
18.	Linden, K., D. S. Aga and N. G. Love. Demonstrating Advanced Oxidation/ Biofiltration for Pharmaceutical Removal in Wastewater. Water Environment Research Foundation.	$150,000 3/1/2012-8/31/2013 10% share
19.	Raskin, L., S. J. Skerlos and N. G. Love. Low-temperature Anaerobic Membrane Bioreactors for Sustainable Domestic Wastewater Treatment. National Science Foundation (CBET-1133793)	$404,365 9/1/11 – 8/31/14 10% share
20.	Olson, T. and N. G. Love. Point-of-Use Devices as Incubators of Halogenated Phenol-Mediated Antibiotic Resistant Bacteria. National Science Foundation (CBET-1067450) (includes $55,669 supplement to support dissertation work of Mr. Bayable Atnafu Kassa of Addis Ababa University)	$373,556 5/1/11 – 4/30/15 50% share
21.	Love, N. G., J. S. Guest and S. J. Skerlos. Quantitative Sustainable Design of Chesapeake-Elizabeth WWTP Upgrade Alternatives	$8,500 1/1/11-6/30/11 33% share
22.	Love, N. G. Understanding Microaerobic Metabolism in a Sustainable World. Water Environment Research Foundation	$149,312 2/1/10–3/31/12 100% share
23.	Savage, P. E., G. Keoleian, A. Matzger, S. Linic, and N. Lin (Senior Personnel = H. Wang and N. G. Love). EFRI HyBi: The Science and Engineering of Microalgae Hydrothermal Processing. National Science Foundation (EFRI 0937992)	$2,000,000 9/1/09-8/31/13 2% share
24.	Love, N. G., K. Linden and D. S. Aga. Demonstrating Advanced Oxidation Technologies on Pharmaceutical Removal Downstream of Biological Treatment. Water Environment Research Foundation.	$80,000 1/1/10-5/15/11 34% share
25.	Love, N. G. and L. Raskin. MSB – Investigating the Relationship Between Structural Diversity and Functional Resilience to Stress in Ammonia Oxidizers. National Science Foundation (IOS-0919629)	$312,560 9/1/09-8/31/11 50% share
26.	Raskin, L., S. J. Skerlos and N. G. Love. Anaerobic Membrane Bioreactors for Sustainable Wastewater Treatment. Water Environment Research Foundation	$159,938 5/1/09-4/30/11 10% share
27.	Bott, C. B., Schafran, G., Mulholland, M. and Love, N. G. Integrated Fixed-Film Activated Sludge (IFAS) Demonstration Project at the James River Wastewater Treatment Plant (JRWWTP). Hampton Roads Sanitation District	$100,000 4/1/08–3/31/09 30% share
28.	Bronk, D., Canuel, E., Hatcher, P., Love, N. G. and Mulholland, M. Collaborative Research: Assessing the Bioavailability of Effluent Organic Nitrogen Along a Freshwater to Saltwater Continuum. National Science Foundation (NG Love original PI, shifted to co-PI upon moving to MI)	$448,073 4/1/08–3/31/10 8% share

29.	Love, N. G., Ellis, M., Puri, I. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Water Environment Research Foundation	$155,869 3/15/07–3/14/09 50% share
30.	Edwards, M. and Love, N. G. Effects of Nitrification on Distribution System Materials. American Water Works Research Foundation	$350,000 1/15/07–11/15/09 8% share
31.	Love, N. G. Anammox Studies in Association with DC Water and Sewer Authority. District of Columbia Water and Sewer Authority	$95,000 9/1/06–8/31/08 100% share
32.	Love, N. G. Development of Response Protocols for Wastewater Treatment Plants Exposed to CBR Contaminants. Water Environment Research Foundation.	$300,000 1/1/06–8/31/08 100% share
33.	Love, N. G. Preliminary Nitritation Experiments in Support of the Reject Water Treatment Study for The Blue Plains Advanced Wastewater Treatment Facility. District of Columbia Water and Sewage Authority.	$32,133 12/24/05–6/24/06 100% share
34.	Love, N. G. Planning, Mobilization, Enrichment and Evaluation of Anammox Organisms. District of Columbia Water and Sewage Authority.	$7,364 11/15/05–9/30/06 100% share
35.	Love, N. G. and Love, B. J. Detection of Toxins in the Water Supply. National Institute of Standards and Technology.	$75,000 10/1/05–9/29/06 50% share
36.	Love, N. G., Aga, D. S. and Harper, W. J. Collaborative Research: The Biotransformation of Hydrophobic and Hydrophilic Pharmaceuticals and their Metabolites by Nitrifying and Heterotrophic Cultures, National Science Foundation.	$414,196 6/1/2005–5/31/2009 26% share
37.	Bonner, J. S., Love, N. G., Jones, K. L., Zaslavsky, I., Baru, C. K., Fountain, T., Wentling, T. L., Collaborative Large-Scale Engineering Analysis Network for Environmental Research for the Coastal Margin, National Science Foundation.	$85,309 8/1/2004–7/31/2005 8% share
38.	Love, N. G., Knowlton, K. F. and Smets, B. F. Wastewater Treatment to Minimize Nitrogen Delivery from Dairy Farms to Receiving Waters. The Cooperative Institute for Coastal and Estuarine Environmental Toxicology.	$214,200 9/1/2004–8/31/2006 60% share
39.	Love, N. G. and Smets, B. F. Integrated Biotreatment Technology for Nitrogen-Rich Wastewaters in Advanced Life Support Systems. NASA.	$419,119 10/1/2004–9/30/2007 90% share
40.	Shaw, A. and Love, N. G. Feasibility Testing of Support Systems to Prevent Upsets. Water Environment Research Foundation.	$175,000 3/1/04–2/28/06 15% share
41.	Vikesland, P. and Love, N. G. Treatability Evaluation of Three Chlorinated Organic Compounds. Parsons Corporation.	$115,730 12/19/03–12/31/04 50% share
42.	Vikesland, P. and Love, N. G. Effects of Dissimilatory Iron Reducing Bacteria on the Longevity of Iron Permeable Reactive Barriers. Virginia Water Resources Research Center.	$18,500 7/1/03–6/30/04 20% share
43.	Knowlton, K. F., Love, N. G. and Mullins, G. Wastewater Treatment to Minimize Nutrient Delivery from Dairy Farms to Receiving Waters. The Cooperative Institute for Coastal and Estuarine Environmental Toxicology.	$278,934 9/1/03–8/31/05 40% share

44.	Love, N. G., Meehan, K. A., Love, B. J. A Microfluidic Biosensor for Environmental Monitoring. U. S. Environmental Protection Agency Midwest Hazardous Substances Research Center.	$279,022 10/1/03–9/30/06 34% share
45.	Love, N. G. Factors Affecting the Performance of Acid Phase Digesters Treating Municipal Sludges: Stage I. District of Columbia Water and Sewer Authority.	$24,382 6/3/02–11/30/02 100% share
46.	Vikesland, P., Love, N. G. and DiGiano, F. Assessment of Seasonal Practices and Impacts to Chloraminating Utilities. American Waterworks Association Research Foundation.	$528,362 7/1/02–1/1/05 22% share
47.	Little, J. D. and Love, N. G. Optimizing a Biological Aerated Filter. Virginia Center for Innovative Technology.	$30,000 3/1/02–10/31/02 50% share
48.	Little, J. C., Filz, G., Berry, D., Eick, M., Hochella, M., Love, N., Schreiber, M., Widdowson, M. GAANN: An Interdisciplinary Program in Environmental Biogeochemistry. US Dept of Education.	Phase I: $432,855 8/16/01–8/15/04 17% share Phase II: $373,599 8/16/04–8/15/07 8% share
49.	Novak, J. T., Holbrook, D., Love, N. G. Endocrine Disrupting Potential in Wastewater Effluents and Biosolids. Virginia Water Resources Research Center.	$19,200 7/1/01–6/30/02 33% share
50.	Love, N. G. and Little, J. C. Development of a Fundamentally-Based Model of a Biological Aerated Filter. Degremont North American Research and Development, Inc.	$55,420 6/11/01–8/10/02 50% share
51.	Novak, J. T., Holbrook, D., Love, N. G. Endocrine Disrupting Potential in Wastewater Effluents and Biosolids. Virginia Water Resources Research Center.	$19,200 7/1/01–6/30/02 33% share
52.	Bishop, P., Love, N. G., and Stevens, A. M. Adaptation of subsurface microbial biofilm communities in response to chemical stressors. EPA Hazardous Substance Research Center (Purdue University).	$214,000 9/1/01–8/31/03 50% share
53.	Love, N. G., Upset early warning systems for biological treatment processes: fundamental studies on source-cause-effect relationships, Water Environment Research Foundation.	$326,646 1/1/01–4/30/04 100% share
54.	Novak, J. T., Love, N. G., and Hughes, J. M. Testing of a Package Wastewater Treatment System and Consultation Services for UTD, Inc., UTD, Inc. STTR II.	$150,100 10/1/00–5/1/02 45% share
55.	Love, N. G. and Love, B. J. New technologies: integrating microfluidics, materials science and microbiology: biosensors for protecting wastewater treatment systems. National Science Foundation.	$105,050 9/1/00–12/31/02 75% share
56.	Love, N. G., Grizzard, T., and Novak, J. T. Virginia Tech's Plan of Study for the Loudoun County Sanitation Authority Broad Run Advanced Wastewater Treatment Pilot Plant Study. CH2M Hill, Inc.	$126,564 8/15/00–5/31/01 30% share
57.	Love, N. G. Monitoring the full-scale Biofor® biological aerated filter system at Roanoke, VA. Infilco Degremont, Inc.	$30,000 12/24/99–2/15/01 100% share
58.	Love, N. G. and Bott, C. B. Assessment and framing workshop on upset early warning systems. Water Environment Research Foundation.	$81,064 6/30/99–7/1/00 75% share

59.	Love, N. G. and Stevens, A. M. Characterizing nitrifying bioaugmentation cultures. Sybron Chemical Company and Virginia Center for Innovative Technology.	$90,000 9/1/98–6/30/00 50% share
60.	Love, N. G. Evaluating protein induction patterns in industrial activated sludge cultures. Eastman Chemical Company.	$43,294 12/1/97–12/31/98 100% share
61.	Love, N. G., Little, J. C., and Novak, J. T. A Fundamentally-based investigation into the operational potential of the Biofor® biological aerated filter. Degremont North American Research and Development, Inc., with matching from the Virginia Center for Innovative Technology.	$95,592 9/97–12/98 50% share
62.	Widdowson, M. A. Love, N. G., and Novak, J. T. Evaluation of intrinsic bioremediation at the Douge Creek Subdivision, Ft. Belvoir, VA. Horne Engineering Services, Inc.	$28,800 9/16/96–9/16/97 10% share
63.	Love, N. G., Widdowson, M. A, and Novak, J. T. An investigation into the use of biologically-based treatment technologies for waste oil volume reduction at Norfolk Southern Corporation. Norfolk Southern Corporation and Virginia Water Resources Research Center.	$116,835 8/1/96–8/31/98 45% share
64.	Love, N. G. Laboratory studies to assess wastewater treatment strategies for Eastman Chemical Company. Eastman Chemical Company.	$10,000 11/15/95–3/1/97 100% share
65.	Love, N. G. The distribution and expression of BTX-degrading microorganisms in anoxic/aerobic single sludge biological treatment processes. National Science Foundation CAREER Award.	$335,618 7/1/95–6/30/99 100% share
66.	Love, N. G. The role of anoxic zones in preventing methylethyl ketoxime inhibition of nitrification. Virginia Water Resources Research Center and AlliedSignal Chemical Company.	$20,000 4/1/95-4/30/96 100% share
67.	Love, N. G. and Novak, J. T. The impact of industrial wastewater composition on the bioflocculation of biological sludges. Virginia Water Resources Research Center and Eastman Chemical Company.	$30,000 2/1/95–2/29/96 50% share

Research Support Received – Internal Programs
(Total Value: $4.0 million Share Value: $424,800)

68.	Love, N.G., J. Eisenberg, A. Jones. Addressing the Food-WASH Nexus Across the Urban-Rural Gradient and Impacts on Childhood Stunting. University of Michigan MCubed 2.0 Program.	$60,000 2015-2017 33% share
69.	Schwank, J., M. Bareau, G. Fisher, P. Adriaens, E. Hill, N. G. Love, R. Clarke, J. Diana, K. Wigginton, D. Scavia, A. Hoffman, S. Miller, A. Huang-Saad, J. Trumpey, L. Raskin, S. Skerlos, A. Todd. REFRESCH: Researching Fresh Solutions to the Energy/Water/Food Challenge in Resource-Constrained Environments. University of Michigan Third Century Initiative.	$2,998,832 7/1/14 – 6/30/17 1 of 17 co-PIs at 6% share each
70.	Newell, J., N. G. Love and R. Norton. Planning for Technological Innovation: Water, Infrastructure and Sustainability. University of Michigan MCubed program.	$60,000 1/13/13 – 12/31/14 33% share
71.	Kolars, J. D., N. G. Love, S. Fisseha, A. Burton, L. Isom, P. Yadav, J. Godfrey, and K. Sienko. A Proposal to Develop the Ethiopia-Michigan Platform for Advancing Collaborative Engagement (EM-PACE). University of Michigan Third Century Initiative. N. Love co-leads the Environmental Initiative within this program.	$297,800 1/1/14 – 8/31/15 1 of 8 co-PIs at 12% each

72.	Love, N. G., Skerlos, S., and Raskin, L. Global Sustainable Water Systems – Acknowledging Wastewater as a Resource. Graham Environmental Sustainability Institute, University of Michigan.	$5,000 1/1/08–8/1/08 34% share
73.	Love, N.G., Muller, J. F., Stevens, A. M. and Hagedorn, C. Evaluating the extent of pollution-induced antibiotic resistance in environmental bacterial strains. Virginia Water Resources Research Center.	$18,000 7/1/06–6/30/07 25% share
74.	Vikesland, P., Love, N. G. and Knocke, W. R. Construction of the Environmental BioNanoTechnology Laboratory (EB/NL), ASPIRES.	$82,030 7/1/05–6/30/06 33% share
75.	Knowlton, K. F., Love. N. G., and Ogejo, J. A. Fate of endocrine disrupting compounds in dairy manure during storage and treatment. Virginia Water Resources Research Center.	$18,000 7/1/05–6/30/06 33% share
76.	Hallerman, E. and Love, N. G. Scale up of water treatment and recovery system at Blue Ridge Aquaculture. Virginia Tech Commercial Fisheries and Shellfish Technologies Program	$26,569 7/1/01–6/30/02 50% share
77.	Love, N. G., Dietrich, A., Edwards, M., Godrej, A., Grizzard, T., Novak, J. T., Schreiber, M. Acquisition of a gas chromatograph with both mass spectrometer and flame photometric detector in support of water quality research. Virginia Tech ASPIRES program.	$88,340 1/1/01–12/31/01 14% share
78.	Gibson, H. W., Bevan, D. R., Love, N. G. A collaborative effort to establish a research program for developing biomimetic sensors using molecularly imprinted polymers (MIPs). Virginia Tech ASPIRES program.	$50,393 1/1/01–12/31/01 33% share
79.	Widdowson, M., Schreiber, M., and Love, N. G. Evaluating processes that control natural attenuation of nitrate in natural waters. Virginia Water Resources Research Center.	$5,000 7/1/00–6/30/01 33% share
80.	Love, N. G. and Knowlton, K. F. Development of a collaborative effort on environmentally responsible management of dairy wastes. Virginia Tech ASPIRES program plus College and Departmental matching support.	$37,944 1/1/00–5/31/01 50% share
81.	Stevens, A. M. and Love, N. G. Development of a *lux* reporter for the anaerobic human pathogen *Bacteroides*. Virginia Tech Optical Sciences and Engineering Research Center.	$50,000 7/1/00–6/30/01 10% share
82.	Love, N. G. and Brazil, B. L. Performance optimization and economic analysis of a fluidized denitrifying unit for treating aquaculture effluents. Virginia Tech Commercial Fisheries and Shellfish Technologies Program.	$57,456 7/1/99–6/30/01 50% share
83.	Popham, D. L., Brewer, K. J., Esen, A., Love, N. G., Rutherford, C. L., Shirley, S. W., Stevens, A. M., and Walker, R. A. Establishment of a phosphor/fluorescent imaging facility in Derring Hall. Virginia Tech ASPIRES program.	$69,200 1/98–12/99 2% share
84.	Love, N. G. and Stevens, A. M. Development of a collaborative research effort in environmental biotechnology as applied to biological wastewater treatment systems. Virginia Tech ASPIRES program.	$32,080 1/98–12/99 50% share
85.	Widdowson, M. A., Love, N. G., Novak, J. T., and Berry, D. F. Intrinsic bioremediation of contaminants in groundwater and soil: A strategy for research and partnerships. Virginia Tech ASPIRES program.	$37,300 4/97–3/98 25% share
86.	Love, N. G. Denitrification of recirculating aquaculture system waters. Virginia Tech Commercial Fisheries and Shellfish Technologies Program.	$6,000 3/1/95–6/30/96 100% share
87.	Randall, C. W. and Love, N. G. Identification of bacterial groups in biological nutrient removal systems. Virginia CORE Research Program.	$4,300 7/1/94–6/30/95

