

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

Fellow, Water Environment Federation

Fellow, International Water Association

Fellow, Association of Environmental Engineering and Science Professors

University of Michigan

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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

Professor Department of Civil and Environmental Engineering, University of Michigan Co-PI, Environmental Biotechnology Laboratory, University of Michigan	2008-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
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

Environmental Biotechnology Laboratory, University of Michigan 2010 - present
 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

- Elected Fellow, Association of Environmental Engineering and Science Professors. 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
- Professional Engineer License, Environmental Engineering, State of Michigan, License No. 6201057483. May 2010
- 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 over 5 years; 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, I lead activities associated with graduate student and post-doctoral engagement toward the professoriate. July 2003 – June 2008
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ADVISING RESPONSIBILITIES

Currently serving as major advisor for 1 undergraduate research student, 1 M.S. student and 7 Ph.D. students. Also serving as co-advisor for 2 Ph.D. students at Addis Ababa University in Ethiopia. Previously advised 38 M.S. students, 13 Ph.D. students, 5 post-doctoral research associates, and 24 undergraduate research projects/theses.

NOTABLE NATIONAL RECOGNITIONS FOR MENTEES AS STUDENTS

- Andrea McFarland, National Science Foundation Graduate Research Fellowship Recipient 2015-2019
- 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 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
Environmental Engineering and Science Foundation Board of Directors 2012 - present
- **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 position; elected by board as Vice-President 2008-2009; President-Elect 2009-2010; President 2010-2011) 2007 – 2011
- **Environmental Protection Agency** 2010 - 2011
EPA Science Advisory Board, Drinking Water Subcommittee
- **International Water Association**, Member 1989 – present
Environmental Engineering Education specialists group, chair 2006 - present
effective 2014 1995 – present
Microbial Ecology in Water Engineering (formerly Activated Sludge Population Dynamics) Specialty Group 2005 - present
MEWE program committee 2012 - 2013
Chair, MEWE2013 conference, Ann Arbor, Michigan USA 2007 – 2009
Leading Edge Technology (LET) Program Committee 2001 – 2007
Instrumentation, Control and Automation Group 2005 – 2007
Organizing Committee, Nutrient Management 2007 Workshop 2005 – 2008
MEGA working group member 2009 – 2010
Biofilms 2010 Conference Program Committee
- 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) 2002 – 2007
planning phase participant, (b) Co-PI on environmental impacts to coastal margins planning grant and (c) Member, sensor sub-committee.
- 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 Subcommittee 2000 – 2003
 - Wastewater Security Project Subcommittee 2003 – 2004
 - Sensors for Security in WWT Systems Project Subcommittee 2005 – 2007
 - Paul L. Busch Award Selection Committee 2005 – 2011
 - Leaders Innovation Forum for Technology (LIFT) Steering Committee 2015 - current
- **Women in Engineering Leadership Institute (WELI) Strategic Planning Committee** 2004 – 2005

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)

MAJOR UNIVERSITY, COLLEGE AND DEPARTMENT SERVICE RESPONSIBILITIES

University of Michigan

- 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 2015-2016
- 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
- Civil and Environmental Engineering Strategic Plan Implementation Committee 2013-current
- Provost's Promotion and Tenure Committee 2013
- Mentoring Others Results in Excellence (MORE) Committee, Rackham 2012 - 2013

- Graduate School, Member and Chair
- 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 appointment 2005
- College of Engineering Dean's Search Committee 2005
- co-Coordinator, Via Academic Preparation Program for graduate student professional development, Via 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

RESEARCH EMPHASIS

My research focuses on methods and technologies to assess and advance environmental and human health. I use both biotechnology and systems analysis approaches that encompass experimental and modeling tools. I have distinct expertise in evaluating the fate of chemicals, pathogens and contaminants of emerging concern in water, the use of technologies to sense and remove these entities, approaches to recover useful products from constituents in water, and modeling skills that can be used in cooperation with experimental approaches to inform research directions and needs.

FUNDED PROJECTS

(Total Value: \$20.0 million; Share Value: \$6.1 million)

Research Support Received – External Programs

(Total Value: \$12.3 million; Share Value: \$4.5 million)

1. 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
2. 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 – 8/31/17
100% share
3. 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
4. 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
5. Love, N.G., L. Raskin, C. Bott, S. Skerlos and A. Salvesson. 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
6. 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
7. 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
8. 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
9. 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
10. 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
11. Love, N. G. Understanding Microaerobic Metabolism in a Sustainable World. Water Environment Research Foundation \$149,312
2/1/10–3/31/12
100% share
12. 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 \$2,000,000
9/1/09-8/31/13

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| Engineering of Microalgae Hydrothermal Processing. National Science Foundation (EFRI 0937992) | 2% share |
| 13. 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 |
| 14. 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 |
| 15. 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 |
| 16. 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 |
| 17. 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 |
| 18. 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 |
| 19. 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 |
| 20. 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 |
| 21. 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 |
| 22. 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 |
| 23. 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 |
| 24. 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 |
| 25. 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 |