50% share

Institutional/ Educational Support Received – External Programs
(Total Value: $3.7 million, Share Value: $1.2 million)

88.	Love, N. G., Thole, K. A. and McCrickard, S. Development and Maintenance of a Portal Website for the NSF Advance Program, National Science Foundation.	$94,671 9/1/04-8/31/06 12% share
89.	Layne, P., Love, N. G. and Thole, K. A. ADVANCE Engineering Workshop, National Science Foundation.	$61,381 8/1/04–1/31/05 33% share
90.	McNamee, M., Hyer, P.B, Love, N. G. and Thole, K. A. ADVANCE Institutional Transformation Award for Virginia Tech. NSF. Co-initiated and co-authored proposal. Active participant from 2003-2006.	$3,460,211 7/1/03–6/30/08 33% share
91.	Oerther, D. and Love, N. G. Workshop to Explore the Value of Applying Molecular Biology Tools in Environmental Engineering, National Science Foundation.	$21,400 10/1/01–9/30/02 10% share
92.	Love, N. G. Making the Connection Program, Women in Engineering Programs and Advocates Network.	$5,000 12/1/1999–1/31/2003 100% share
93.	Little, J. C. and Love, N. G. Environmental Engineering: Creation of an electronic textbook. SUCCEED and College of Engineering Green Engineering Program.	$30,416 1/1/95–5/31/97 50% share

REPORTS, THESES, PROJECTS AND DISSERTATIONS ADVISED

Major Undergraduate Research Projects

1. Yen Jee Ooi. Summer 2018 (at Rich Earth Institute), then Fall 2018-current. Nutrient analysis for NSF INFEWS project.
2. Brittany Brown. Summers 2017 and 2018. Characterization of *Stenotrophomonas maltophilia* from drinking water through culturing and qPCR, and bioavailability of high versus low water age carbon.
3. Myriam Sarment. 2018 summer. Bioavailability of high versus low water age carbon in drinking water isolates.
4. Alexi Sinanaj. 2017 – current. Pharmaceutical removal from urine through activated carbon adsorption.
5. Brady Nishimiya. 2017-2018. Disinfection residual effectiveness of point-of-use product.
6. Nicholas Lowe. 2017-2018. Automated flushing device to improve water quality through point-of-use drinking water filters.
7. Dylan Raye-Leonard. 2016-2018. Urine-derived fertilizer project.
8. Brittany Brown. 2016. Microbial ecology of novel nitrogen removal systems.
9. Ishi Keenum. 2015 – 2016. Plasma treatment of source-separated urine for fertilizer development (co-mentor with K. Wigginton).
10. Mariah Gnegy. 2015-2016. DNA-based analysis of bacteria and viruses in source separated urine (co-mentor with K. Wigginton).
11. Weitian Wang. 2010-2011. Microaerobic Removal of Pharmaceuticals from Wastewater
12. Celine Saucier. 2010-2011. Nitrate Removal to Enable the Effluent Organic Nitrogen Bioassay
13. Bryan VanDuinen. 2009. Life Cycle Assessment of Various Disposal Methods for Unused Pharmaceuticals.
14. Shayan Sengupta. 2009: Assessing the Toxicity of Pharmaceuticals at Doses Expected from Secondary Infections Experienced During a Pandemic.
15. Genevieve Ho. 2008-2009: First project - Assessing a Thin-Film pH Biosensor. Second project – Abiotic Ammonia release from Effluent Organic Nitrogen Along Salinity Gradients.
16. Brian Harris. 2007: Assessing Oxidative Stress Response Function of Alginate-Immobilized Bacteria

17. Zachary Frye. 2006. Assessing the Feasibility of Nanostructure-Enhanced Nitrifying Microbial Fuel Cells
18. Brian Segal. 2006-2007. Evaluation of Ammonia Oxidizing Bacterial Biofilms.
19. Stephanie Harris. 2005-2006. Development of a Microfluidic Immunomagnetic Separation Biosensor for Detecting Bacterial Pathogens.
20. Beth McConnell. 2003-2004. The Affect of Physiology on Bacterial Responses to Oxidative Uncouplers
21. Suzanne Ayers. 2002. VIA Undergraduate Scholar: Evaluating the Impact of Toxic Shocks on Wastewater Treatment Performance
22. Felicia Glapion. 2001-2002. NEM-Induced Potassium Efflux in *Pseudomonas aeruginosa*
23. Monica Mace. 2000-2001. GE Scholarship: Denitrification of Aquaculture Wastewaters
24. Denise Gillam. 2000. Water Center Undergraduate Fellowship: The Impact of Potassium Efflux on Biofilm Treatment Systems Exposed to Electrophilic Toxins
25. Mike Gatza. 1999-2000. Using Two-Dimensional Gel Electrophoresis to Characterize Stress Proteins (Co-advised with Dr. Ann Stevens)
26. Bethany McRae. 1999-2000. NSF REU: Induction of the Glutathione-Gated Potassium Efflux System in *Sphingomonas capsulata* Exposed to HOCl
27. Jennifer Abrajano. 1999-2000. NSF REU: Assessing the Metabolism of Xenobiotic Compounds by Microaerobically-Grown Magnetotactic Bacteria
28. Scott Phipps. 1998-1999. Dewatering of Oily Wastewater Sludges. (Co-advised with Dr. John Novak)
29. Katya Bilyk. 1998-1999. NSF REU: Nitrite Inhibition and Toluene Degradation Under Denitrifying Conditions
30. Julie Wheeler. 1997-1998. NSF REU: Impact of Xenobiotic Stressors on Activated Sludge System Performance
31. Mary Rust. 1996-1997. Water Center Undergraduate Fellowship and NSF REU: Development and Isolation of Acetaldehyde Oxime and Methylethyl Ketoxime Degrading Cultures
32. Elliott Wheeler. 1995-1996. The Role of Various Cations in Settling and Dewatering of Biological Wastewater Treatment Sludges
33. Jon Treadway. 1995. Determination of Proteins in Activated Sludge Using Commercial Assays
34. Kevin Gilmore. Fall 1995: The Impact of Oximes on the Degree and Rate of Nitrification in Activated Sludge Cultures. Spring 1996: Evaluation of Chemical Oxidation as Pretreatment for Wastewaters Containing Aldicarb Oxime

Masters Students with Theses, Extensive Research Project, or Project Report

1. Alyssa Schubert. 2018 – current. Project being defined.
2. Nick J. Lowe. 2018 – current. Toxicological monitoring of SWIFT effluent from Hampton Roads Sanitation District.
3. Avery Carlson. 2016 – 2018. Isolating and identifying comma-shaped nuisance bacteria in Traverse City's membrane bioreactor treatment system. (co-advised with Glen Daigger)
4. Enrique Rodriguez. 2016 – 2018. Plasma as a platform for advanced oxidation of urine to generate safe fertilizers (co-advised with Krista Wigginton)
5. Zixu Zhao. 2016-2017. Optimizing flushing to reduce microbial contamination of point-of-use filtered drinking water.
6. Andrea McFarland. 2015 – 2018. NSF Fellowship Recipient. Water quality benefits due to green infrastructure. (Co-advised with Larissa Larsen, Urban Planning).
7. Samayyah Williams. 2014-2015. Modeling, understanding and assessing technologies for the Detroit Water and Sewerage Department (DWSD) Wastewater Treatment Plant.
8. Nigel Beaton. 2014-2015. Low energy-demanding nitrogen removal from anaerobic effluents using biofilm technologies.
9. Anton Dapcic. 2013 – 2014. A performance evaluation of the WASAC™ energy recovery process.
10. Angelica Perez De La Rosa. 2010-2012. The impact of chlorinated phenols on the microbial ecology of point-of-use drinking water filters.

11. C. Davis Powell. 2011-2014. Evaluating the environmental impacts of urine source separation.
12. Chris Moline. 2010-2011. The fate of pharmaceuticals in microaerobic biological treatment processes.
13. Alexi Ernstoff. 2009 – 2011. The impact of culturing buffer on the ability of *Nitrosomonas europaea* to biotransform 17 α-ethinylestradiol. Current affiliation – Ph.D. student, Technical University of Denmark.
14. Sam Hardin. 2006-2011. The effectiveness of corrective action strategies on chemically stressed biological wastewater treatment systems. Current affiliation – environmental engineering consulting.
15. Romeo Capuno. 2005-2007. Modeling anaerobic ammonia oxidizing biofilms. Current affiliation – environmental engineering consulting.
16. Jason Beck. 2005-2007. Evaluating deammonification processes to achieve nitrogen removal from dairy waste. Current affiliation – environmental engineering consulting.
17. Jeremy Guest. 2005-2007. Laboratory testing of process controls for the mitigation of toxic shock events at enhanced biological phosphorus removal wastewater treatment plants. Current affiliation – Assistant Professor, University of Illinois.
18. Kaoru Ikuma. 2004-2007. The development of a bacterial biosensor designed to detect oxidative chemicals in water: correlating sensor relevance to mammalian brain cells and assessing bacterial cell immobilization strategies. Current affiliation – Assistant Professor, Iowa State University.
19. Mert Muftugil. 2004-2011. Enhanced Biological Phosphorus Removal of Dairy Manure using Sequencing Batch Reactors: Performance, Kinetics and Model Development. Current affiliation – environmental engineering consulting.
20. Anna Zaklikowski. 2004-2006. Evaluating the Effectiveness of Disinfection Strategies in the Inhibition and Inactivation of Ammonia Oxidizing Bacteria. Current affiliation – environmental engineering consulting.
21. Ka Man Chan. 2004-2005. Feasibility Study of In Situ Bioremediation of Bis(2-Chloroethyl) Ether and 1,2-Dichloroethane. Affiliation upon graduation – water utility.
22. Paul Sweetman. 2004-2005. Evaluating the Fate of Manure Nitrogen in Confined Dairy Waste Operations: A Full-Scale Waste Analysis and Start-up Protocol for an Anammox –Based Treatment Technology Applicable to Dairy Waste Management. Affiliation upon graduation – government position in Ireland.
23. Irina Chakraborty. (Degree from University of Helsinki, Finland) 2002-2005. Characterizing the Adaptation of a Subsurface Microbial Community using Biomolecular Tools (co-advised with Dr. Ann Stevens, Biology). Affiliation upon graduation – Ph.D. student in environmental microbiology.
24. Katharine Linares. 2002-2004. Development of a Biosensor for Detecting Toxic Electrophilic Chemicals in Waters. Current affiliation – environmental engineering consulting.
25. Jennifer Dauphinais. 2002-2003. Effects of Toxic Chemicals on Biological Wastewater Treatment Processes. Current affiliation – US government-based environmental services.
26. Rachelle Rhodes. 2002-2004. Subsurface Microbial Community Adaptation to Xenobiotic Influx. Current affiliation – environmental engineering consulting.
27. Susanna Leung. 2001-2003. Oxygen Transfer Efficiency in a Biological Aerated Filter (co-advised with John Little). Current affiliation – environmental engineering consulting.
28. Giacomo Sonzini. (Degree from Politecnico Di Milano, Italy) 2001. Investigation of K^+ Efflux as Response to Intoxication for Nitrifying Activated Sludge. Affiliation upon graduating – financial analyst in Italy.
29. Kristina Yanosek (Biological Systems Engineering). 2000-2002. Enhanced Biological Phosphorus Removal from Dairy Manure to Meet Nitrogen and Phosphorus Crop Nutrient Requirements (co-advised with Dr. Mary Leigh Wolfe). Affiliation upon graduation – US Dept of Interior.
30. David Whichard. 2000-2001. Nitrogen Removal from Dairy Manure Wastewater Using Sequencing Batch Reactors. Affiliation upon graduating – environmental services in industry.
31. Kofi Asiedu. 2000-2001. Evaluating Biological Treatment Systems: I. Moving Bed Biofilm Reactor Versus Biological Aerated Filter. II. Sulfide-Induced Corrosion in Anaerobic Digester Gas Piping. Current affiliation – Engineer III, Prince William County, Virginia.

32. Melissa Fouratt (Biological Sciences). 1998-2001. Application of Molecular Techniques to the Characterization of a Nitrifying Bioaugmentation Culture (co-advised with Dr. Ann Stevens). Position upon graduation – pharmaceutical sales.
33. Scott Phipps. 1999-2001. Performance Evaluation and Yield Determination of a Full-Scale Biological Aerated Filter. Current affiliation – environmental engineering consulting.
34. Brian Brazil. 1999-2001. Evaluation of an Effluent Treatment Strategy to Control Nitrogen from a Recirculating Aquaculture Facility. Current affiliation – environmental engineering consulting.
35. Robert Wimmer. 1998-2001. Development of a Biosensor to Predict Activated Sludge Deflocculation and the Link Between Chlorination and Potassium Efflux. Current affiliation – environmental engineering consulting.
36. Arnaud Delahaye. 1997-1998. Distribution and Characteristics of Biomass in an Upflow Biological Aerated Filter. Affiliation upon graduation – Civil servant in France.
37. Kari Husovitz. 1997-1998. The Influence of Hydraulic Loading Rate on Nitrification Performance in a Two-Stage Biological Aerated Filter Pilot System. Current affiliation – environmental engineering consulting.
38. Kevin Gilmore. 1997-1999. Using Oligonucleotide Probes to Characterize Nitrification in a Two-Stage Pilot Plant Scale Biological Aerated Filter System. Current affiliation – Associate Professor, Bucknell University.
39. Jeff McGinnis. 1996-2003. Biodegradation and Dewatering of an Industrial Waste Oil. Current affiliation – environmental engineering consulting.
40. Jennifer Phillips. 1996-1997. Denitrification or Recirculating Aquaculture System Waters Using an Upflow Biofilter and a Fermented Substrate. Current affiliation – environmental engineering consulting.
41. Kristina Perri. 1996-1997. The Effectiveness of Multiple Redox Treatment Strategies on the Treatability of a High Strength Industrial Wastewater. Current affiliation – environmental engineering consulting.
42. James Drew Fettig. 1995-1998. A Study of the Patterns, Stoichiometry, and Kinetics of Microbial BTX Degradation Under Denitrifying Conditions by an Activated Sludge Consortium Receiving a Mixed Waste. Current affiliation – environmental engineering consulting.
43. Michelle Smith. 1995-1996. The Effect of Cation Addition on the Settling and Dewatering Properties of an Industrial Activated Sludge. Affiliation upon graduation – environmental engineering consulting in Canada.
44. Erika Lubkowicz (Bailey). 1995-1996. Biological Treatment Schemes for Preventing Oxime Inhibition of Nitrification. Current affiliation – environmental engineering consulting.
45. Patrick Brooks. 1995-1996. An Investigation of Temperature Effects on Denitrifying Bacterial Populations in a Biological Nutrient Removal System. Current affiliation – environmental engineering consulting.