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| 26. 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 |
| 27. 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 |
| 28. 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 |
| 29. 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 |
| 30. 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 |
| 31. 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 |
| 32. 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 |
| 33. 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 |
| 34. 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 |
| 35. 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 |
| 36. 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 |
| 37. 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 |
| 38. 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 |

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| 39. 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 |
| 40. 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 |
| 41. 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 |
| 42. 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 |
| 43. 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 |
| 44. 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 |
| 45. 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 |
| 46. 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 |
| 47. 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 |
| 48. 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 |
| 49. 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 |
| 50. 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 |
| 51. 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 |
| 52. 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 |

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| 53. 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 |
| 54. 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 |
| 55. 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 |
| 56. 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: \$3.9 million Share Value: \$409,900)

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| 57. 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. | \$15,000
2015-2017
33% share |
| 58. 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 |
| 59. 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 |
| 60. 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 |
| 61. 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 |
| 62. 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 |
| 63. 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 |
| 64. 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 |

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| 65. 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 |
| 66. 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 |
| 67. 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 |
| 68. 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 |
| 69. 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 |
| 70. Stevens, A. M. and Love, N. G. Development of a <i>lux</i> reporter for the anaerobic human pathogen <i>Bacteroides</i> . Virginia Tech Optical Sciences and Engineering Research Center. | \$50,000
7/1/00–6/30/01
10% share |
| 71. 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 |
| 72. 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 |
| 73. 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 |
| 74. 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 |
| 75. 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 |
| 76. 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)

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|---|--|
| 77. 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 |
| 78. 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 |
| 79. 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 |
| 80. 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 |
| 81. Love, N. G. Making the Connection Program, Women in Engineering Programs and Advocates Network. | \$5,000
12/1/1999–
1/31/2003
100% share |
| 82. 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

Undergraduate Research Projects with Report or Thesis

1. Ishi Keenum. 2015 – 2016. Plasma treatment of source-separated urine for fertilizer development.
2. Weitian Wang. 2010-2011. Microaerobic Removal of Pharmaceuticals from Wastewater
3. Celine Saucier. 2010-2011. Nitrate Removal to Enable the Effluent Organic Nitrogen Bioassay
4. Bryan VanDuinen. 2009. Life Cycle Assessment of Various Disposal Methods for Unused Pharmaceuticals.
5. Shayan Sengupta. 2009: Assessing the Toxicity of Pharmaceuticals at Doses Expected from Secondary Infections Experienced During a Pandemic.
6. Genevieve Ho. 2008-2009: First project - Assessing a Thin-Film pH Biosensor. Second project – Abiotic Ammonia release from Effluent Organic Nitrogen Along Salinity Gradients.
7. Brian Harris. 2007: Assessing Oxidative Stress Response Function of Alginate-Immobilized Bacteria
8. Zachary Frye. 2006. Assessing the Feasibility of Nanostructure-Enhanced Nitrifying Microbial Fuel Cells
9. Brian Segal. 2006-2007. Evaluation of Ammonia Oxidizing Bacterial Biofilms.
10. Stephanie Harris. 2005-2006. Development of a Microfluidic Immunomagnetic Separation Biosensor for Detecting Bacterial Pathogens.
11. Beth McConnell. 2003-2004. The Affect of Physiology on Bacterial Responses to Oxidative Uncouplers
12. Suzanne Ayers. 2002. VIA Undergraduate Scholar: Evaluating the Impact of Toxic Shocks on Wastewater Treatment Performance
13. Felicia Glapion. 2001-2002. NEM-Induced Potassium Efflux in *Pseudomonas aeruginosa*
14. Monica Mace. 2000-2001. GE Scholarship: Denitrification of Aquaculture Wastewaters
15. Denise Gillam. 2000. Water Center Undergraduate Fellowship: The Impact of Potassium Efflux on Biofilm Treatment Systems Exposed to Electrophilic Toxins
16. Mike Gatza. 1999-2000. Using Two-Dimensional Gel Electrophoresis to Characterize Stress Proteins (Co-advised with Dr. Ann Stevens)
17. Bethany McRae. 1999-2000. NSF REU: Induction of the Glutathione-Gated Potassium Efflux System in *Sphingomonas capsulata* Exposed to HOCl
18. Jennifer Abrajano. 1999-2000. NSF REU: Assessing the Metabolism of Xenobiotic Compounds by Microaerobically-Grown Magnetotactic Bacteria
19. Scott Phipps. 1998-1999. Dewatering of Oily Wastewater Sludges. (Co-advised with Dr. John Novak)
20. Katya Bilyk. 1998-1999. NSF REU: Nitrite Inhibition and Toluene Degradation Under Denitrifying Conditions
21. Julie Wheeler. 1997-1998. NSF REU: Impact of Xenobiotic Stressors on Activated Sludge System Performance
22. Mary Rust. 1996-1997. Water Center Undergraduate Fellowship and NSF REU: Development and Isolation of Acetaldehyde Oxime and Methyleneethyl Ketoxime Degrading Cultures
23. Elliott Wheeler. 1995-1996. The Role of Various Cations in Settling and Dewatering of Biological Wastewater Treatment Sludges
24. Jon Treadway. 1995. Determination of Proteins in Activated Sludge Using Commercial Assays

25. 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. Samayyah Williams. 2014-current. Modeling, understanding and assessing technologies for the Detroit Water and Sewerage Department (DWSD) Wastewater Treatment Plant.
2. Nigel Beaton. 2014-2015. Low energy-demanding nitrogen removal from anaerobic effluents using biofilm technologies.
3. Anton Dapcic. 2013 – 2014. A performance evaluation of the WASAC™ energy recovery process.
4. Angelica Perez De La Rosa. 2010-2013. The impact of chlorinated phenols on the microbial ecology of point-of-use drinking water filters.
5. C. Davis Powell. 2011-2014. Evaluating the Environmental Impacts of Urine Source Separation.
6. Chris Moline. 2010-2011. The Fate of Pharmaceuticals in Microaerobic Biological Treatment Processes.
7. Alexi Ernstoff. 2009 – 2011. The Impact of Culturing Buffer on the Ability of *Nitrosomonas europaea* to Biotransform 17 α -Ethinylestradiol.
8. Sam Hardin. 2006-2011. The Effectiveness of Corrective Action Strategies on Chemically Stressed Biological Wastewater Treatment Systems. Current affiliation – environmental engineering consulting.
9. Romeo Capuno. 2005-2007. Modeling Anaerobic Ammonia Oxidizing Biofilms. Current affiliation –environmental engineering consulting.
10. Jason Beck. 2005-2007. Evaluating Deammonification Processes to Achieve Nitrogen Removal from Dairy Waste. Current affiliation – environmental engineering consulting.
11. Jeremy Guest. 2005-2007. Laboratory Testing of Process Controls for the Mitigation of a Toxic Shock Events at Enhanced Biological Phosphorus Removal Wastewater Treatment Plants. Current affiliation – Ph.D. student in environmental engineering.
12. 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 – Ph.D. student in environmental engineering
13. 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.
14. Anna Zaklikowski. 2004-2006. Evaluating the Effectiveness of Disinfection Strategies in the Inhibition and Inactivation of Ammonia Oxidizing Bacteria. Current affiliation – environmental engineering consulting.
15. 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.
16. 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.
17. 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.
18. Katharine Linares. 2002-2004. Development of a Biosensor for Detecting Toxic Electrophilic Chemicals in Waters. Current affiliation – environmental engineering consulting.
 19. Jennifer Dauphinais. 2002-2003. Effects of Toxic Chemicals on Biological Wastewater Treatment Processes. Current affiliation – US government-based environmental services.
 20. Rachelle Rhodes. 2002-2004. Subsurface Microbial Community Adaptation to Xenobiotic Influx. Current affiliation – environmental engineering consulting.
 21. Susanna Leung. 2001-2003. Oxygen Transfer Efficiency in a Biological Aerated Filter (co-advised with John Little). Current affiliation – environmental engineering consulting.
 22. 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.
 23. 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.
 24. David Whichard. 2000-2001. Nitrogen Removal from Dairy Manure Wastewater Using Sequencing Batch Reactors. Affiliation upon graduating – environmental services in industry.
 25. 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.
 26. 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.
 27. Scott Phipps. 1999-2001. Performance Evaluation and Yield Determination of a Full-Scale Biological Aerated Filter. Current affiliation – environmental engineering consulting.
 28. Brian Brazil. 1999-2001. Evaluation of an Effluent Treatment Strategy to Control Nitrogen from a Recirculating Aquaculture Facility. Current affiliation – environmental engineering consulting.
 29. 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.
 30. Arnaud Delahaye. 1997-1998. Distribution and Characteristics of Biomass in an Upflow Biological Aerated Filter. Affiliation upon graduation – Civil servant in France.
 31. 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.
 32. Kevin Gilmore. 1997-1999. Using Oligonucleotide Probes to Characterize Nitrification in a Two-Stage Pilot Plant Scale Biological Aerated Filter System. Affiliation after graduation – environmental engineering consulting (returned for Ph.D. – now an Assistant Professor).
 33. Jeff McGinnis. 1996-2003. Biodegradation and Dewatering of an Industrial Waste Oil. Current affiliation – environmental engineering consulting.
 34. Jennifer Phillips. 1996-1997. Denitrification or Recirculating Aquaculture System Waters Using an Upflow Biofilter and a Fermented Substrate. Current affiliation – environmental engineering consulting.
 35. 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.
36. 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.
 37. 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.
 38. Erika Lubkowitz (Bailey). 1995-1996. Biological Treatment Schemes for Preventing Oxime Inhibition of Nitrification. Current affiliation – environmental engineering consulting.
 39. 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. Sara Troutman. 2015-2020 (anticipated). Integrated urban water infrastructure systems modeling at the green and grey infrastructure interface. (co-advised with Branko Kerkez)
2. 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)
3. Andrea McFarland. 2015 – 2019 (anticipated). NSF Fellowship Recipient. Topic being developed.
4. Heather Goetsch. 2014 – 2018 (anticipated). Evaluating the benefits and risks of source separation as a nutrient management strategy. (Co-advised with Krista Wigginton)
5. Chia-Chen Wu. 2013 – 2017 (anticipated). The microbial ecology of disinfection byproduct-exposed point-of-use filters. (Co-advised with Terese Olson)
6. Jeseth Delgado-Vela. 2012 – 2017 (anticipated). NSF Fellowship Recipient. Evaluating Denitrifying Methanotrophs and their Role in Biotransforming Trace Organic Contaminants through Monooxygenase Enzyme Activity.
7. Lauren Stadler. 2010 – 2015 (anticipated). NSF Fellowship Recipient. Fate of trace contaminants in bacterial communities under low dissolved oxygen environments. *Future Affiliation (effective January 2016):* Assistant Professor, Rice University, Houston.
8. 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.
9. Jeremy S. Guest. 2007-2011. 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.
10. Matthew Hull. 2007-2011. NSF IGERT recipient (Virginia Tech). Effects of size, shape, and surface coating on the biological uptake and fate of gold nanoparticles. (Co-advised with Peter Vikesland). *Current Affiliation:* Associate Program Director of VT SuN (Center for Sustainable Nanotechnology), Virginia Tech Institute for Critical Technologies and Applied Sciences.
11. Ameet J. Pinto. 2005-2009. Upset Events at Wastewater Treatment Plants: Implications for Mitigative Strategy Development and Bioreactor Microbial Ecology. *Current Affiliation:* Lecturer (Assistant Professor), University of Glasgow; (effective January 1, Assistant Professor, Northeastern University, Boston).