Ph.D. Dissertations, Student Placement and Nationally Recognized Achievements by Mentees

1. Lucinda Li. 2018 – 2023 (anticipated). The impact of urine derived fertilizers on the soil microbiome (co-advised with Krista Wigginton).
2. Enrique Rodriguez. 2018 – 2022 (anticipated). Suspect screening, effect directed analysis and chemical risk of resource efficiency processes (co-advised with Krista Wigginton).
3. Hollie Adejumo. 2017 – 2022 (anticipated). Disinfection byproducts and cancer in resource constrained settings.
4. Avery Carlson. 2018 – 2021 (anticipated). Project topic being developed (co-advised with Glen Daigger)
5. Brett Wagner. 2016 – 2021 (anticipated). Membrane aerated biofilm reactor technology (co-advised with Glen Daigger)
6. Sara Troutman. 2015-2020 (anticipated). Integrated urban water infrastructure systems modeling at the green and grey infrastructure interface. (co-advised with Branko Kerkez)
7. Zerihun Bekele Alemayehu. 2015-2019 (anticipated). Use of sensor-mediated controls to achieve enhanced, low energy nitrogen removal during mainstream wastewater treatment. (Co-advised with Charles Bott, Hampton Roads Sanitation District)

8. Chia-Chen Wu. 2013-Dec 2018. Bacterial colonization of point-of-use (PoU) drinking water filters and associated risks due to opportunistic pathogens and antibiotic resistance. (Co-advised with Terese Olson)
9. Heather Goetsch. 2014 – Aug 2018. Evaluating the benefits and risks of source separation as a nutrient management strategy. (Co-advised with Krista Wigginton). *Currently:* AAAS Fellowship, Department of Energy.
10. Jeseth Delgado-Vela. 2012 – May 2018. NSF Fellowship Recipient and Ford Foundation Fellow. Nitrogen and Sulfur Cycling During Wastewater Treatment. (Co-advised with Greg Dick). *Current Affiliation:* Assistant Professor, Howard University, Washington D.C.
11. Lauren Stadler. 2010 – 2015. NSF Fellowship Recipient. Fate of trace contaminants in bacterial communities under low dissolved oxygen environments. *Current Affiliation:* Assistant Professor, Rice University, Houston. *National Achievement:* 2016 CH2M/AEESP Best Dissertation Award.
12. Sherri M. Cook. 2008-2014. NSF Fellowship Recipient. Sustainable Waste Management: Modeling and Decision Strategies for Unused Medications and Wastewater Solids (Co-advised with Steve Skerlos). *Current Affiliation:* Assistant Professor, University of Colorado, Boulder.
13. Jeremy S. Guest. 2007-2012. Sustainable design of wastewater treatment systems: Evaluations of operational flexibility and phototrophs for resource recovery. (Co-advised with Steve Skerlos). *Current Affiliation:* Assistant Professor, University of Illinois, Urbana-Champaign. *National Achievement:* 2014 NSF CAREER Award Recipient.
14. Ameet J. Pinto. 2005-2009. Upset Events at Wastewater Treatment Plants: Implications for Mitigative Strategy Development and Bioreactor Microbial Ecology. *Current Affiliation:* Assistant Professor, Northeastern University, Boston).
15. Wendell Khunjar. 2004-2009. Elucidating Factors that Impact the Removal of Organic Microconstituents by Heterotrophic and Ammonia Oxidizing Bacteria. *Current Affiliation:* Hazen and Sawyer Consultants.
16. Martin Musabyimana. 2005-2008. Deammonification Process Kinetics and Inhibition Evaluation. *Current Affiliation:* East Bay Municipal Utility District, San Francisco, CA.
17. Kevin R. Gilmore. 2005-2008. Treatment of High-Strength Nitrogen Wastewater With a Hollow-Fiber Membrane-Aerated Biofilm Reactor: A Comprehensive Evaluation. *Current Affiliation:* Associate Professor, Bucknell University.
18. Jocelyn Fraga Muller. 2002-2006. The Role of Multidrug Efflux Pumps in the Stress Response of *Pseudomonas aeruginosa* to Organic Contamination. (Co-advised with Ann Stevens) *Current Affiliation:* Community College Instructor.
19. Ines D. S. Henriques. 2001-2006. The Response of Activated Sludge Cultures to Toxic Chemicals: Process Performance Effects, Role of Floc Structure, and Detection of Physiological Changes by Footprinting Methods. *Current Affiliation:* CEO, Ynvisible, Portugal.
20. Richard T. Kelly II. 2001-2005. Chemical Inhibition of Nitrification: Evaluating Methods to Detect and Characterize Inhibition and the Role of Selected Stress Responses Upon Exposure to Oxidative and Hydrophobic Toxins. *Current Affiliation:* Brown and Caldwell, Seattle, Washington.
21. R. David Holbrook. 2000-2003. The Role of Colloids in Defining the Fate of Endocrine System Disrupting Chemicals in Wastewater Treatment Systems (Co-advised with Dr. John Novak). *Current Affiliation:* Acting Chief, Surface and Microanalysis Sciences Division, National Institute of Standards and Technology. *National Achievement:* 2010 PECASE (Presidential Early Career Award for Scientists and Engineers) recipient.
22. Charles B. Bott. 1997-2001. Elucidating the Role of Toxin-Induced Microbial Stress Responses in Biological Wastewater Treatment Process Upset. Affiliation upon graduation: environmental engineering consulting, then Assistant and Associate Professor at Virginia Military Institute. *Current Affiliation:* Director of Water Technology and Research, Hampton Roads Sanitation District, Virginia.
23. Guihua Ma. 1995-1999. The Kinetics, Biochemical Patterns, and Microbial Ecology in Multiredox Activated Sludge Systems Treating BTX Containing Wastewater. *Current Affiliation:* KCI, Inc., Baltimore, MD.

Post-Doctoral Research Associates

1. William Tarpeh, 2017-2018. Pharmaceutical transformation products through urine-derived fertilizer processing technologies. Co-advised with K. R. Wigginton. *Current Affiliation: Assistant Professor, Chemical Engineering, Stanford University.*
2. Rebecca Lahr, 2015-2016. Microbial fate in source-separated urine. Co-advised with K. R. Wigginton. *Current Affiliation*: Assistant Professor, Michigan State University.
3. Dr. Kelly Martin. 2013 – 2015. Innovative, Low Energy Nitrogen Removal from Anaerobic Effluents. *Current Affiliation:* Black and Veatch, Inc.
4. Dr. Sudeshna Ghosh. 2008-2012. Chemical stressor-induced antibiotic resistance.
5. Dr. Kartik Chandran. 2004-2005. Chemical stress mechanisms in nitrifying bacteria. *Current Affiliation:* Associate Professor, Columbia University. *National Achievements:* NSF CAREER Award recipient; 2015 MacArthur Fellow.
6. Dr. Jane Duncan. 1998-1999. Heat shock protein expression in response to chemical stress in activated sludge. *Current Affiliation:* Research Scientist, Dept of Biochemistry, Virginia Tech.
7. Dr. Kathy Terlesky. 1996-1997. Heat shock protein expression in response to chemical stress in activated sludge. Current Affiliation: Vice President, Division Manager, SAIC, Inc., Charlottesville, Virginia.

PUBLICATIONS

Textbooks

1. Grady, C. P. L. Jr., G. T. Daigger, N. G. Love and C. Filipe. 2011. *Biological Wastewater Treatment*, 3rd Edition, Taylor and Francis Publishers.

Peer-Reviewed Journal Articles (undergraduate students; graduate students; post-doctoral research associates; *corresponding or senior author)

2. Delgado Vela, J., G. J. Dick and N. G. Love*. 2018. Sulfide inhibition of nitrite oxidation in activated sludge depends on microbial community composition. *Water Research*. 138:241-249, DOI:10.1016/j.watres.2018.03.047.
3. Byrne, B. G., S. McColm, S. P. McElmurry, P. E. Kilgore, J. Sobeck, R. Sadler, N. G. Love, M. S. Swanson*. 2018. Prevalence of infection-competent serogroup 6 *Legionella pneumophila* within premise plumbing in Southeast Michigan. *mBio,* 9(1): DOI: 10.1128/mBio.00016-18.
4. Zahran, S., S. P. McElmurry, P. E. Kilgore, D. Mushinski, J. Press, N. G. Love, R. C. Sadler, M. S. Swanson*. 2018. Assessment of the Legionnaires' Disease Outbreak in Flint, Michigan. *Proceedings of the National Academy of Sciences USA,* 2018. DOI: 10.1073/pnas.1718679115.
5. Goetsch, H. E., L. B. Zhao, M. Gnegy, M. J. Imperiale, N. G. Love, K. R. Wigginton*. 2018. The fate of urinary tract virus BK human polyomavirus in source-separated urine. *Applied and Environmental Microbiology*, 84(7): DOI:10.1128/AEM.02374-17.
6. Stadler, L. B.†, J. Delgado Vela†, S. Jain, G. J. Dick, and N. G. Love*. 2017. Elucidating the impact of microbial community biodiversity on pharmaceutical biotransformation during wastewater treatment. *Microbial Biotechnology*, DOI: 10.1111/1751-7915.12870. †These authors contributed equally to this work.
7. Mullen, R. A., K. R. Wigginton, A. Noe-Hays, K. Nace, N. G. Love, C. B. Bott and D. S. Aga*. 2017. Optimizing extraction and analysis of pharmaceuticals in human urine, struvite, food crops, soil, and lysimeter water by liquid chromatography-tandem mass spectrometry. *Analytical Methods*. 9(41):5952-5962.
8. Troutman, S. C., N. Schambach, N. G. Love and B. Kerkez*. 2017. A self-calibrating framework for the sensor-driven and dynamical modeling of combined sewer systems. *Water Research*, 126:88-100. DOI: 10.1016/j.watres.2017.08.065
9. Wu, C.-C., S. Ghosh, K. J. Martin, A. J. Pinto, V. J. Denef, T. M. Olson, N. G. Love*. 2017. The microbial colonization of activated carbon block point-of-use (PoU) filters with and without chlorinated phenol

disinfection byproducts. *Environmental Science: Water Research & Technology*, 2017, DOI: 10.1039/C7EW00134G.

10. Cook, S.M., S. J. Skerlos, L. M. Raskin and N. G. Love*. 2017. A sustainability assessment tool for anaerobic digestion. *Water Research*. 112:19-28.
11. Daigger*, G. T., J. Sandino, S. Murthy, N. G. Love. 2017. Transforming environmental engineering and science education, research and practice. *Environmental Engineering Science,* 34(1):42-50.
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118. Hughes, L.D., K. F. Knowlton, N. G. Love, A. M. Gamboni and C. M. Parsons. 2004. Wastewater treatment to reduce phosphorus losses from dairy farms. *Journal of Dairy Science*, 87, 470.

119. Holbrook, R. D., Novak, J. T., Grizzard, T. and Love, N. G. 2003. Closure to discussion of: Estrogen receptor agonist fate during wastewater and biosolids treatment processes: A mass balance analysis. *Environmental Science and Technology*, 37(20):4821-4822.

120. Novak, J. T., Higgins, M., and Love, N. G. 1999. Closure to discussion of: The effect of cationic salt addition on the settling and dewatering properties of an industrial activated sludge. *Water Environment Research*, 71:252-254.

121. Cowan, R.M., Love, N. G., Sock, S. and White, K. 1995. Treatment systems: activated sludge and other aerobic suspended culture processes. *Water Environment Research*, 67:433-450.

122. Lu, Y.-T. and Love, N. G. 1992. Discussion of: enhanced biodegradation of polyaromatic hydrocarbons in the activated sludge process. *Water Environment Research*, 64:922-923.

International Conference Presentations (presenter underlined)

123. Desta, A. F., N. G. Love, K. R. Wigginton, H. Goetsch and R. Lahr. 2016. Keynote lecture: Metagenomic analysis of biological contaminants in source-separated urine undergoing sanitization.: A way towards sustainable development in low-income countries. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.

124. Stadler, L. and N. G. Love. 2016. Associations between microbial community activity, pharmaceutical biotransformation rates, and DO concentration in wastewater treatment. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.

125. Goetsch, H., M. Imperiale, N. G. Love and K. R. Wigginton. 2016. Refining liquid gold: Fate of human polyomavirus in urine diverted for fertilizer use. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.

126. Wu, C.-C., T. M. Olson and N. G. Love. 2016. Prevalence of Antibiotic Resistance Genes (ARGs) in Point-of-Use (PoU) Drinking Water Filters. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.

127. Goetsch, H., R. Mullen, R. Lahr, A. Noe-Hays, D. Aga, C. Bott, B. Foxman, J. Jimenez, N. Love, T. Luo, K. Nace, K. Ramadugu, K. Wigginton. 2015. Fate of pharmaceutical and biological contaminants through the preparation and application of urine derived fertilizers. International Water Association First Resource Recovery Conference. Ghent, Belgium, Aug 30-Sept 2, 2015.

128. Stadler, L. B., Su, L., Aga, D. S., and Love, N. G. 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. Iowa City, IA, August 19 – 22, 2014.

129. Delgado Vela J., Martin, K. J., Beaton, N., McFarland, A., Stadler, L., Bott, C. B., Raskin, L., Skerlos, S.J., and Love, N.G. 2014. Nitrogen Removal Downstream of an Anaerobic Membrane Bioreactor for Domestic Wastewater Treatment. IWA Global Challenges: Sustainable Wastewater Treatment and Resource Recovery. Kathmandu, Nepal, October 26-30.

130. Stadler, L.B., A.L. Smith, L. Cao, N.G. Love, L. Raskin, and S.J. Skerlos, 2013. Energy Recovery from Wastewater: Life Cycle Comparison of Carbon Removal Technologies Upstream of Autotrophic Nitrogen Removal. *WEF/IWA Nutrient Removal and Recovery 2013: Trends in Resource Recovery and Use*, July 28-31, Vancouver, British Columbia, Canada.

131. Smith, A.L., T. Shimada, and L. Raskin, 2013. Syntrophic interactions in full-scale two-phase anaerobic digesters determined by pyrosequencing. *5th International Conference on Microbial Ecology and Water Engineering Conference,* July 7-10, Ann Arbor, Michigan.

132. Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin, 2012. Effects of changes in temperature and hydraulic retention time on performance and environmental impacts of anaerobic membrane bioreactors for domestic wastewater treatment. *Leading-Edge Conference on Water and Wastewater Technologies*, June 3-7, Brisbane, Australia.

133. Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N. 2011. Effect of Copper Stress on Ammonia Oxidizer Community Structure and Nitrification Performance in a Nitrifying Activated Sludge Wastewater Treatment Process. 2nd International Conference on Nitrification. Nijmegen, the Netherlands. July 1-7.

134. Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin, 2011. Analysis of microbial communities in an anaerobic membrane bioreactor for domestic wastewater treatment at psychrophilic conditions. *2011 Biogas Microbiology Conference*, September 14-16, Leipzig, Germany.

135. Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin, 2010. Anaerobic membrane bioreactors for sustainable domestic wastewater treatment at psychrophilic temperatures. *12th World Congress on Anaerobic Digestion*, October 31 - November 4, Guadalajara, Mexico. International Water Association.

136. N. G. Love, W. O. Khunjar, J. Skotnicka-Pitak, S. Mackintosh, S. Baik, D. S. Aga, T. Yi, and W. F. Harper Jr. 2010. Elucidating the role of ammonia oxidizing bacteria versus heterotrophic bacteria during the biotransformation of 17α-ethinylestradiol and trimethoprim. Podium presentation. International Water Association World Water Congress and Exposition, Montreal, Quebec, Canada, Sept 20-24, 2010.

137. W.O. Khunjar, J. Skotnicka-Pitak, S. Mackintosh, S. Baik, N. G. Love, D.S. Aga, W.F. Harper Jr. 2010. Elucidating factors that influence the biotransformation of 17 α-ethinylestradiol and trimethoprim. Poster presentation. International Water Association Leading Edge Technology Conference, Phoenix, AZ, June 1-4, 2010.

138. Guest, J. S., S. J. Skerlos and N. G. Love. 2010. An optimization methodology for elucidating locality-specific sustainability trade-offs in wastewater treatment plant process selection. Poster presentation. International Water Association Leading Edge Technology Conference, Phoenix, AZ, June 1-4, 2010.

139. Cook, S. M., J. S. Guest, S. J. Skerlos, N. G. Love. 2009. Environmental characteristics of different energy recovery systems from the management of sewage sludge and food waste. Podium

presentation, *IWA Sustainable Management & Technologies of Sludges Conference*, Harbin, China, August 8-11, 2009.

140. Pinto, A.J. and N. G. Love. Post-stress recovery of a complex ammonia oxidizing bacterial community following heavy metal cadmium stress. Short podium presentation and poster presentation. *International Conference on Nitrification 1*. Louisville, KY, July 5-9, 2009.

141. Guest, J. S.; Skerlos, S. J.; Daigger, G. T.; Corbett, J. R. E.; Love, N. G. 2009. The use of qualitative system dynamics to identify sustainability characteristics of decentralised wastewater management alternatives. *Proceedings of 6th IWA Leading Edge Conference on Water and Wastewater Technologies*, Singapore, June 22-25, 2009. *Invited for consideration in Water Science and Technology*.