12. 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.
13. Martin Musabyimana. 2005-2008. Deammonification Process Kinetics and Inhibition Evaluation. *Current Affiliation:* East Bay Municipal Utility District, San Francisco, CA.
14. Kevin R. Gilmore. 2005-2008. Treatment of High-Strength Nitrogen Wastewater With a Hollow-Fiber Membrane-Aerated Biofilm Reactor: A Comprehensive Evaluation. *Current Affiliation:* Assistant Professor, Bucknell University.
15. 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.
16. 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.
17. 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.
18. 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:* Engineer, Surface and Microanalysis Sciences Division, National Institute of Standards and Technology. *National Achievement:* 2010 PECASE (Presidential Early Career Award for Scientists and Engineers) recipient.
19. 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.
20. 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. Dr. Kelly Martin. 2013 – 2015. Innovative, Low Energy Nitrogen Removal from Anaerobic Effluents. *Current Affiliation:* Black and Veatch, Inc.
2. Dr. Sudeshna Ghosh. 2008-2012. Chemical stressor-induced antibiotic resistance. *Current Affiliation:* Research Associate, University of Iowa
3. Dr. Kartik Chandran. 2004-2005. Chemical stress mechanisms in nitrifying bacteria. *Current Affiliation:* Associate Professor, Columbia University. *National Achievement:* 2015 MacArthur Fellow.
4. 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.
5. 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. Muller, J. F., S. Ghosh, K. Ikuma, A. M. Stevens and N. G. Love*. In press. Chlorinated phenol-induced physiological antibiotic resistance in *Pseudomonas aeruginosa*. *FEMS Microbiology Letters*.
3. Delgado Vela, J., L. B. Stadler, K. J. Martin, L. Raskin, C. B. Bott and N. G. Love*. 2015. Prospects for biological nitrogen removal from anaerobic effluents during mainstream wastewater treatment. *Environmental Science and Technology Letters*, **2**(9):234-244. DOI: 10.1021/acs.estlett.5b00191.
4. Keen, O., N. G. Love, D. S. Aga and K. Linden*. In press. Biodegradability of iopromide products after UV/H₂O₂ advanced oxidation. *Chemosphere*.
5. Singh, R., Y. Lester, K. Linden, N. G. Love, G. Ekin Atilla-Gokcumen, D. S. Aga. In press. Application of metabolite profiling tools and time-of flight mass spectrometry in the identification of transformation products of iopromide and iopamidol during advanced oxidation. *Environmental Science and Technology*.
6. Stadler, Lauren B., Lijuan Su, Christopher J. Moline, Alexi S. Ernstoff, Diana S. Aga, and Nancy G. Love*. 2015. Effect of redox conditions on pharmaceutical loss during biological wastewater treatment using sequencing batch reactors. *Journal of Hazardous Materials*, **282**:106-115. DOI/10.1016/j.jhazmat.2014.08.002
7. Smith[†], A. L., L. B. Stadler[†], L. Cao, N. G. Love, L. Raskin, and S. J. Skerlos*. 2014. Navigating wastewater energy recovery strategies: A life cycle comparison of anaerobic membrane bioreactor and conventional treatment systems with anaerobic digestion. *Environmental Science and Technology*, **48**:5972-5981. DOI/10.1021/es5006169. [†]These authors contributed equally to this work.
8. A. K. Syed, S. Ghosh, N. G. Love, B. R. Boles*, 2014. Triclosan promotes *Staphylococcus aureus* nasal colonization, *mBio*, **5**(2):e01015-13. doi:10.1128/mBio.01015-13.
9. Orfield, Nolan D., G. A. Keoleian* and N. G. Love. 2014. A GIS-based national assessment of algal bio-oil production potential through flue gas and wastewater co-utilization. *Biomass and Bioenergy*, **63**:76-85.
10. Clouzot, L., J.-M. Choubert, F. Cloutier, R. Goel, N. G. Love, H. Melcer, C. Ort, D. Patureau, B. G. Plósz, M. Pomiès and P. A. Vanrolleghem*. 2013. Perspectives on modeling micropollutants in wastewater treatment plants. *Water Science and Technology*. **68**(2):448-461. DOI/10.2166/wst.2013.272.
11. Guest, J., M.C.M vanLoosdrecht, S. J. Skerlos and N.G. Love*. 2013. A lumped pathway metabolic model of organic carbon accumulation and mobilization by the alga *Chlamydomonas reinhardtii*. *Environmental Science and Technology*, **47**:3258-3267. DOI/10.1021/es304980y. .
12. Gilmore*, K.R., A. Terada, B. F. Smets, S. Lackner, J. L. Garland, and N. G. Love. 2013. Autotrophic nitrogen removal in a membrane-aerated biofilm reactor. *Environmental Engineering and Science*, **30**(1):38-45. DOI: 10.1089/ees.2012.0222.
13. Smith, A. L., L. B. Stadler, N. G. Love, S. Skerlos, and L. Raskin*. 2012. Perspectives on anaerobic membrane bioreactor treatment of domestic wastewater: A critical review. *Bioresource Technology*, **122** (Special Issue, SI):149-159. DOI: 10.1016/j.biortech.2012.04.055