142. Pinto, A.J., S. C. Hardin, and N. G. Love. 2009. Cadmium-induced short-term structural and functional changes in ammonia oxidizing community in conventional laboratory and pilot scale activated sludge systems. Podium presentation. *Proceedings of the ASPD5 (Activated Sludge Population Dynamics) Specialised Conference: Microbial Population Dynamics in Biological Wastewater Treatment.* International Water Association. Aalborg, Denmark, May 24-27, 2009.

143. Gilmore, K. R., B. F. Smets, A. Terada, S. Lackner, J. L. Garland, N. G. Love. 2009. Microbial community analysis in an autotrophic hollow-fiber membrane-aerated biofilm reactor (HFMBR) treating a high-strength nitrogen wastewater. Podium presentation. *Proceedings of the ASPD5 (Activated Sludge Population Dynamics) Specialised Conference: Microbial Population Dynamics in Biological Wastewater Treatment.* International Water Association. Aalborg, Denmark, May 24-27, 2009, pp 146-148.

144. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. Elucidating the Role of Ammonia Oxidizing Bacteria versus Heterotrophic Bacteria in the biotransformation of 17α-ethinylestradiol. Poster presentation. *Proceedings of the Activated Sludge Population Dynamics 5 (ASPD5): Microbial Population Dynamics in Biological Wastewater Treatment.* International Water Association. Aalborg, Denmark, May 24-27, 2009.

145. Aga, D., N. G. Love, W. Harper, W. O. Khunjar, J. Slotnicka-Pitak, T. Yi. 2008. Biotransformation of pharmaceuticals by nitrifying and heterotrophic cultures: Investigation of degradation kinetics and metabolite identification. Keynote Address - International Water Association Leading Edge Technology Conference, Zurich, Switzerland, June 1-4, 2008.

146. Shaw, A., deBarbadillo, C., Pinto, A. J., Guest, J. S., Love, N. G., Fairey, A. W., Iler, P. L., Earle, J. K., Shellenbarger, D., and Barker D. 2008. Dynamic whole plant modeling to investigate mitigation strategies for toxic shocks. *1st IWA/WEF Wastewater Treatment Modeling Seminar*. Mont-Sainte-Anne, Quebec, Canada. June-1-3, 2008.

147. Aga, D. S., Harper Jr., W. F., Love, N. G. Khunjar, W. O., Klein, C., Celiz, D. M., Baik, S., Yi, T. 2007. Investigating the connection between nitrification and the removal of pharmaceuticals using engineered bioreactors. Micropol and Ecohazard 2007, Frankfurt, Germany. Podium Presentation.

148. Pinto, A. J., Guest, J. S., Love, N. G., Shaw, A., Fairey, A. W., Iler, P. L., Earle, J. K., Shellenbarger, D., Barker, D. 2007. Process control at nutrient removal wastewater treatment plants during toxic shock events. State of the Art Nutrient Removal Design, Water Environment Federation and International Water Association, March 3-7, 2007, Baltimore, Maryland.

149. Rushing, J. C., Vikesland, P., Love, N. G., Mutuc, M., Chan, K. M., Casselberry, R. and Cichy, P. 2006. Evaluating in situ chemical and biological treatment approaches for two chlorinated aliphatic ethers: BCEE and BCEM. The Fifth International Conference on Remediation of Chlorinated and Recalcitrant Compounds. Battelle, May 22-25, 2006, Monterey, California.

150. Capuno, R. E., Love, N. G., and Smets, B. F. 2006. Mathematical modeling of start-up scenarios for nitrogen removal via a nitritation:anaerobic ammonia oxidation-coupled biofilm in a hollow fiber membrane bioreactor. International Water Association Biofilm Systems VI, Amsterdam, The Netherlands, September 24-27, 2006.

151. Love, N. G. 2005. Keynote Address: Detecting Microbial Fingerprints and Their Role in Advancing Our Understanding of Activated Sludge Population Dynamics. 4th International Water Association Activated Sludge Population Dynamics Specialist Conference, Gold Coast, Australia.

152. Henriques, I. D. S., Aga, D., Mendes, P. and Love, N. G. 2005. Metabolic footprinting: A new approach to identify changes in activated sludge physiology upon exposure to toxic compounds. *Proceedings of the 4th International Water Association Activated Sludge Population Dynamics Specialist Conference*, Gold Coast, Australia, 12 pages. *(Invited for selective inclusion in Water Science & Technology but declined and submitted for publication in Environmental Science and Technology. See 2007 journal publication)*

153. Henriques, I. D. S., Kelly II, R. T. and Love, N. G. 2004. Deflocculation Effects Due to Chemical Perturbations in Sequencing Batch Reactors. 3rd International Symposium on Sequencing Batch Reactors, International Water Association, Brisbane, Australia.

154. Love, N. G. 2002. Invited keynote speaker. Status and Potential for Biosensors in Wastewater Treatment. European Union COST meeting, *Biosensors in Wastewater*, Milan Italy.

155. Love, N. G. and Bott, C. B. 2001. Evaluating the Role of Microbial Stress Response Mechanisms in Causing Biological Treatment System Upset. Microorganisms in Activated Sludge and Biofilm Processes, Rome, Italy [see associated *Water Science and Technology* publication above].

156. Bott, C. B., Duncan, A. J. and Love, N. G. 2000. Stress Protein Expression in Domestic Activated Sludge in Response to Xenobiotic Shock Loading. First World Congress of the International Water Association, Paris France [see associated *Water Science and Technology* publication above].

157. Ma, G. and Love, N. G. 2000. Creating Anoxic and Microaerobic Conditions in Sequencing Batch Reactors Treating Volatile BTX Compounds. 2nd International Symposium on Sequencing Batch Reactor Technologies, Narbonne, France [see associated *Water Science and Technology* publication above].

158. Gilmore, K. R., K. J. Husovitz, T. Holst, and N. G. Love. 1998. Influent of organic and ammonia loading on nitrifier activity and nitrification performance for a two-stage biological aerated filter system. 1998. *Proceedings of the International Specialty Conference on Microbial Ecology of Biofilms: Concepts, Tools, and Applications,* International Association on Water Quality, Lake Bluff, Illinois, October 8-10, 1998. 309-316.

Published Reports

159. Skerlos, S.J., L. Raskin, N.G. Love, A.L. Smith, L.B. Stadler, and L. Cao, 2013. Challenge Projects on Low Energy Treatment Schemes for Water Reuse, Phase 1 (WateReuse-10-06D). WateReuse Research Foundation, Alexandria, Virginia.

160. Margaret R. Mulholland*, Nancy G. Love*, Deborah A. Bronk, Vikram Pattarkine, Amit Pramanik, H. David Stensel. 2009. Establishing a research agenda for assessing the bioavailability of wastewater treatment plant-derived effluent organic nitrogen in treatment systems and receiving waters. Chesapeake Bay Scientific and Technical Advisory Committee Publication 09-002, http://www.chesapeake.org/stac/Pubs/eonreport.pdf. (*co-chairs)

161. Mulholland, M. R., Love, N. G., Pattarkine, V. M., Bronk, D. A. and Canuel, E. 2007. Bioavailability of Organic Nitrogen from Treated Wastewater. Chesapeake Bay Scientific and Technical Advisory Committee Publication 07-001.

Refereed Conference Presentations (presenter in bold)

162. **Pallmeyer, A. and N. G. Love.** Achieving Resource Efficiency with Resource Recovery: Introduction the NSF INFEWS Project on Urine-Derived Fertilizers. Podium Presentation. 91st Annual Water Environment Federation Technical Exhibition and Conference, New Orleans, LA, October 1-3, 2018.

163. **Bekele, Z.**, J. Delgado Vela, C. B. Bott, N. G. Love. Sensor-mediated Control for Aerobic Granular Sludge Process Treating Mainstream Anaerobic Effluent. Podium presentation. 91st Annual Water Environment Federation Technical Exhibition and Conference, New Orleans, LA, October 1-3, 2018.

164. Tarpeh, W., D. S. Aga, N. G. Love, K. Wigginton. Assessing Risks from Pharmaceuticals and Transformation Products in Urine-Derived Fertilizers. Podium presentation. American Chemical Society Annual Meeting. New Orleans, LA. March 2018.
165. Rodriguez, E., W. Tarpeh, H. Clack, N. G. Love, K. Wigginton. 2018. Degradation of pharmaceuticals in synthetic urine treated with plasma. Poster Presentation. American Chemical Society Meeting, New Orleans, LA, March 18-22, 2018.
166. Zerihun A. Bekele, Imre Takacs, Charles B. Bott, and Nancy G. Love. Harnessing biofilm models to advance nitrogen removal from mainstream anaerobic wastewater treatment processes. Poster presentation. WRRMod2018 conference, Quebec, Canada, March 2018.
167. Carlson, A., N. G. Love, G. T. Daigger and E. Hart. Trouble-shooting long-term biofouling in full-scale membrane bioreactor. International Water Association Young Water Professionals Conference, South Africa. December 10-14, 2017.
168. Goetsch, H.E., Love, N.G., Imperiale, M.J., Wigginton, K. Fate of Human BK polyomavirus through urine diverted for fertilizer. 2nd International Resource Recovery Conference: New York City, NY, USA August 5-9, 2017.
169. Delgado Vela, J., Dick, Gregory J., Love, N.G. The Impact of Sulfide on Nitrification: Implications for Nitritation Processes. Fifth International Conference on Nitrification and Related Processes (ICoN5): Early Career and Graduate Student Workshop. Vienna, Austria, July 23-27, 2017.
170. Zerihun A. Bekele, Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love. Using sensor-mediated control and modeling to develop an aerobic granular sludge technology for low energy nitrogen. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017.
171. Troutman, S. C., N. G. Love, B. Kerkez. 2017. Controlling a Sewer Network as an Extension of the Wastewater Treatment Plant. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
172. Chia-Chen Wu, Katie Stroh, Shawn P. McElmurry, Terese M. Olson, and Nancy G. Love. Understanding the transmission of planktonic and sessile bacteria across point-of-use (PoU) filters. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
173. Delgado Vela, J., Dick, Gregory J., Love, N.G. Managing Healthy Activated Sludge Communities: Understanding the Impact of Sulfide on Nitrogen Removal. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
174. Troutman, S. C., N. G. Love, B. Kerkez. 2017. Understanding Combined Sewer Flow Dynamics through Data-Driven Modeling. World Environmental & Water Resources Congress, EWRI. Sacramento, CA, USA. May 21-25 2017.
175. Zerihun A. Bekele, Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love. Aerobic granular sludge process optimization and modeling for mainstream anaerobically treated wastewater. Poster presented at IWA Biofilm Reactors Conference, Dublin. Ireland, May 2017
176. Goetsch, H., M. Imperiale, N. G. Love, K. R. Wigginton. 2017. Fate of human polyomavirus in urine diverted for fertilizer use. American Chemical Society 253rd National Meeting, San Francisco, CA, April 2017.
177. Goetsch, H., M. Imperiale, N. G. Love, K. R. Wigginton. Refining liquid gold: Fate of human polyomavirus in urine diverted for fertilizer use. Oral presentation. Borchardt conference, Ann Arbor, Michigan, February 2017.
178. Troutman, S., N. G. Love, B. Kerkez. Use of Real-Time Sensor Data in City-Scale Water Modeling. Poster presentation presented at two different conferences: Borchardt conference, Ann Arbor, Michigan, February 2017; and CUAHSI Biennial Symposium
179. Zhao, Z., M. P. Runho, C.-C. Wu, A. Zarb, T. M. Olson, S. P. McElmurry, and Nancy G. Love. 2017 Effect of flushing on microbiological quality of water effluent from point-of-use filters. Poster presentation, Borchardt conference, Ann Arbor, Michigan, February 2017.
180. Alemayehu, Z., C. B. Bott and N. G. Love. 2017. Achieving nitrogen removal from mainstream anaerobically treated wastewater using aerobic granular sludge with low aeration rate. Poster presentation, Borchardt conference, Ann Arbor, Michigan, February 2017.

181. Delgado Vela, J., Z. A. Bekele, A. McFarland, A. Arcelay, K. J. Martin, C. B. Bott, G. J. Dick and N. G. Love. 2016. The membrane aerated biofilm reactor for nitrogen removal from mainstream anaerobic processes. 89th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, Sept 25-28, 2016.

182. Troutman, S., N. G. Love, B. Kerkez. 2016. Predicting combined sewer flow through the use of real-time, city-scale sensor data. Oral presentation, World Environmental and Water Resources Congress, ASCE, West Palm Beach, Florida, May 2016.

183. Delgado Vela, J., Martin, K. J., McFarland, A., Beaton, N., Stadler, L.B., Skerlos, S.J., Raskin, L., Bott, C. B., Love, N.G. Removing nitrogen from effluents of anaerobic wastewater treatment processes: Understanding control and operation through biofilm modeling. 250th American Chemical Society National Meeting and Exhibition. Boston, MA, August 16-20, 2015. (podium).

184. Delgado Vela, J., K. J. Martin, A. R. McFarland, N. L. Beaton, L. B. Stadler, C. B. Bott, L. Raskin, S. J. Skerlos, N. G. Love, A. Salveson, T. Rauch-Williams. 2015. Advancing energy neutral wastewater treatment: removing nitrogen and dissolved methane from dilute anaerobic effluents. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).

185. Stadler, L. B., J. Delgado Vela and N. G. Love. 2015. Elucidating the relationship between wastewater treatment plant microbial diversity and pharmaceutical fate. AEESP Biannual Conference, Yale University, June 14-16 (podium presentation), *winner of best student paper award.*

186. Goetsch, H., R., Lahr, R. Mullen, A. Noe-Hays, D. Aga, C. B. Bott, J. Jimenez, N. G. Love, K. Nace and K. Wigginton. 2015. Fate or organic contaminants in urine-derived fertilizers. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).

187. Lahr, R., H., Goetsch, A. Noe-Hays, D. Aga, C. B. Bott, B. Foxman, J. Jimenez, N. G. Love, T. Luo, R. Mullen, K. Nace, K. Ramadugu and K. Wigginton. 2015. Microbial communities in urine separated for nutrient recovery. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).

188. Stadler, L. B., J. Delgado Vela and N. G. Love. 2015. Elucidating the relationship between wastewater treatment plant microbial diversity and pharmaceutical fate. American Society for Microbiology, New Orleans, LA, May 30-June 2 (Poster Presentation).

189. Goetsch, H., R. Lahr, A. Desta, N. G. Love, C. Bott, A. Gagnon, K. Nace, A. Noe-Hays, D. S. Aga, R. Mullen, J. Jimenez, K. Wigginton, 2015. Fate of pharmaceutical and biological contaminants through the preparation and application of urine-derived fertilizers. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.

190. Stadler, L., J. Delgado Vela and N. G. Love. 2015. Impact of low dissolved oxygen and microbial community on pharmaceutical biotransformations during wastewater treatment. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.

191. Delgado-Vela, J., K. J. Martin, N. Beaton, A. McFarland, L. B. Stadler, C. B. Bott, S. J. Skerlos, L. Raskin, N. G. Love. 2015. Nutrient removal from mainstream anaerobic processes using a membrane aerated biofilm reactor and a granular sludge sequencing batch reactor. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.

192. Delgado Vela, J., Martin, K.J., Stadler, L.B., Bott, C. Skerlos, S.J., Raskin, L,. Love, N.G., 2014. Nutrient Removal from Mainstream Anaerobic Effluents: Linking Biofilm Modeling to Experimental Design. 87th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 28-October 1. (poster presentation)

193. Love, N. G. 2014. Achieving resilience and sustainability in the global urban water sector – a role for environmental chemistry. Special Seminar Series: Women in Environmental Chemistry and Engineering, Abstract 312-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10-14. (podium presentation)

194. Stadler, L. B., Su, L., Aga, D. S., and Love, N. G. 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. Abstract 415-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)

195. Wu, C.-C., K. J. Martin, A. Perez De La Rosa, G. Ryskamp, N. G. Love and T. M. Olson. 2014. Effect of disinfection by-products on antibiotic resistance in the bacterial communities of point-of-use (PoU) drinking water filters. Abstract 473-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)

196. Lester, Y., N. G. Love, D. S. Aga, R. Singh and K. G. Linden. 2014. Demonstrating advanced oxidation/biofiltration to remove emerging contaminants from wastewater: A pilot study. Abstract 130-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)

197. Aga, D. S., K. G. Linden, N. G. Love, R. Singh, Y. Lester, O. S. Keen and S. Baik. 2014. Identification of degradation products of carbamazepine and iopromide after UV/H2O2 advanced oxidation and biodegradation. 283-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)

198. Stadler, L. B., Smith, A. L., Jain, A. K., Martin, K. J., Delgado Vela, J., Puente, P., Cao, L., Frenette, S., Bott, C. B., Rauch-Williams, T., Shimada, T., Salveson, A., Love, N. G., Raskin, L., and Skerlos, S. J. 2014. Integrating Life Cycle Assessment and Experimental Research: Evaluating Anaerobic Membrane Bioreactors in Domestic Wastewater Treatment for Energy Recovery. Borchardt Conference. Ann Arbor, MI, February 25 – 26, 2014. (podium presentation)

199. Stadler, L. B., Su, L., Aga, D. S., and Love, N. G. 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. Iowa City, IA, August 19 – 22. (podium presentation)

200. Stadler, L. B., Smith, A. L., Cao, L., Love, N. G., Raskin, L., and Skerlos, S. J. 2013. Life Cycle Comparison of Emerging and Established Wastewater Energy Recovery Systems. In Mainstream Anaerobic Treatment Systems for Energy Neutral Wastewater Management Workshop at the 86th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, October 5 – 9.

201. Stadler, L.B., A.L. Smith, L. Cao, N.G. Love, L. Raskin, and S.J. Skerlos, 2013. Life cycle comparison of emerging and established wastewater energy recovery systems. Poster presentation. *2013 AEESP Education & Research Conference*, July 14-16, Denver, Colorado.

202. Delgado-Vela, J., Stadler, L.B., and Love, N. G. 2013. Elucidating Biotransformation of Pharmaceuticals by Methanotrophic Bacteria. Association of Environmental Engineering & Science Professors 50th Anniversary Conference. Golden, CO, July 14 – 16.

203. Moline, C. J., Stadler, L. B., Su, L., Ernstoff, A. S., Dapcic, A. D., Vela, J. D., Aga, D., and Love, N. G. 2012. Pharmaceutical Fate Under Varying Redox Treatment Environments. Proceedings of the 85th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 29 - October 3.

204. Smith, A. L., Stadler, L. B., Cao, L., Love, N. G., Raskin, L., and Skerlos, S. J. 2012. Performance and environmental impacts of anaerobic membrane bioreactor for low-strength wastewater treatment, Proceedings of the 85th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 29-October 3.

205. Jimenez, J., C. B. Bott, N. G. Love and J. Bratby. 2012. Source separation of urine as an alternative solution to nutrient management in wastewater treatment plants: a model-based analysis. Water Environment Federation Technical Exhibition and Conference. New Orleans, LA. Sept 30-Oct 3, 2012. Podium presentation.

206. Love, N.G. 2012. Challenges in predicting micropollutant fate in biological processes. WWTMod2012 workshop on modelling micropollutant fate in biological processes, Mont-Sainte-Anne, Québec, Canada, Feb 26-28, 2012. Podium presentation

207. Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N. Impact of Copper Stress on Nitrification Performance and the Ammonia Oxidizer Community Structure in Activated Sludge. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.

208. Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin. 2011. Psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.

209. Smith, A.L., Z. Li, H. Dorer, N.G. Love, S. Skerlos, and L. Raskin, 2011. Energy recovery from domestic wastewater using anaerobic membrane bioreactors. *2011 Borchardt Conference*, February 23-24, Ann Arbor, Michigan.

210. Guest, J. S., N. G. Love, S. Snowling, C. B. Bott, G. T. Daigger and S. J. Skerlos. Quantitative sustainable design of wastewater treatment plants. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.

211. Keen, O., S. Baik, K. Linden, D. Aga and N. G. Love. 2011. Degradation of carbamazepine during UV/H_2O_2 treatment of wastewater. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.

212. Smith, A., N. G. Love, S. J. Skerlos, and L. Raskin. Role of membrane biofilm in psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.

213. Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N. Impact of Copper Stress on Ammonia Oxidizer Activity and Community Structure in Nitrifying Activated Sludge. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.

214. Guest, J.S., S.J. Skerlos, N.G. Love. 2011. Quantitative sustainable design of wastewater treatment plants. *Engineering Sustainability 2011*, Pittsburgh, PA, March 10-12, 2011, Podium presentation.

215. Cook, S. M., B.J. VanDuinen, S.J. Skerlos, N.G. Love. Life cycle comparison of environmental impacts from alternative pharmaceutical disposal methods. *Engineering Sustainability 2011 Conference*, Pittsburgh, PA, April 11, 2011

216. Smith, A.L., N.G. Love, S.J. Skerlos, and L. Raskin. 2010. Anaerobic membrane bioreactors for sustainable domestic wastewater treatment at psychrophilic temperatures. *Proceedings of the 12th World Congress on Anaerobic Digestion*, Guadalajara, Mexico, November 1-4, 2010

217. Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin. 2011. Role of membrane biofilm in psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. *Proceedings of the 84th Annual Water Environment Federation Technical Exhibition and Conference*, Los Angeles, California, October 15-19, 2011.

218. Pinto, A.J. and N.G. Love. Impact of chemical perturbation on trophic interactions and its implications for ecosystem function in an engineered environment. *13th International Symposium on Microbial Ecology 2010*, Seattle, Washington. August 22-27, 2010

219. Love, N.G., W. O. Khunjar, S. Mackintosh, S. Baik, and D. Aga. The Relative Roles of Ammonia Oxidizing and Heterotrophic Activated Sludge Bacteria in Biotransforming 17α-Ethinylestradiol and Trimethoprim. Podium presentation, AEESP Special Session. 83rd Water Environment Federation Technical Exposition and Conference 2010, New Orleans, LA, October 3-6, 2010.

220. Pinto, A.J., Hardin, S.C., Love, N.G., Fairey, A., Earle, J., Washington, P., Iler, P., Doane-Weideman, T., and Lagrange, R. Remedial Intervention Strategies for Wastewater Treatment Plant Exposed to Heavy Metal Stress: Laboratory and Pilot Scale Evaluations. Podium presentation. *Proceedings of the 82nd Water Environment Federation Technical Exposition and Conference 2009*, Orlando, Florida, October 10-14, 2009.

221. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Baik, S., Love, N.G., Aga, D.S., Harper Jr., W.F. The Impact of Physiological State and Residual Organic Carbon on the Biotransformation of 17α-Ethinylestradiol and Trimethoprim by Heterotrophic Bacteria. Podium Presentation. *82nd Annual Water Environment Federation Technical Exposition and Conference*, Orlando, Florida, October 10-14, 2009.

222. Guest, J. S.; Cook, S. M.; Skerlos, S. J.; Love, N. G. 2009. A methodology to assess the environmental impacts of upgrading wastewater infrastructure: A case study to evaluate energy recovery from black water. Podium presentation. *Proceedings of the 82nd Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC*), Orlando, Florida, October 10-14, 2009.

223. Thomas, W.A., Bott, C.B., Regmi, P., Schafran, G., Pinto, A., Love, N.G., McQuarrie, J., Rutherford, B., Baulmer, R., Waltrip, D. Evaluation of Nitrification Kinetics for a 2.0 MGD IFAS demonstration project. Podium presentation. *Proceedings of the 82nd Water Environment Federation Technical Exposition and Conference 2009*, Orlando, Florida, October 10-14, 2009.

224. Pinto, A.J., N. G. Love, A. Fairey, J. Earle, P. Washington, P. Iler, T. Doane-Weideman, and R. Lagrange. 2009. Integration of online sensors with corrective action strategies to detect, monitor, and mitigate toxic shock events at nutrient removal wastewater treatment plants. *Water Environment Federation: Nutrient Removal Conference.* Washington, DC. June 28-July 1, 2009.

225. Loh, K. J., J. S. Guest, G. Ho, J. P. Lynch, and N. G. Love. 2009. Layer-by-layer carbon nanotube bio-templates for in situ monitoring of the metabolic activity of nitrifying bacteria. *SPIE Smart Structures and Materials*, San Diego, CA.

226. Ghosh, S. and N. G. Love. MexAB-OprM efflux pump mediated changes in antibiotic susceptibilities of *Pseudomonas aeruginosa*. ASM General Meeting, Philadelphia. May 19, 2009.

227. Love, N. G., D. Bronk, E. Canuel, M. Poteat, Q. Roberts, K. C. Filippino, P. Hatcher, R. Mesfioui, M. M. Mulholland, and G. Ho. The importance of effluent organic nitrogen fate and its contribution to N management in N-limited regions. Podium presentation. *Association of Environmental Engineering and Science Professors Conference,* July 26-29, 2009, Iowa City, IA.

228. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. 2009. Elucidating the role of ammonia oxidizing bacteria versus heterotrophic bacteria in the biotransformation of 17α-ethinylestradiol. Poster Presentation. *Association of Environmental Engineering and Science Professors Conference,* July 26-29, 2009, Iowa City, IA.

229. Pinto, A.J., J. S. Guest, R. Roots, N. G. Love, and S. Skerlos. 2009. A project-based active learning framework to introduce freshman engineering students to sustainable waste management and waste-to-energy technologies. Podium presentation. *Association of Environmental Engineering and Science Professors 2009 Conference*. Iowa City, IA, July 26-29, 2009.

230. Pinto, A.J. and N. G. Love. 2009. Structural and Functional Response of the Ammonia Oxidizing Bacterial Community to Acute Cadmium Stress in Laboratory and Pilot Scale Activated Sludge Systems. Poster presentation. *Association of Environmental Engineering and Science Professors 2009 Conference*. Iowa City, IA, July 26-29, 2009.

231. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. 2009. Elucidating the Role of Ammonia Oxidizing Bacteria versus Heterotrophic Bacteria in the biotransformation of 17α-ethinylestradiol. Poster presentation. *Micropol and Ecohazard 2009, 6th IWA/GRA Specialized Conference on Assessment and Control of Micropollutants/Hazardous Substances in Water* June 2009, San Francisco, CA.

232. Cook, S. M., J. S. Guest, M. G. Christianson, N. G. Love, S. J. Skerlos. 2009. Energy Recovery from Wastewater: Evaluation of Resource Management Alternatives for Appropriate and Environmentally Sustainable Energy Production. Podium presentation, *Engineering Sustainability 2009 Conference*, Pittsburgh, PA, April 21, 2009.

233. H.A. Tucker, K.F. Knowlton, and N.G. Love. 2009. Fecal and urinary estrogens in dairy heifers during the estrous cycle. *J. Dairy Sci.* 92 (Suppl. 1).

234. Hardin, S., A. Pinto, N. G. Love, and A. Shaw. 2008. Impact of Contaminant-Specific Corrective Action Strategies on Wastewater Treatment Plant Performance and Recovery. Poster presentation. *Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008. *1st Place - Best Poster Award.*

235. Khunjar, W. O., Skotnicka-Pitak, J., Yi, T., Love, N.G., Aga, D.S., Harper Jr., W.F. 2008. Biotransformation of pharmaceutical, personal care products during nitrification – the role of nitrifiers vs. heterotrophs. Podium presentation. *ASCE World Environmental &Water Resources Congress 2008.* Honolulu, HI.

236. Love, N. G. and Skerlos, S. J. 2008. Global Sustainable Water Systems – Acknowledging Wastewater as a Resource. *Graham Environmental Sustainability Institute Water, Health + Environment Workshop*, University of Michigan, March 26-27, 2008.

237. Musabyimana, M., N. G. Love, C. B. Bott and S. Murthy. 2008. Evaluation of nitrite inhibition and toxicity in the deamonification process. Podium presentation alternate. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition,* Chicago, IL, October 19-22, 2008.

238. O'Shaughnessy, M, M. Musabyimana, J. Sizemore, S. Murthy, B. Wett, I. Takacs, D. Houweling, P. Sanjines, N. Love, K. Pallansch, 2008. Operations and process control of the deammonification process as a sidestream option for nutrient removal. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition,* Chicago, IL, October 19-22, 2008.

239. Khunjar, W. O., J. Skotnicka-Pitak, N. G. Love, D. Aga, W. F. Harper Jr. 2008. Elucidating the role of nitrifiers versus heterotrophic bacteria in the biotransformation of 17α-ethinylestradiol during wastewater treatment. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition,* Chicago, IL, October 19-22, 2008.

240. Gilmore, K. R., N. G. Love, B. F. Smets, A. Terada, J. Garland. 2008. Nitrifier and anammox population dynamics in an autotrophic nitrogen removal membrane biofilm reactor. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition,* Chicago, IL, October 19-22, 2008.

241. Pinto, A., S. Hardin and N. G. Love. 2008. Structural and functional responses of the ammonia oxidizing community in activated sludge exposed to cadmium stress. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition,* Chicago, IL, October 19-22, 2008.

242. Gilmore, K. R., B. F. Smets, J. L. Garland, A. Terada, and N. G. Love. 2008. Controlling gaseous nitrogen oxide emissions and nitrogen removal performance in hollow fiber membrane aerated biofilm reactors. *Proceedings of the WEF Membrane Technology 2008 Conference*, Atlanta, Georgia, January 27-30, 2008.

243. DeBusk, J. A., J. Arogo Ogejo, N. G. Love, K. F. Knowlton. 2007. Adjusting nitrogen to phosphorus ratios in liquid dairy manure through nitrification and chemical phosphorus removal to match crop fertilizer requirements. Podium presentation. *Proceedings of the American Society of Agricultural and Biological Engineers (ASABE)*, Paper No. 074048, June 17-20, 2007.

244. Guest, J. S., A. J. Pinto, N. G. Love and A. Shaw. 2007. Corrective action strategies for enhanced biological phosphorus removal WWTPs during short-term and prolonged toxic shock events. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

245. Khunjar, W. O., C. Klein, T. Yi, N. G. Love, D. Aga, and W. F. Harper Jr. 2007. Cometabolism of pharmaceutical, personal care products (PPCPs) by the ammonia oxidizing bacterium Nitrosomonas europaea. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

246. Ikuma, K., I. D. S. Henriques, B. J. Love and N. G. Love. 2007. Immobilization of *Pseudomonas aeruginosa* in alginate microbeads for use in a biosensor designed to detect oxidative toxins. Podium

presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

247. Gilmore, K. R., N. G. Love and B. F. Smets. 2007. Oxygen mass transfer in a flow-through hollow fiber membrane aeration reactor. Poster presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

248. Beck, J. L., K. R. Gilmore, N. G. Love, K. F. Knowlton and J. Arogo Ogejo. 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

249. Pinto, A.J., Guest, J.S., Love, N.G., and Shaw, A. 2007. Elucidating the importance of contaminant specific corrective action strategies for wastewater treatment plants during toxic shocks. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition (WEFTEC*), San Diego, CA, October 14-17, 2007.

250. Khunjar, W. O., Klein, C., Skotnicka-Pitak, J., Yi, T., Love, N. G., Aga, D., Harper, W. F. Jr. 2007. Biotransformation of pharmaceuticals and personal care products (PPCPs) during nitrification: the role of ammonia oxidizing bacteria versus heterotrophic bacteria. WEF Specialty Conference - Compounds of Emerging Concern: What's on the Horizon? Providence, Rhode Island, July 29-30, 2007, Podium presentation.

251. Fang, Y., Zhao, Z., Love, N. G., Knowlton, K. F., Novak, J. T. 2007. Detecting endocrine disrupting compounds in various waste matrices using a bioassay. WEF Specialty Conference - Compounds of Emerging Concern: What's on the Horizon? Providence, Rhode Island, July 29-30, 2007, Podium presentation.

252. Ikuma, K. Fraga Muller, J., Stevens, A. M., Hagedorn III, C., Love, N. G. 2007. Evaluating the extent of pollution-induced antibiotic resistance in environmental bacterial strains. *American Water Resources Association Summer Specialty Conference – Emerging Contaminants of Concern in the Environment: Issues, Investigations and Solutions*. Vail, Colorado, June 25-27, 2007, Podium presentation.

253. Khunjar, W. O., Klein, C., Yi, T., Henriques, I. D. S., Love, N. G., Aga, D. S., Harper Jr., W. F. 2007. The relative roles of ammonia oxidizing bacteria versus heterotrophic bacteria in biotransforming 17α-ethinylestradiol under low growth rate conditions. *American Water Resources Association Summer Specialty Conference – Emerging Contaminants of Concern in the Environment: Issues, Investigations and Solutions*. Vail, Colorado, June 25-27, 2007, Podium presentation.