14. Pinto, A.J. and N. G. Love*. 2012. Bioreactor function under perturbation scenarios is affected by interactions between bacteria and protozoa. *Environmental Science and Technology*, **46**:7558-7566. DOI: 10.1021/es301220f
15. Keen, O., N. G. Love, and K. G. Linden*. 2012. The role of effluent nitrate in contaminant oxidation during UV disinfection. *Water Research*, **46**(16):5224-5234. DOI:10.1016/j.watres.2012.06.052
16. Keen, O. S., S. Baik, K. G. Linden*, D. S. Aga and N. G. Love. 2012. Enhanced biodegradation of carbamazepine after UV/H₂O₂ advanced oxidation. *Environmental Science and Technology*, **46**:6222-6227. DOI: 10.1021/es300897u
17. S. M. Cook, B. J. VanDuijn, N. G. Love and S. J. Skerlos*. 2012. Life cycle comparison of environmental emissions from three disposal options for unused pharmaceuticals. *Environmental Science and Technology*, **46** (10):5535-5541. DOI: 10.1021/es203987b
18. R. Mesfioui, N. G. Love, D. A. Bronk, M. R. Mulholland, P. G. Hatcher*. 2012. Reactivity and chemical characterization of effluent organic nitrogen from wastewater treatment plants determined by Fourier transform ion cyclotron resonance mass spectrometry. *Water Research*, **46**:622-634. DOI:10.1016/j.watres.2011.11.022
19. Lamp†, J. L., J. S. Guest†, S. Naha, K. A. Radavich, N. G. Love*, M. W. Ellis* and I. K. Puri. 2011. Flame synthesis of carbon nanostructures on stainless steel anodes for use in microbial fuel cells. *Journal of Power Sources*, **196**(14):5829-5834. † These authors contributed equally to this work.
20. Khunjar, W. O., S. A. Mackintosh, J. Skotnicka-Pitak, S. Baik, D. S. Aga, N. G. Love*. 2011. Elucidating the relative roles of ammonia oxidizing and heterotrophic bacteria during the biotransformation of 17 α -ethinylestradiol and trimethoprim. *Environmental Science and Technology*, **45**(8):3605-3612.
21. Ghosh, S., C. M. Cremers, U. Jakob, and N. G. Love*. 2011. Chlorinated phenols control the expression of the multi-drug resistance efflux pump MexAB-OprM in *Pseudomonas aeruginosa* by activating NaIc. *Molecular Microbiology*, **79**:1547-1556.
22. Filippino*, K. C., M. R. Mulholland, P. W. Bernhardt, G. E. Boneillo, R. E. Morse, M. Semcheski, H. Marshall, N. G. Love, Q. Roberts and D. A. Bronk. 2011. Bioavailability of effluent-derived organic nitrogen along an estuarine salinity gradient. *Estuaries and Coasts*. **34**:269-280.
23. Zhao, Z., K. F. Knowlton*, N. G. Love, and J. A. Ogejo. 2011. Estrogen removal from dairy manure by pilot-scale treatment reactors. *Transactions of the American Society of Agricultural and Biological Engineers (ASABE)*. **53**(4):1295-1301.
24. Khunjar, W. O. and N. G. Love*. 2011. Sorption of carbamazepine, 17 α -ethinylestradiol, iopromide and trimethoprim to biomass involves interactions with exocellular polymeric substances. *Chemosphere*, **82**:917-922, doi:10.1016/j.chemosphere.2010.10.046.
25. Ghosh, S. and N. G. Love*. 2011. Molecular diversity of algae assemblages at wastewater treatment plants. *Bioresource Technology*, **102**: 3619-3622.
26. Bronk*, D. A., Q. Roberts, E. Canuel, P. Hatcher, R. Mesfioui, K. C. Filippino, M. R. Mulholland, and N. G. Love. 2010. Effluent organic nitrogen (EON): bioavailability, and photochemical and salinity release. *Environmental Science and Technology*, **44**(15):5830-5835.
27. H. A. Tucker, K. F. Knowlton*, M. T. Meyer, W. O. Khunjar, and N. G. Love. 2010. Effect of diet on fecal and urinary estrogenic activity, *Journal of Dairy Science*, **93**:2088-2094.
28. Arugete*, D. M., J. S. Guest, W. W. Yu, N. G. Love and M. F. Hochella, Jr. 2010. Interaction of CdSe/CdS core-shell quantum dots and *Pseudomonas aeruginosa*. *Environmental Chemistry*, **7**:28-35.

29. Guest, J. S.; S. J. Skerlos, J. L. Barnard, M. B. Beck, G. T. Daigger, H. Hilger, S. J. Jackson, K. Karvazy, L. Kelly, L. Macpherson, J. R. Mihelcic, A. Pramanik, L. Raskin, M. C. M. van Loosdrecht, F. Yeh, N. G. Love*. 2009. A new planning and design paradigm to achieve sustainable resource recovery from wastewater. *Environmental Science and Technology*, **43**(16):6126-6130.
30. Krometis*, L. A. H., T. A. Dillaha, N. G. Love, and S. Mostaghimi. 2009. Evaluation of a filtration/dispersion method for enumeration of particle-associated *Escherichia coli*. *Journal of Environmental Quality*, **38**(3):980-986.
31. Skotnicka-Pitak, J., W. O. Khunjar, N. G. Love*, and D. S. Aga*. 2009. Characterization of metabolites formed during the biotransformation of 17 β -ethinylestradiol by *Nitrosomonas europaea* in batch and continuous flow bioreactors. *Environmental Science and Technology*, **43**(10):3549 - 3555.
32. Gilmore, K. R., Little, J. C., Smets, B. F. and *Love, N. G. 2009. Oxygen Transfer in a flow-through hollow-fiber membrane biofilm reactor. *Journal of Environmental Engineering*, **135**(9):806-814.
33. Güngör, K., Müftügil, M. B., *Ogejo, J. A., Knowlton, K. F. and Love, N. G. 2009. Prefermentation of liquid dairy manure to support biological nutrient removal. *Bioresource Technology*, **100**:2124-2129.
34. Zhao, Z., Fang, Y., Love, N. G. and *Knowlton, K. F. 2009. Biochemical and biological assays of endocrine disrupting compounds in various manure matrices. *Chemosphere*, **74**:551-555.
35. *Zhang, Y., Love, N. G. and Edwards, M. 2009. Nitrification in drinking water systems. *Critical Reviews in Environmental Science and Technology*, **39**(3):153-208.
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107. 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.
108. 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.
109. 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.
110. 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.
111. 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.
112. 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.
113. 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.
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117. 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.
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119. 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.
120. 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*.
121. 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.
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124. 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.
125. 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.
126. 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.
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 129. Capuno, R. E., Love, N. G., and Smets, B. F. 2006. Mathematical modeling of start-up scenarios for nitrogen removal via a nitrification:anaerobic ammonia oxidation-coupled biofilm in a hollow fiber membrane bioreactor. International Water Association Biofilm Systems VI, Amsterdam, The Netherlands, September 24-27, 2006.
 130. 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.
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 132. 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.
 133. Love, N. G. 2002. Invited keynote speaker. Status and Potential for Biosensors in Wastewater Treatment. European Union COST meeting, *Biosensors in Wastewater*, Milan Italy.
 134. 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].
 135. 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].
 136. 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].
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138. Skeros, 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.

139. 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)
140. 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.