254. Zhao, Z., K. F. Knowlton, N. G. Love and Y. Fang. 2007. Advanced treatment to reduce the estrogen content of dairy manure. *American Society of Civil Engineers World Environmental & Water Resources Congress*, Tampa Bay, FL., May 15-19, 2007. Podium presentation.

255. Zhao, Z., Knowlton, K.F., Love, N. G., and Fang, Y. 2007. Dairy manure estrogens with advanced treatments. *Journal of Dairy Science*, 90:332, Supplement 1.

256. Pinto, A. J., Love, N. G. 2007. Elucidating the importance of contaminant specific corrective action strategies for wastewater treatment plants during toxic shocks. Poster presentation. *Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

257. Beck, J. L., N. G. Love, K. F. Knowlton and J. Arogo Ogejo. 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Poster presentation. *Proceedings of the American Society of Agricultural and Biological Engineers (ASABE)*, June 17-20, 2007.

258. Khunjar, W. O., Baik, S., Celiz, D., Yi, T., Henriques, I.D.S., Love, N. G., Aga, D. S., Harper Jr., W. F. 2007. Evaluation of the fate of environmentally relevent micropollutants. Podium presentation. *American Society of Civil Engineers World Environmental & Water Resources Congress*, Tampa Bay, FL., May 15-19, 2007.

259. Klein, C., Aga, D. S., Love, N. G., Khunjar, W. O., and Harper Jr., W. F. 2007. Characterizing the degradation products of 17 alpha-ethinylestradiol in activated sludge systems by LC/MS. 58th

Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy. Chicago, IL, Feb 25-March 2, 2007. Podium presentation.

260. Harper Jr. W.F., Love, N.G., Aga, D.S., Yi, T., Khunjar, W.O., Klein, C., O'Connor, S. Evaluating the link between nitrification and the removal of 17α-ethinylestradiol. Poster presentation. *Nutrient Removal 2007: The State of the Art. Water Environment Federation Specialty Conference*, Baltimore, MD.

261. Ikuma, K., Rzigalinski, B. A. and Love, N. G. 2007. Predicting the public health impact of oxidative toxins using a bacterial glutathione-gated potassium efflux stress response biosensor. 233rd American Chemical Society National Meeting, Chicago, Illinois, March 25-29, 2007.

262. Chandran, K. and Love, N. G. 2006. Cd(II) mediated inhibition of *Nitrosomonas europaea* is linked to oxidative stress and is impacted by physiological state and growth mode. *Proceedings of the Water Environment Federation 79th Annual Conference and Exposition*, Dallas, TX Oct 22-25, 2006. *(Number 1 Abstract out of 120+ submissions for Research Symposium)*

263. Kelly, R. T. Jr. and Love, N. G. 2006. The role of glutathione mediated stress response mechanisms in nitrifying bacteria. *Proceedings of the Water Environment Federation 79th Annual Conference and Exposition*, Dallas, TX Oct 22-25, 2006.

264. Zaklikowski, A., Love, N. G., Vikesland, P. and Chandran, K. 2006. The effect of breakpoint chlorination practices on the activity, viability and recovery of nitrifying bacteria in chloraminated water. American Water Works Association Annual Meeting, Universities Forum. June 12, 2006.

265. Henriques, I. D. S., Aga, D., Mendes, P. and Love, N. G. 2005. Metabolic footprinting: A new approach to identify changes in activated sludge physiology upon exposure to toxic compounds. *Proceedings of the Water Environment Federation 78th Annual Conference and Exposition*, Washington DC, Oct 31-Nov 2, 2005, 12 pages.

266. Muftugil, M., Knowlton, K. F., and Love, N. G. 2005. Using enhanced biological phosphorus removal to minimize nutrient delivery from dairy farms to receiving waters. Poster presentation at Water Environment Federation 78th Annual Conference and Exposition, Washington DC, Oct 31-Nov 2, 2005.

267. Henriques, I. D. S., Aga, D., Mendes, P., and Love, N. G. 2005. Metabolic Footprinting: A New Approach to identify Changes in Activated Sludge Physiology upon Exposure to Toxic Compounds. Association of Environmental Engineering and Science Professors Conference, July 24-26, Clarkson University, Potsdam, New York.

268. Fraga Muller, J., Craig, J., Stevens, A. M., and Love, N. G. 2005. Using Whole Genome Arrays to Investigate Functional Response to Contaminant Stress: the Response of *Pseudomonas aeruginosa* to Pentachlorophenol. Association of Environmental Engineering and Science Professors Conference, July 24-26, Clarkson University, Potsdam, New York.

269. Fraga Muller, J., Craig, J., Stevens, A. M., and Love, N. G. 2005. The Stress Response of *Pseudomonas aeruginosa* to Pentachlorophenol. *Abstracts of the 105th General Meeting of the American Society for Microbiology*, Atlanta Georgia.

270. Kelly II, R. T. and Love, N. G. 2004. Investigating the role of oxidative stress mechanisms in chemically-inhibited nitrifiers. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 22 pages.

271. Kelly II, R. T. and Love, N. G. 2004. A critical comparison of methods used to determine nitrification inhibition. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 15 pages.

272. Henriques, I. D. S., Stevens, A. M. and Love, N. G. 2004. Is biomass concentration a factor determining the sensitivity of activated sludge to toxic shocks? *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 22 pages.

273. Linares, K., Fleming, D., Xu, Y., Love, N. G., Love, B. J. and Meehan, K. 2004. Evaluating strategies for integrating bacterial cells into a biosensor designed to detect electrophilic toxins. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 17 pages.

274. Leung, S.M., Little, J. C., Holst, T., and Love, N. G. 2003. Oxygen transfer and consumption in a biological aerated filter. *Proceedings of the Water Environment Federation 76th Annual Conference and Exposition*, Los Angeles, CA October 2003.

275. Dauphinais, J. L. and Love, N. G. 2003. Determination of toxic inhibition potential from industrial dischargers to a POTW using a respirometric assay. *Proceedings of the Water Environment Federation 76th Annual Conference and Exposition*, Los Angeles, CA October 2003.

276. Yanosek, K.A., Wolfe, M. L. and Love, N. G. 2003. Assessment of enhanced biological phosphorus removal for dairy manure treatment. In the *Animal, Agricultural and Food Processing Wastes, Proceedings of the Ninth International Symposium*, 11-14 October 2003 (Raleigh, North Carolina, USA), ed. Robert Burns. ASAE Pub #701P1203. pp. 212-220.

277. Henriques, I. D. S. and Love, N. G. 2003. The role of floc morphology and composition on susceptibility of biomass to shock loads of chemical toxins. Poster presentation at Water Environment Federation 76th Annual Conference and Exposition, Los Angeles, CA October 2003. *1st Place - Best Poster Award.*

278. Holbrook, R.D., Novak, J. T. and Love, N. G. 2002. The role of particulate and colloidal material in the fate and transport of endocrine disrupting compounds. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.

279. Leung, S., Holst, T., Love, N. G. and Little, J. C. 2002. A fundamental investigation of oxygen utilization in a biological aerated filter. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.

280. Kelly, R. T. II, Henriques, I. D. S., Dauphinais, J. and Love, N. G. 2002. Evaluation of source-effect relationships for activated sludge response to shock loads of disruptive chemical toxins. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.

281. Wimmer, R. F. and Love, N. G. 2002. Activated sludge deflocculation in response to chlorine addition: the potassium connection. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.

282. Love, N. G., Wimmer, R. F., Barker, S., Travis, J., Love, B. J., and Locascio, L. 2002. Developing sensing technologies to enable proactive operations in biological wastewater treatment. Association of Environmental Engineering and Science Professors/American Academy of Environmental Engineers Conference, August 10-14, University of Toronto, Toronto, Canada, p. 24.

283. Holbrook, R. D., Novak, J. T. and Love, N. G. 2001. Process considerations for the reduction of endocrine disruption potential in wastewater effluents. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.

284. Wimmer, R. F., Waddell, E., Barker, S. L. R., Suggs, A., Locascio, L., Love, B. J. and Love, N. G. 2001. Development of an upset early warning device to predict deflocculation events. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.

285. Phipps, S. D. and Love, N. G. 2001. Quantifying observed biomass yield in a biological aerated filter. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.

286. Love, N. G., C. B. Bott, K. C. Terlesky. 2001. Proteomic approach to assessing environmental stress in complex microbial communities." Oral presentation at the 221st American Chemical Society National Meeting, San Diego, CA. April 2, 2001.

287. Bott, C. B., Abrajano, J. and Love, N. G. 2000. A physiological mechanism for activated sludge deflocculation caused by shock loads of toxic chemicals. *Proceedings of the Water Environment Federation 73rd Annual Conference and Exposition*, Anaheim, CA, October 14-18, 2000.

288. Fouratt, M., Smithers, C., Love, N. G., and Stevens, A. M. 2000. The characterization of nitrifying bioaugmentation cultures. Poster presentation. *Abstracts of the 100th General Meeting of the American Society for Microbiology*, Los Angeles, CA. p. 491.

289. Fouratt, M., Smithers, C., Love, N. G., and Stevens, A. M. 2000. The characterization of nitrifying bioaugmentation cultures. Poster presentation. *Abstracts of the 100th General Meeting of the American Society for Microbiology*, Los Angeles, CA. p. 491.

290. Delahaye, A., Gilmore, K. R., Husovitz, K. J., Love, N. G., Holst, T., Novak, J. T. 1999. Distribution and characteristics of biomass in pilot-scale upflow biological aerated filters treating domestic wastewater. Podium presentation. *Proceedings of the International Association on Water Quality Conference on Biofilm Systems*, New York, NY, October 17-21.

291. Love, N. G., Gilmore, K. G., Husovitz, K. J., Delahaye, A. P., Novak, J. T. and Little, J. C. 1999. Performance of a Biological Aerated Filter System Treating Domestic Wastewater for BOD, Ammonia and TSS Removal: Pilot Plant Results. Podium presentation. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.

292. Husovitz, K. L., Gilmore, K. R., Delahaye, A. P., Love, N. G., and Little, J. C. 1999. The influence of upflow liquid velocity on nitrification in a biological aerated filter. Podium presentation. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.

293. Love, N. G., Bott, C. B., Duncan, A. J., Terlesky, K. C. 1999. Using the molecular stress response as an indicator of system stress in complex environmental systems. Selected Podium Presentation, Association of Environmental Engineering and Science Professors Research Frontiers Conference, Pennsylvania State University, University Park, PA.

294. Bott, C. B., Terlesky, K. C., Duncan, A. Jane, Wheeler, J., and Love, N. G. 1998. The immunochemical detection of stress proteins as an indicator of toxic discharges to activated sludge systems. Podium presentation. *Proceedings of the Water Environment Federation 71st Annual Conference and Exposition*, Orlando, FL, October 3-7, 1998. 1:203-214.

295. Phillips, J. B., and Love, N. G. 1998. Biological denitrification using upflow biofiltration in recirculating aquaculture systems: pilot-scale experience and implications for full-scale. Podium presentation. *Proceedings of the Second International Conference on Successes and Failures in Commercial Recirculating Aquaculture*, Roanoke, VA. pp 171-178.

296. Terlesky, K. C. and Love, N. G. 1998. Detection of Hsp60 in activated sludge following exposure to xenobiotic compounds. Poster Presentation, *Abstracts of the 98th General Meeting of the American Society for Microbiology*, Atlanta, Georgia, p. 444.

297. Terlesky, K. C., and Love, N. G. 1998. Photoheterotrophy in activated sludge, Poster Presentation, *Abstracts of the 98th General Meeting of the American Society for Microbiology*, Atlanta, Georgia, p. 423.

298. Fettig, J. D., and Love, N. G. 1997. BTX degradation in activated sludge culture under denitrifying conditions. Podium presentation. *Proceedings from the 2nd International Conference on Microorganisms in Activated Sludge and Biofilm Processes*, International Association on Water Quality, Berkeley, CA, pp 579-582.

299. Lubkowitz, E. M. and Love, N. G. 1997. Development of a single sludge biological treatment scheme that incorporates nitrogen removal for a wastewater containing compounds inhibitory to nitrification. Podium presentation. *Proceedings of the Water Environment Federation 70th Annual Conference and Exposition*, Chicago, IL, October 18-22, 1997. 3(2):577-588.

300. Rasnake, W. J., Love, N. G., Black, W. L., and Gruber, D. 1997. Application of a toxicity reduction evaluation at a seafood processing facility which emphasized source reduction and treatment efficiency to minimize environmental risk. Podium presentation. *Proceedings of the 29th Annual Mid-Atlantic Industrial and Hazardous Waste Conference*, Roanoke, VA, pp 263-269.

301. Terlesky, K. C. and Love, N. G. 1997. Analysis of total protein present in activated sludge: applicability to monitoring the induction of indicator proteins in a microbial consortium. Poster presentation. *Abstracts of the 97th General Meeting of the American Society for Microbiology*, Miami Beach, Florida, p. 469.

302. Novak, J. T., Smith, M. L., and Love, N. G. 1996. The impact of cationic salt addition on the settleability and dewaterability of an industrial activated sludge. Podium presentation. *Proceedings of the Water Environment Federation 69th Annual Conference and Exposition*, 2:211-222.

303. Love, N. G. and Grady, C. P. L. Jr., 1995. Impact of glucose and m-toluate on the rate and extent of benzoate-mediated TOL plasmid instability. Poster presentation. *Abstracts of the 95th General Meeting* of the *American Society for Microbiology,* Washington, D.C.

304. Lu, Y.-T., Love, N. G., and Grady, C. P. L. Jr. 1993. A microscopic technique to detect plasmid-free cells in a background of plasmid-containing cells. Poster presentation. *Abstracts of the 93rd General Meeting of the American Society for Microbiology*, Atlanta, Georgia.

Conference Presentations (not listed elsewhere; presenter underlined)

305. Several talks were given by invitation at the Rich Earth Institute's Urine Summit, August 16-17, 2017 in Brattleboro, VT. As PI, Nancy Love was involved with developing content for all these slides and overseeing their presentations.
    - Malavika Sahai. Social Research for the UM INFEWS Project.
    - Heather Goetsch. Microbial risks in source-separated urine.
    - Enrique Rodriguez. Urine-derived fertilizer tool.
    - Dylan Raye-Leonard. Pilot-scale urine diversion and processing @ UMICH

306. Enrique Rodriguez, Dylan Raye-Leonard and Heather Goetsch. 2017. Overview and tour of the urine-diversion and urine processing @Michigan. AEESP Biannual Conference, June 21, 2017.

307. McFarland, A., Larsen, L., Love, N.G. Stormwater Management in Low-Resource Settings Using Green Infrastructure. Fall 2017. Dow Sustainability Symposium, Poster Presentation, Ann Arbor, MI.

308. Delgado Vela, J., Stadler, L., Love, N.G. 2014. Elucidating Biotransformation of Pharmaceuticals by the Methanotroph *Methylosinus trichosporium* Ob3b. Gordon Research Conference Environmental Sciences: Water, Plymouth, NH, June 22-27. (poster presentation)

309. Stadler, L. B., Su, L., Stevens, L., Delgado Vela, J., Aga, D. S., and Love, N. G. 2013. Impact of Redox Environment and Microbial Populations on Pharmaceutical Biotransformation. Poster presentation. IWA 5th International Conference on Microbial Ecology and Water Engineering, Ann Arbor, MI, July 7 – 10. (poster presentation)

310. Stadler, L. B., Su, L., Aga, D. S., and Love, N. G. 2013. Impact of Dissolved Oxygen Concentration on Pharmaceutical Biotransformations during Wastewater Treatment. Poster presentation. Engineering Graduate Symposium, University of Michigan, Ann Arbor, MI, November 15. *(1st place in Civil & Environmental Engineering track poster competition).*

311. Stadler, L. B., Su, L., Aga, D. S., and Love, N. G. 2013. Impact of Redox Environment and Microbial Populations on Pharmaceutical Biotransformation during Wastewater Treatment. Poster presentation. 86th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, October 5 – 9.

312. Delgado Vela, J., Stadler, L., Love, N.G. 2013. Elucidating Biotransformation of Pharmaceuticals by Methanotrophic Bacteria. Association of Environmental Engineering & Science Professors (AEESP) 50th Anniversary Conference, Golden CO, July 14-16.