Other Refereed Conference Papers with Presentation (presenter in bold)

141. **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.
142. **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.
143. **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
144. **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
145. 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.
146. **Keen, O.**, S. Baik, K. Linden, D. Aga and N. G. Love. 2011. Degradation of carbamazepine during UV/H₂O₂ treatment of wastewater. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.
147. **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.
148. **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.
149. **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.
150. **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
151. **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
 152. **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.
 153. **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
 154. **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 17 α -Ethinylestradiol and Trimethoprim. Podium presentation, AEESP Special Session. 83rd Water Environment Federation Technical Exposition and Conference 2010, New Orleans, LA, October 3-6, 2010.
 155. **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.
 156. **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 17 α -Ethinylestradiol and Trimethoprim by Heterotrophic Bacteria. Podium Presentation. *82nd Annual Water Environment Federation Technical Exposition and Conference*, Orlando, Florida, October 10-14, 2009.
 157. **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.
 158. **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.
 159. 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.
 160. **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.
 161. **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.
162. 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.
 163. **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 17 α -ethinylestradiol during wastewater treatment. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
 164. **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.
 165. **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.
 166. **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.
 167. **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.
 168. **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.
 169. **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.
 170. **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.
 171. **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.
 172. **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.
173. **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.
 174. **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.
 175. **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.
 176. 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.
 177. 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 17 α -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.
 178. **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.
 179. **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)
 180. **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.
 181. **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.
 182. **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.
 183. **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.
 184. **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.
185. **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.
 186. **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.
 187. **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.
 188. **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.
 189. **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.
 190. **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.
 191. **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.
 192. **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.
 193. **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.
 194. **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.
 195. **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.
 196. **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.
 197. 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. *Proceedings of the International Association on Water Quality*

- Conference on Biofilm Systems*, New York, NY, October 17-21.
198. **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. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.
 199. **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. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.
 200. 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. *Proceedings of the Water Environment Federation 71st Annual Conference and Exposition*, Orlando, FL, October 3-7, 1998. **1**:203-214.
 201. 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. *Proceedings of the Second International Conference on Successes and Failures in Commercial Recirculating Aquaculture*, Roanoke, VA. pp 171-178.
 202. **Fettig, J. D.**, and Love, N. G. 1997. BTX degradation in activated sludge culture under denitrifying conditions. *Proceedings from the 2nd International Conference on Microorganisms in Activated Sludge and Biofilm Processes*, International Association on Water Quality, Berkeley, CA, pp 579-582.
 203. **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. *Proceedings of the Water Environment Federation 70th Annual Conference and Exposition*, Chicago, IL, October 18-22, 1997. **3(2)**:577-588.
 204. **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. *Proceedings of the 29th Annual Mid-Atlantic Industrial and Hazardous Waste Conference*, Roanoke, VA, pp 263-269.
 205. **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. *Proceedings of the Water Environment Federation 69th Annual Conference and Exposition*, **2**:211-222.

Peer-Reviewed Conference Abstracts with Presentation (presenter in bold)

206. **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. Salvesson, T. Rauch-Williams. 2015. Advancing energy neutral wastewater treatment: removing nitrogen and dissolved methane from dilute anaerobic effluents. AEEESP Biannual Conference, Yale University, June 14-16 (poster presentation).
207. **Stadler, L. B., J. Delgado Vela** and N. G. Love. 2015. Elucidating the relationship between wastewater treatment plant microbial diversity and pharmaceutical fate. AEEESP Biannual Conference, Yale University, June 14-16 (podium presentation), *winner of best student paper award*.
208. **Goetsch, H. R.**, Lahr, R. Mullen, A. Noe-Hays, D. Aqa, C. B. Bott, J. Jimenez, N. G. Love, K. Nace and K. Wigginton. 2015. Fate of organic contaminants in urine-derived fertilizers. AEEESP Biannual Conference, Yale University, June 14-16 (poster presentation).
209. **Lahr, R., H.**, Goetsch, A. Noe-Hays, D. Aqa, 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).
210. **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).
 211. **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)
 212. **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)
 213. **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)
 214. **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)
 215. **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)
 216. **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)
 217. **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., Salvesson, 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)
 218. **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)
 219. **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.
 220. **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.

221. **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.
222. **Moline, C. J., Stadler, L. B.**, Su, L., Ernstoff, A. S., Dapcic, A. D., Vela, J. D., Aqa, 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.
223. 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.
224. **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. Accepted. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.
225. **Smith, A.L.**, H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin. 2011. Psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. Accepted. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.
226. **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.
227. **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.
228. **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.
229. **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 17 α -ethinylestradiol. Poster Presentation. *Association of Environmental Engineering and Science Professors Conference*, July 26-29, 2009, Iowa City, IA.
230. **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.
231. **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.
232. **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 17 α -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.
233. **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.
 234. **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). In press.
 235. **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*.
 236. **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.
 237. **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.
 238. **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.
 239. **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.
 240. **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.
 241. **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 relevant micropollutants. Podium presentation. *American Society of Civil Engineers World Environmental & Water Resources Congress*, Tampa Bay, FL., May 15-19, 2007.
 242. **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.
 243. **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 17 α -ethinylestradiol. Poster presentation. *Nutrient Removal 2007: The State of the Art. Water Environment Federation Specialty Conference*, Baltimore, MD.
 244. **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.
 245. **Zalikowski, 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.