313. Stadler, L. B., Moline, C. J., Ernstoff, A. S., Su, L., Dapcic, A. D., Aga, D., and Love, N. G. 2012. Pharmaceutical Fate in Biological Treatment Reactors Across Varying Redox Environments. Poster presentation. Gordon Research Conference, Environmental Science: Water. Holderness, NH, June 25 - 29.

314. Love, N.G. Challenges in Predicting Micropollutant Fate in Biological Processes. WWTMod2012 Workshop on Modelling Micropollutant Fate in Biological Processes, Mont-Sainte-Anne, Québec, Canada, Feb 26-28, 2012.

315. Keen, O., Baik, S., Stadler, L. B., Linden, K. G., Aga, D. S., and Love, N.G. 2011. Assessing the Use of Advanced Oxidation and Biofiltration to Remove Recalcitrant Pharmaceuticals Downstream of Biological Treatment. Borchardt Conference, University of Michigan, Ann Arbor, MI, February 23.

316. Cook, S. M. and N.G. Love. A Regional Strategy for Managing Food Processing and Septage Waste: The Grand Traverse Region Collaboration. Oral presentation at *Biogas Summit*. Flint, MI, October 29, 2010.

317. Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin. Methane Production from Domestic Wastewater using Anaerobic Membrane Bioreactors. Oral presentation at *Biogas Summit*, Flint, Michigan, October 29, 2010.

318. Cook, S. M. and N.G. Love. A Regional Strategy for Managing Food Processing and Septage Waste: The Grand Traverse Region Collaboration. *Michigan Food Processors Summit*. Mt. Pleasant, MI, October 20, 2010

319. S. Ghosh, C. M. Cremers, U. Jakob, and N. G. Love. Chlorophenols modulate expression of the multidrug resistance efflux pump MexAB-OprM in *Pseudomonas aeruginosa.* Gordon Research Conference on Environmental Sciences: Water. Holderness, New Hampshire. June 20-25, 2010

320. Guest, J.S., S. J. Skerlos, N. G. Love. 2011. Quantitative sustainable design of wastewater treatment plants. Borchardt 2011 Conference: A Seminar on Advancements in Water and Wastewater, Ann Arbor, MI. February 24, 2011. Podium presentation.

321. Cook, S. M. and N.G. Love. 2011. Two-phase anaerobic codigestion of septage and food processing waste: designing a reliable, regional waste management strategy. *Borchardt 2011 Conference*, Ann Arbor, MI, February 23-24, 2011. Poster presentation.

322. S. Ghosh, J. F. Muller, A. M. Stevens and N. G. Love. Chlorinated phenols and multidrug resistance in *Pseudomonas aeruginosa. Borchardt 2011 Conference*, Ann Arbor, Michigan. February 23-34, 2011. Poster presentation

323. Smith, A.L., Z. Li, H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin. 2011. Energy recovery from domestic wastewater using anaerobic membrane bioreactors. Presented at *Borchardt 2011 Conference*, Ann Arbor, Michigan, February 23-24, 2011. Podium presentation.

324. Keen, O., S. Baik, L. Stadler, K. Linden, D. Aga, N.G. Love. 2011. Assessing the use of advanced oxidation and biofiltration to remove recalcitrant pharmaceuticals downstream of biological treatment. Borchardt 2011 Conference, University of Michigan, Ann Arbor, MI, February 23-24, 2011. Poster presentation.

325. Guest, J.S., S.J. Skerlos, N.G. Love. 2010. An optimization methodology for elucidating locality-specific sustainability trade-offs in wastewater treatment plant process selection. *IWA Leading Edge Conference on Water and Wastewater Technologies*, Phoenix, AZ, June 2, 2010. Poster presentation.

326. Knowlton, K. F., Love, N. G., Thames, T. H., and Z. Zhao. 2010. Is manure turning boy fish into girl fish? An emerging environmental challenge for livestock producers. In *Proceedings of the Virginia State Feed Association Conference*, Roanoke, VA February 19, 2010, pp 83-89.

327. Guest, J. S., Love, N. G., Lamp, J., Ellis, M. W., Naha, S., and Puri, I. K. 2008. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Podium presentation. The Borchardt Conference, Ann Arbor, MI, Feb 27, 2008.

328. Khunjar, W. O., Love, N. G., Skotnicka-Pitak, J., Aga, D. S., Yi, T., and Harper, W. F. Jr. 2008. Biotransformation of pharmaceuticals and personal care products during nitrification: the role of ammonia oxidizing bacteria. Podium presentation. The Borchardt Conference, Ann Arbor, MI, Feb. 27, 2008.

329. Aruguete, D.M., Guest, J.S., Shrout, J. D., Love, N. G., Hochella, Jr., M. F. 2008. Bacteria quantum dot interactions and their environmental implications. Poster presentation. *Environmental Nanoparticles: Science, Ethics and Policy*, University of Delaware, Newark, DE, November 10, 2008.

330. Skotnicka-Pitak, J., Aga, D. S., Khunjar, W. O., Love, N. G., Yi, T., Harper Jr., W. F. 2007. Characterization of EE2 metabolite in bioreactors with pure cultures of *Nitrosomonas europaea* and in activated sludge using LC/ITMS. *56th ASMS Conference on Mass Spectrometry*.

331. Aruguete, D.M., J.S. Guest, J.D. Shrout, N.G. Love, and M.F. Hochella, Jr. 2007. Bacterial physiology and viability in the presence of quantum dot nanoparticles: towards an environmental perspective. American Geophysical Union Fall Meeting, San Francisco, California, December 10, 2007.

332. Pinto, A.J., Hardin, S.C., Guest, J.S., Love, N.G., Shaw, A. 2007. Comparing toxic shock event response protocols for wastewater treatment plants. Podium Presentation. Virginia American Water Works Association and Virginia Water Environment Association Joint Annual Meeting (WaterJAM), Hampton, VA, September 16-20, 2007.

333. Guest, J.S., A.J. Pinto, N.G. Love, and A. Shaw. Corrective action strategies for enhanced biological phosphorus removal wastewater treatment plants during short-term and prolonged toxic shock events. Podium Presentation. Virginia American Water Works Association and Virginia Water Environment Association Water Joint Annual Meeting 2007 (Water JAM), Hampton, Virginia, September 16-20, 2007. *Winner 2007 Best Student Paper Award.*

334. Kelly, R. T. and Love, N. G. 2007. Detecting nitrification problems: A comparison of methods. Podium presentation at the Pacific Northwest Clean Water Association Annual Conference, September 9-12, 2007, Vancouver, British Columbia.

335. Guest, J. S., Naha, S., Frey, S. Sole, J.D., Love, N.G., Puri, I.K., Ellis, M. W. 2007. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation. *First Place Student Poster – Environmental Technologies Category.*

336. Zhao, Z., Knowlton, K. F., Love, N. G. 2007. Can we remove estrogens in dairy manure during storage? Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation. *First Place Student Poster - Natural Environment Category.*

337. Pinto, A.J., Guest, J.S., Love, N.G., Shaw, A. 2007. Process controls at nutrient removal wastewater treatment plants during toxic shock events. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

338. Khunjar, W. O., Baik, S., Celiz, D., Yi, T., Henriques, I. D. S., Love, N. G., Aga, D. S., and Harper Jr., W. F. 2007. Evaluation of the fate of environmentally relevant micropollutants. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

339. Gilmore, K. R., Love, N. G. and Smets, B. F. 2007. Nitritation and autotrophic nitrogen removal in a hollow-fiber membrane-aerated biofilm reactor. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

340. Ikuma, K., Henriques, I. D. S., Rzigalinski, B. A., Love, B. J., and Love, N. G. 2007. Predicting the public health impact of oxidative toxins using a bacterial glutathione-gated potassium efflux stress response biosensor. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

341. Fraga-Muller, J., Ikuma, K., Stevens, A. M., and Love, N. G. 2007. Organic contaminants cause increased antibiotic resistance in *Pseudomonas aeruginosa.* Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

342. Gungor, K., Arogo Ogejo, J. Knowlton, K. F., Love, N. G. 2007. Biological phosphorus removal to produce "Designer Manures" for dairy farms. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

343. Arogo Ogejo, J., Gungor, K., Wen, Z., Hu, Z., Yao, T. Love, N. G., Knowlton, K. F. 2007. Recovery of phosphorus from dairy manure as struvite. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

344. DeBusk, J., Arogo Ogejo, J., Love, N. G., Knowlton, K. F. 2007. Adjusting N:P ratios in liquid dairy manure through nitrification and chemical phosphorus removal to match crop fertilizer requirements. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

345. Beck, J., Gilmore, K. R., Knowlton, K. F., Arogo Ogejo, J., Love, N. G. 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

346. Muller, J. F., Stevens, A. M. and Love, N. G. 2006. Organic contaminants cause increased antibiotic resistance in Pseudomonas aeruginosa. Poster presentation. Environmental Science – Water Gordon Research Conference, June 25-30, 2006, Holderness School, Plymouth, New Hampshire.

347. Zhao, Z., Knowlton, K. F., Love, N. G., and Fang, Y. 2006. Estrogen content of treated dairy manure. Virginia Water Science and Technology Symposium, November 1-3, 2006, Blacksburg, VA. *2006 Best Student Presentation Award.*

348. Capuno, R. E., Love, N. G. and Smets, B. F. 2006. Mathematical modeling of nitrogen removal via a coupled nitritation:anaerobic ammonia oxidation biofilm in a hollow fiber membrane bioreactor. Virginia Water Environment Association Annual Meeting, May 1-3, 2006, Roanoke, VA. *2006 Best Student Paper Award.*

349. Muftugil, M., Knowlton, K. F., and Love, N. G. 2005. Using enhanced biological phosphorus removal to minimize nutrient delivery from dairy farms to receiving waters. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.

350. Khunjar, W., Sweetman, P., Knowlton, K. F., Smets, B. F. and Love, N. G. 2005. Treatment of anaerobically stabilized dairy waste with an oxygen limited autotrophic nitrification plus denitrification (OLAND) fixed film reactor: startup and maintenance issues. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.

351. Haley, M., Grandstaff, J. and Love, N. G. 2005. Solving a mystery: a case study using root cause analysis to decipher a toxic upset event. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.

352. Muftugil, M. B., Love, N. G. and Knowlton, K. F. 2005. Using Enhanced Biological Phosphorus Removal (EBPR) to Alter the Nitrogen:Phosphorus Ratio of Dairy Manure and to Minimize Nutrient Delivery to Receiving Waters, Water Environment Federation Innovative Uses of Agricultural Wastes Conference, Chicago, IL, July 1-3, 2005.

353. Xu, Y., Linares, K., Meehan, K. A., Love, N. G. and Love, B. J. 2004. pH dependent optical properties of surface modified gold nanoparticles using bovine serum albumin coating. NSTI Nanotechnology Conference and Trade Show, Boston, MA, March 2004.

354. Kelly II, R. T. and Love, N. G. 2004. Investigating the role of oxidative stress mechanisms in chemically inhibited nitrifiers. Poster presentation. Environmental Science – Water Gordon Research Conference, June 27-July 1, 2004, Holderness School, Plymouth, New Hampshire.

355. Sandu, S., Hallerman, E. and Love, N. G. 2004. Ozone treatability and pilot-scale treatment for aquaculture effluent recovery and reuse. Presented at the International Conference on Successes and Failures in Commercial Recirculating Aquaculture, Roanoke, VA, July 2004.

356. Fleming, D., Linares, K., Xu, Y., Love, B., Love, N. and Meehan, K. 2004. Use of immobilized bacterial elements in an environmental biosensor. The Eighth World Conference on Biosensors, Granada, Spain. May 24-26, 2004.

357. Chakraborty, I., Rhodes, R.R., Stevens, A.M., and Love, N. G. 2004. Monitoring the adaptation of an enriched bacterial consortium in response to chemical stressors using DGGE and sequencing. Poster Presentation, 10th International Symposium on Microbial Ecology, Cancun, Mexico, August 22-27, 2004.

358. Kelly, R. T. and Love, N. G. Mechanisms of chemical inhibition of nitrification in wastewater treatment. Virginia Water Environment Association, Roanoke, VA, May 2003. *2003 Best Student Paper Award*.

359. Leung, S.M., Little, J. C., Holst, T., and Love, N. G. 2003. Oxygen transfer and consumption in a biological aerated filter. Virginia Water Environment Association, Roanoke, VA, May 2003.

360. Dauphinais, J. L. and Love, N. G. 2003. Determination of toxic inhibition potential from industrial dischargers to a POTW using a respirometric assay. Virginia Water Environment Association, Roanoke, VA, May 2003.

361. Bott, C.B., Henriques, I. D. S., Kelly, R. T., Dauphinais, J. L., and Love, N. G. 2002. WERF - Upset early warning systems for biological wastewater treatment. *Proceedings of the Water Environment Federation 8th Annual Industrial Wastes Technical and Regulatory Conference*, Atlantic City, New Jersey, August 11-14, 2002.

362. Holbrook, R.D., Novak, J. T. and Love, N. G. 2002. The role of particulate and colloidal material in the fate and transport of endocrine disrupting compounds. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.

363. Leung, S., Holst, T., Love, N. G. and Little, J. C. 2002. A fundamental investigation of oxygen utilization in a biological aerated filter. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.

364. Kelly, R. T. II, Henriques, I. D. S., Dauphinais, J. and Love, N. G. 2002. Evaluation of source-effect relationships for activated sludge response to shock loads of disruptive chemical toxins. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.

365. Wimmer, R. F. and Love, N. G. 2002. Activated sludge deflocculation in response to chlorine addition: the potassium connection. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.

366. Love, N. G. and Bott, C. B. 2002. In search of physiological mechanisms linked to wastewater treatment malfunctions caused by toxic chemicals. Oral presentation. Gordon Research Conference on Microbial Stress Responses. July 14-19, Salve Regina University, Newport, Rhode Island.

367. Brazil, B. L. and Love, N. G. 2002. Design and implementation of a pilot-scale nitrogen removal system employing fermentation of endogenous carbon sources to treat an aquaculture waste stream. Aquaculture America 2002, Jan. 27-30, San Diego, CA.

368. Wimmer, R. F. and Love, N. G. 2001. Potassium efflux as a bacterial defense mechanism against chlorinated disinfectants. Virginia Water Environment Association Annual Meeting, May 2001. Williamsburg, VA. *2001 Best Student Research Paper Award*.

369. Brazil, B. L. and Love, N. G. 2001. Design and implementation of a pilot-scale nitrogen removal system employing fermentation and endogenous carbon sources to treat an aquaculture waste stream. Virginia Water Environment Association Annual Meeting, May 2001. Williamsburg, VA.

370. Bott, C. B. and Love, N. G. 2000. Mechanistic evaluation of activated sludge deflocculation in response to shock loads of electrophilic xenobiotic chemicals. Virginia Water Environment Association Annual Meeting, May 2000, Roanoke, VA. *2000 Best Student Research Paper Award*.

371. Ma, G. and Love, N. G. 1999. BTX biodegradation under anoxic, microaerobic, and aerobic conditions in activated sludge sequencing batch reactors. Podium presentation. Virginia Water Environment Association Annual Meeting, May 1999, Tyson's Corner, VA. *1999 Best Student Research Paper Award.*

372. Love, N.G., Delahaye, A., Gilmore, K. R., Holst, T., Husovitz, K. J., Little, J. C., and Novak, J. T. 1999. Performance of a two-stage biological aerated filter system treating domestic wastewater for BOD and ammonia removal – pilot-scale results. Podium presentation. Virginia Water Environment Association Annual Meeting, May 1999, Tyson's Corner, VA.

373. Love, N. G. 1999. The Applicability of the Microbial Stress Response as an Indicator for In Situ and Up-Stream Wastewater Treatment Monitoring. Invited podium presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA.

374. Ma, G., Bilyk, K. and Love, N. G. 1999 Nitrite accumulation and inhibition during denitrification. Poster presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA. *2nd Place Best Student Research Award*.

375. Phipps, S., Love, N. G., and Novak, J. T. 1999 Dewatering of oily wastewater sludge. Poster presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA. *3rd Place Best Student Research Award*.

376. Love, N .G., Duncan, A. J., and Bott, C. B. 1998. Detection of Hsp60 in activated sludge following heat shock and exposure to xenobiotic compounds. Poster presentation. Gordon Research Conference on the Microbial Stress Response, New England College, Henniker, NH.

377. McInnis, J., Love, N. G., and Novak, J. T. 1998. Pilot Study of Aerobic Treatment of Waste Oily Sludge. Podium presentation. Virginia Water Environment Association Annual Meeting, Norfolk, Virginia.

378. Fallon, A., Novak, J. T., and Love, N. G. 1998. Biological Treatment of Oily Sludge: Laboratory Studies. Podium presentation. Virginia Water Environment Association Annual Meeting, Norfolk, Virginia. *1998 Best Student Research Paper Award.*

379. Phillips, J., and Love, N. G. 1997. Denitrification of recirculating aquaculture system waters using an upflow fixed film bioreactor. Podium presentation. Virginia Water Environment Association Annual Meeting, Roanoke, Virginia. *1997 Best Student Research Paper Award.*

380. Perri, K. L., and Love, N. G. 1997. The effectiveness of sequential treatment strategies on the treatability of a high strength industrial wastewater. Podium presentation. Virginia Water Environment Association Annual Meeting, Roanoke, Virginia.

381. Love, N. G. and Grady, C. P. L. Jr. 1994. The impact of second substrates on the expression of a TOL plasmid. Poster presentation. Gordon Research Conference on Environmental Sciences: Water, New Hampton, New Hampshire.

382. Hegan (Love), N. G. and Pfeffer, J. T. 1987. Using oxidation-reduction potential as a monitoring device for biological phosphorus removal systems. Podium presentation. Texas Water Pollution Control Association Annual Meeting, Corpus Christi, Texas.

INVITED SEMINARS AND PRESENTATIONS

1. Invited speaker: A Field Study of Microbial Changes Across Activated Carbon Block Point of Use Filters Deployed During the Flint Water Crisis. University of California-Davis. May 22, 2018.
2. AEESP/WEF Master Lecture: An Academic Perspective on Rethinking Urban Water Infrastructure Across the Classroom, Lab and Field. WEFTEC 2017, Chicago IL. October 2, 2017.
3. Keynote speaker. "Water Infrastructure in Shrinking and Expanding Cities: The Impact on Water Quality and Public Health". Integrity of Creation Conference, The Global Water Crisis, Duquesne University. September 27-28, 2017, Pittsburgh, PA.
4. Invited speaker: Microbiome at the Global Tap: Understanding Microbial Colonization of Point-of-Use Drinking Water Filters. 14th Annual USEPA Drinking Water Workshop: Small Systems Challenges and Solutions, Cincinnati, OH, August 22-24, 2017.
5. Distinguished Lecture. Borchardt and Glysson Collegiate Professorship Induction. "At the interplay of water and health." Borchardt Conference, University of Michigan, February 22, 2017.
6. Distinguished Lecture. "The interplay between chemicals and microbiomes: an environmental biotechnology perspective." Wayne State "Water at Wayne" Lecture Series, Feb 1, 2017.
7. Invited speaker. "Microbiome at the Global Tap: Understanding microbial colonization of point-of-use drinking water filters." Marquette University, January 25, 2017

8. Invited speaker. “A Balancing Act: Achieving Nutrient Recovery via Urine-Derived Fertilizers while Managing Emerging Contaminants.” University of Buffalo, November 11, 2016.
9. Distinguished Lecture. “At the Confluence: Nutrients, Trace Chemicals and Sustainability in the Urban Water Sector.” Cornell University, October 24, 2016.
10. AEESP Distinguished Lecturer. 2015-2016 academic year. Presented one of two talks: “The Interplay Between Chemicals and Microbiomes: An Environmental Biotechnology Perspective”, or “At the Confluence: Nutrients, Trace Chemicals and Sustainability in the Urban Water Sector.” Eighteen venues were selected among 27 applicants. Most venues involve more than one host school. Host schools include: Ohio State; Michigan Tech and University of Minnesota-Duluth; Lehigh University and Lafayette College; Penn State University and St. Francis University; University of South Florida, University of Central Florida and University of Florida; University of Oklahoma; Technische Universitat Munchen and ETH Zurich; University of Pittsburgh and Carnegie Mellon University; Arizona State University; Colorado School of Mines and University of Colorado-Boulder; University of Tennessee; University of Cincinnati, University of Dayton and US EPA; University of Toronto; University of Maryland, Johns Hopkins University and Howard University; Virginia Tech; University of Vermont, Clarkson University, St. Michaels University, Norwich University and McGill University; University of Massachusetts, Yale University, University of Connecticut, Worcester Polytechnic Institute and Rensselaer Polytechnic Institute; Northwestern University and University of Illinois Chicago.
11. Invited Lecture: A balancing act: Achieving nutrient recovery via urine-derived fertilizers while managing emerging contaminants. University of Southern California, Los Angeles, CA. February 24, 2016.
12. Invited Lecture: Chlorinated phenols: their influence on microbial colonization and antibiotic resistance. Technical University of Delft, The Netherlands, January 22, 2016.
13. Distinguished Lecture: Microbial responses to and health implications for trace organic chemicals in the environment: A story about chlorinated phenols. School of Environment, Tsinghua University, Beijing China, December 5, 2014.
14. Distinguished Lecture: Bringing next generation sequencing to case studies in environmental biotechnology. Chinese Microbial Ecology Society, by webcast to Beijing China, October 26, 2014.
15. Distinguished Lecture: Chlorinated Phenols in Water: Their Influence on Microbial Colonization and Responses to Antibiotics. EAWAG, Swiss Federal Institute of Aquatic Science and Technology, Duebendorf, Switzerland, Invited, November 9, 2014.
16. Invited Lecture: Effect of Chlorinated Phenols on Microbial Communities that Colonize Point-of-Use Drinking Water Filters. Department of Civil and Environmental Engineering, University of Glasgow, Scotland, March 14, 2014
17. Invited Lecture: The Evolution of Wastewater Management in the United States: Toward Sustainable Systems. Dept of Civil and Environmental Engineering, Addis Ababa Institute of Technology, Ethiopia. October 17, 2013.
18. Distinguished Lecture: Eminent Scholar Lecture Series. At the Confluence of Nutrients, Pharmaceuticals and Sustainability: Emerging Issues in Wastewater Management. University of South Florida College of Engineering. April 19, 2013.
19. Distinguished Lecture: Water Resources and Environmental Engineering Research Symposium. At the Confluence of Nutrients, Pharmaceuticals and Sustainability: Emerging Issues in Wastewater Management. North Carolina State University. March 15, 2013
20. Invited Lecture: From Under the End Table: Navigating Fears, Hopes and Aspirations in Life and Career. North Carolina State University Women in Engineering Lecture Series. March 14, 2013.
21. Invited Lecture: Michigan Water Environment Association Annual Process Seminar. At the Confluence of Nutrients, Pharmaceuticals and Sustainability, East Lansing, MI, November 7, 2012.
22. Invited Speaker: Chesapeake Bay Science and Technical Advisory Committee/Water Environment Research Foundation. Real World Sustainable Wastewater Practices Workshop, At the Intersection of

Nitrogen Transformation and Pharmaceuticals, Richmond, VA, May 16, 2012.

23. Keynote speaker: Virginia Water Environment Association Education Conference, At the Confluence of Nutrients, Pharmaceuticals and Sustainability: Emerging Issues in Wastewater Management, Richmond, VA, May 17, 2012.
24. Invited Speaker: Water & Wastewater Treatment BMP Forum, International Joint Commission, Wastewater Treatment Innovation: Current Research Focus, McGregor Memorial Conference Center, Wayne State University, Detroit MI, March 26, 2012.
25. Distinguished Lecture: A Brace Lecture. The Brace Center for Water Resources Management. McGill University, At the Confluence of Nutrients, Pharmaceuticals and Sustainability: Emerging Issues in Wastewater Management, Montreal, Canada. February 29, 2012.
26. Invited Speaker: At the Confluence of Nutrients, Trace Contaminants and Sustainability: Emerging Issues in Wastewater Management. AEESP-Leading Edge Research Session in honor of the 10th anniversary of the Paul L. Busch Award, WEFTEC, Oct 17, 2011.
27. Invited Speaker: 16th Annual Central States Water Environment Association Meeting. At the confluence of nutrients, pharmaceuticals and sustainability: emerging issues in managing wastewater. Madison WI, April 5, 2011.
28. Distinguished Lecture: University of Texas, Austin, Department of Civil and Environmental Engineering, At the confluence of nutrients, pharmaceuticals and sustainability: emerging issues in urban water systems, March 24, 2011.
29. Invited Lecture: From Under the End Table: Navigating Fears, Hopes and Aspirations in Life and Career. University of Wisconsin-Madison Women in Science and Engineering Leadership Institute (WISELI) Lecture Series, which seeks to learn about the background and experiences of women who have succeeded in engineering and environmental chemistry fields, particularly those who have risen to leadership roles in academia, March 15, 2011.
30. Invited Lecture: University of Colorado, Boulder, Department of Civil and Environmental Engineering. At the confluence of nutrients, pharmaceuticals and sustainability: emerging issues in managing wastewater, January 13, 2011.
31. Invited Lecture: Northeastern University, Department of Civil and Environmental Engineering. At the confluence of nutrients, pharmaceuticals and sustainability: emerging issues in managing wastewater, December 2, 2010.
32. Keynote Lecture: International Water Association Leading Edge Technology 2010 Conference, Phoenix, AZ, USA. The pursuit of sustainable water and wastewater systems: The role of wastewater as a renewable resource, June 3, 2010.
33. Invited Lecture: University of California – Riverside, Department of Chemical and Environmental Engineering. Toward understanding dynamic microbiological responses to chemical stress: chemical stressors and antibiotic resistance, May 6, 2010.
34. Distinguished Lecture: Ernest and Agnes Gloyna Distinguished Lecture in Environmental Engineering, Johns Hopkins University, Baltimore, MD. Chemical Stressors in the Environment – Past, Present and Future. April 13, 2010.
35. Keynote Lecture: Somerville College, University of Oxford, England. Effects of antibiotics on sewage treatment processes. Part of the Workshop on Pharmaceutical Usage During an Influenza Pandemic – Implications for Sewage Treatment Plant Function, March 3, 2009.
36. Invited Lecture: University of Notre Dame Department of Civil Engineering and Geological Sciences. The Influence of Microbial Ecology and Physiology in the Biotransformation of Pharmaceuticals in Wastewater, November 11, 2008.
37. Distinguished Lecture: University of Minnesota Department of Civil Engineering Warren Lecture. Biotransformation of pharmaceuticals by nitrifying and heterotrophic cultures: Investigating degradation patterns, metabolite formation and the influence of growth state. November 14, 2008.

38. Invited Lecture: International Symposium on Glutathione and Related Thiols in Microorganisms and Plants, Faculté de Pharmacie de Nancy, France/ Glutathione as an *in vivo* indicator of chemical stress in complex biological systems, August 26-29, 2008.

39. Keynote Lecture: American Chemical Society Annual Meeting, Environmental Chemistry Symposium, Philadelphia, PA. Biotransformation and Chlorination of Pharmaceuticals and Their Byproducts during Wastewater Treatment, August 20, 2008, Other co-authors include Wendell O. Khunjar, Komgrit Kotcharaksa, Peter Vikesland, Jolanta Skotnicka-Pitak, Diana Aga, Willie F. Harper Jr., Taewoo Yi.

40. Invited Lecture: Malcolm Pirnie, Inc. firm-wide seminar. Sustainable Water Systems – Acknowledging Wastewater as a Resource. May 2, 2008.

41. Invited Lecture: Research and Development Seminar Series, Metropolitan Water Reclamation District of Greater Chicago. Toward Understanding Dynamic Microbial Responses to Chemical Stress: Elucidating Biomarkers for Use in Upset Early Warning Systems, June 15, 2007.

42. Invited Lecture: Water Environment Research Foundation Nutrient Challenge Stakeholder Workshop, Baltimore, Maryland. Organic Nitrogen in Wastewater Effluents, March 7-8, 2007.

43. Invited Lecture: Department of Civil and Environmental Engineering, University of California, Los Angeles. Toward Understanding Dynamic Microbiological Responses to Chemical Stress: Elucidating Biomarkers and Ecological Impact, February 6, 2007.

44. Invited Lecture: Virginia Water Environment Association Education Seminar, 2010: A Nutrient Odyssey – A Timely Look for Options for Compliance. Nitrification Inhibition: An Overview of the Problem and How it Affects Nitrogen Removal, December 13, 2006.

45. Invited Lecture: Carnegie Mellon University, Department of Civil and Environmental Engineering. Toward Understanding Dynamic Microbiological Responses to Chemical Stress: Elucidating Biomarkers and Ecological Impact, November 3, 2006.

46. Invited Lecture: Workshop on The Future of Water Monitoring, Virginia Water Monitoring Council. Elucidating Biomarkers and Ecological Impacts of Chemical Stressors Informs Emerging Water Monitoring Technologies, October 12, 2006.

47. Invited Lecture: Center for Urban Environmental Research and Education, University of Maryland – Baltimore County. Stress-Induced Microbial Footprints as a Basis for Monitoring Complex Environmental Systems, March 31, 2006.

48. Invited Lecture: Virginia Department of Environmental Quality Permitting Workshop, Blacksburg, VA. Nitrogen Removal Technologies for Meeting Nitrogen Load Reductions in the Chesapeake Bay Watershed, August 30, 2005.

49. Workshop Coordinator and Presenter. Overview of WERF Research on Upset Early Warning Technologies for Wastewater Treatment Plants. WEFTEC workshop, Washington DC, October 30, 2005

50. Keynote Lecture: 4th International Water Association Activated Sludge Population Dynamics Specialist Conference, Gold Coast, Australia. Detecting Microbial Fingerprints and Their Role in Advancing Our Understanding of Activated Sludge Population Dynamics, July 2005. *(Also listed under "International Conference Presentations" above)*

51. Invited Lecture: EPA/WERF Water Sector Security Workshop, Eastern Section, Philadelphia, PA. Upset early warning systems for wastewater treatment plants: technology status and potential, May 10-12, 2005.

52. Invited Lecture: Vistas for Microbial Ecology and Environmental Biotechnology, Center for Environmental Biotechnology, The Biodesign Institutes, Arizona State University, Tempe, Arizona. Monitoring our environment: bridging the interface between biology, chemistry and technology. One of eight international experts invited to present my view of the future for environmental biotechnology/microbial ecology. Outcome was published in *Environmental Science and Technology* (see journal papers).

53. Invited Lecture: Department of Geography and Environmental Engineering, Johns Hopkins University. Understanding Stress and its Role in Defining Environmental Health, March 29, 2004
54. Invited Lecture: Pondering Stress and its Role in Environmental Monitoring. Half Day Seminar in honor of the retirement of C. P. Leslie Grady Jr., Clemson University, Clemson, South Carolina, February 20, 2004
55. Invited Lecture: School of Civil Engineering, Purdue University, West Lafayette, Indiana, A Proposed Strategy for Developing Sensing Technologies for Environmental Monitoring: The Role of Stress, November 2003
56. Invited Lecture: Chemistry Department, University of Maryland Department of Chemistry, College Park, MD. Molecular indicators of toxin-induced stress in wastewater treatment systems, March 15, 2002
57. Keynote Lecture. European Union COST meeting, *Biosensors in Wastewater*, Milan Italy. Status and potential for biosensors in wastewater treatment, June 2002.
58. Invited Lecture: Civil Engineering Department, University of Texas, Austin, TX. Molecular indicators of toxin-induced stress in wastewater treatment systems, April, 2002
59. Invited Lecture: Chemical Engineering Department, Yale University. Using molecular stress responses as indicators of system stress in biological wastewater treatment facilities, April 11, 2001
60. Protecting your biological processes using upset early warning systems. Water Environment Research Foundation Subscriber Regional Meeting, Washington, D.C., April 5, 2001
61. Invited Lecture: Department of Civil and Environmental Engineering, University of California, Davis. Using molecular stress responses as indicators of system stress in biological wastewater treatment facilities, February 7, 2000
62. Invited Lecture: Department of Environmental Sciences, Rutgers University, Cook College, New Brunswick, NJ. Using molecular stress responses as indicators of system stress in biological wastewater treatment facilities, November 12, 1999
63. Invited Lecture: Department of Civil Engineering, Tulane University, New Orleans. Use of the microbial stress response as an indicator of system stress in biological treatment, October 1999
64. Invited Lecture: Department of Chemical Engineering, University of Virginia. Microbial stress in biological treatment systems, November 1998