246. **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.
247. **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.
248. **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.
249. **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.
250. **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*.
251. **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.
252. **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.
253. **Fouratt, M.**, Smithers, C., Love, N. G., and Stevens, A. M. 2000. The characterization of nitrifying bioaugmentation cultures. *Abstracts of the 100th General Meeting of the American Society for Microbiology*, Los Angeles, CA. p. 491.
254. **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.
255. 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.
256. **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.
257. **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.
258. **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. *Abstracts of the 95th General Meeting of the American Society for Microbiology*, Washington, D.C.

259. 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. *Abstracts of the 93rd General Meeting of the American Society for Microbiology*, Atlanta, Georgia.

Conference Presentations (not listed elsewhere; presenter underlined)

260. 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)
261. 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)
262. 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*).
263. 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.
264. 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.
265. Stadler, L. B., Moline, C. J., Ernstoff, A. S., Su, L., Dapic, 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.
266. Love, N.G. Challenges in Predicting Micropollutant Fate in Biological Processes. WWMod2012 Workshop on Modelling Micropollutant Fate in Biological Processes, Mont-Sainte-Anne, Québec, Canada, Feb 26-28, 2012.
267. 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.
268. 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.
269. 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.
270. 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
271. 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

272. 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.
273. **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.
274. 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
275. **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.
276. 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.
277. **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.
278. **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.
279. **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.
280. 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.
281. **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.
282. **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*.
283. **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.
284. **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.

285. **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.*
286. **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.
287. **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.*
288. **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.*
289. **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.
290. **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.
291. **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.
292. **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.
293. 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.
294. **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.
295. **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.
296. **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.
297. **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.

298. **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.
299. **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*.
300. **Capuno, R. E.**, Love, N. G. and Smets, B. F. 2006. Mathematical modeling of nitrogen removal via a coupled nitrification: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*.
301. **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.
302. **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.
303. **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.
304. **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.
305. **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.
306. 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.
307. **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.
308. **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.
309. **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.
310. **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*.

311. **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.
312. **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.
313. **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.
314. **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.
315. **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.
316. **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.
317. **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.
318. **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.
319. **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.
320. **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*.
321. **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.
322. **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*.
323. **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*.

324. **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.
325. **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.
326. **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.*
327. **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.*
328. **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.
329. **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.
330. **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.*
331. **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.*
332. **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.
333. **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.
334. **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. 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.
2. 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.
3. Distinguished Lecture: Bringing next generation sequencing to case studies in environmental biotechnology. Chinese Microbial Ecology Society, by webcast to Beijing China, October 26, 2014.
4. 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.
5. 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
6. 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.
7. 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.
8. 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
9. 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.
10. Invited Lecture: Michigan Water Environment Association Annual Process Seminar. At the Confluence of Nutrients, Pharmaceuticals and Sustainability, East Lansing, MI, November 7, 2012.
11. 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.
12. 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.
 13. 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.
 14. 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.
 15. 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.
 16. 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.
 17. 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.
 18. 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.
 19. 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.
 20. 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.
 21. 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.
 22. 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.
 23. 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.
 24. 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.
 25. 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.
 26. 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.
27. 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.
 28. 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.
 29. Invited Lecture: Malcolm Pirnie, Inc. firm-wide seminar. Sustainable Water Systems – Acknowledging Wastewater as a Resource. May 2, 2008.
 30. 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.
 31. Invited Lecture: Water Environment Research Foundation Nutrient Challenge Stakeholder Workshop, Baltimore, Maryland. Organic Nitrogen in Wastewater Effluents, March 7-8, 2007.
 32. 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.
 33. 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.
 34. 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.
 35. 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.
 36. 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.
 37. 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.
 38. Workshop Coordinator and Presenter. Overview of WERF Research on Upset Early Warning Technologies for Wastewater Treatment Plants. WEFTEC workshop, Washington DC, October 30, 2005
 39. 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*)
 40. 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.
 41. 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).
42. Invited Lecture: Department of Geography and Environmental Engineering, Johns Hopkins University. Understanding Stress and its Role in Defining Environmental Health, March 29, 2004
 43. 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
 44. 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
 45. 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
 46. Keynote Lecture. European Union COST meeting, *Biosensors in Wastewater*, Milan Italy. Status and potential for biosensors in wastewater treatment, June 2002.
 47. Invited Lecture: Civil Engineering Department, University of Texas, Austin, TX. Molecular indicators of toxin-induced stress in wastewater treatment systems, April, 2002
 48. Invited Lecture: Chemical Engineering Department, Yale University. Using molecular stress responses as indicators of system stress in biological wastewater treatment facilities, April 11, 2001
 49. Protecting your biological processes using upset early warning systems. Water Environment Research Foundation Subscriber Regional Meeting, Washington, D.C., April 5, 2001
 50. 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
 51. 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
 52. 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
 53. Invited Lecture: Department of Chemical Engineering, University of Virginia. Microbial stress in biological treatment systems, November 1998