

Curriculum Vitae

1. Name

Niveen S. Ismail

2. Addresses

Office:

Picker Engineering Program
012 Ford Hall
100 Green Street
Northampton, MA 01063

Home:

53 Warner St
Florence, MA 01062
Tel: 201-563-8591

Tel: 413-585-3900

Fax: 413-585-7001

Email: nismail@smith.edu

3. Education

- PhD 2015 Civil and Environmental Engineering
Stanford University
Dissertation Title: Use of Bivalves for the Improvement of Water Quality:
Removal of Trace Organic Contaminants and Microbial Pollutants
- MS 2011 Civil and Environmental Engineering
Stanford University
- MS 2010 Biology
Temple University
Thesis Title: Bioaccumulation of Polychlorinated Biphenyls in Northern
Diamondback Terrapins
- BS 2003 Chemical Engineering, *magna cum laude*
New Jersey Institute of Technology, Albert Dorman Honors College

4. Awards and Honors

- 2014-2015 Stanford Haas Center Graduate Public Service Fellowship
2013 Stanford Community Engagement Grant
2011-2014 NSF Graduate Research Fellowship Recipient
2011-2014 Ford Foundation Pre-Doctoral Fellowship Recipient
2011 EPA STAR Graduate Fellowship Awardee
2010-2011 Dean's Doctoral Diversity (3D) Fellowship
2009 AAUW Career Development Grant
2009 Chelonian Society Turtle Research Grant
2009 Philadelphia Zoo Community Conservation Grant
2009 Women Divers Hall of Fame Marine Conservation Scholarship
2009 Society of Women Environmental Professionals Graduate Scholarship
2009 Temple University Nathaniel D. Apple Biology Graduate Scholarship
2008 Anchor Environmental Grant
2002-2003 Tau Beta Pi

2001-2003 McNair Research Scholar

2001-2003 Omega Chi Epsilon

5. Employment History

07/2015-present Smith College, Northampton, MA
Assistant Professor, Picker Engineering Program

06/2003-01/2008 ExxonMobil Research and Engineering Company, Various Locations
Research Engineer, Products and Process Research

6. Grants Received

National Science Foundation CBET

RUI: Zooplankton Mediated Removal of Microbial Pollutants in Natural Systems (PI)

Dates: 9/2018-8/2021

Total Amount: \$322,976

United States Geological Survey WRRRC National Grant Competition

Fate and Impacts of Silver Nanoparticles in Treatment Wetlands (PI)

Dates: 9/2018-8/2021

Total Amount: \$248,201

7. Publications

* indicates undergraduate co-author

Peer-reviewed articles

Boehm, A. B., N.S. Ismail, L.M. Sassoubre, E.A. Andruszkiewicz. "Oceans in peril: Grand challenges in applied water quality research for the 21st century" *Environmental Engineering Science*, 2017, 34(1), pp 3-15.

Ismail, N.S., J. Tommerdahl, A. B. Boehm, R. G. Luthy. "Reduction of *Escherichia coli* by bivalves in an impaired river impacted by agricultural land use" *Environmental Science and Technology*, 2016, 50(20), pp. 11025-11033.

Choi, Y., J.M. Thompson, D. Lin, Y. Cho, N.S. Ismail, C. Hsieh, R.G. Luthy. "Secondary environmental impacts of remedial alternatives for sediment contaminated with hydrophobic organic contaminants" *Journal of Hazardous Materials*, 2016, 304, pp 352-359.

Ismail, N.S., H. Dodd, L. M. Sassoubre, A. J. Horne, A. B. Boehm, R. G. Luthy. "Improvement of urban lake water quality by removal of *Escherichia coli* through the reintroduction of the bivalve *Anodonta californiensis*" *Environmental Science and Technology*, 2015, 49(3), pp 1664-1672.

Ismail, N.S., C. E. Müller, R. R. Morgan*, R. G. Luthy. "Uptake of contaminants of emerging concern by the bivalves *Anodonta californiensis* and *Corbicula fluminea*" *Environmental Science and Technology*, 2014, 48(16), pp 9211–9219.

Ismail, N., D. Velinsky, J. Ashley, R. Sanders. "Chorioallantoic membrane as a non-lethal sampling method for polychlorinated biphenyls analysis in the northern diamondback terrapin (*Malaclemys terrapin terrapin*)" *Chemistry and Ecology*, 2013, 29(5), pp 391–403.

Jasper, J., M. Nguyen, Z. Jones, N. Ismail, D. Sedlak, J. Sharpe, R.G. Luthy, A. Horne, K. Nelson.

(2013) “Unit process wetlands for treatment of municipal wastewater effluent” *Environmental Engineering Science*, 2013, 30(8), pp 421-436.

Patents

Umansky, B., A. Werner, A. Miller, T. Melli, C. Dean, N. Ismail, G. Brignac. “Gasoline Production by Olefin Polymerization.” Patent No 20070185359.

Hou, Z., J. McConnachie, T. Mizan, W. Borghard, W. Lewis, N. Ismail, A. Dandekar. “Hydroprocessing Methods for Bulk Group VII/VIB Metal Catalysts.” Patent No. 2008045550.

8. Works in Progress

* indicates undergraduate co-author

Ismail, N.S., M.C. Ollive*, S.B.L. Price*, B.M. Blokker*, R. H. Kohn*, T. R. Feeney*, R.M. Turner*. “Removal and Fate of *Escherichia coli* via filter feeding action of freshwater zooplankton.” Planned Submission, September 2018.

9. Concerts, Performances, and Exhibitions

None

10. Scholarly Lectures and Other Professional Presentations:

* indicates undergraduate co-author

+ indicates presenter

Conference Oral Presentations

Price, S.B.L.*+, M.C Ollive*, B.M. Blokker*, T.R. Feeney*, R.H. Kohn*, R. M. Turner*, N.S. Ismail. “Removal of *E. coli* via Zooplankton Filter Feeding in Natural Systems.” New England Graduate Student Water Symposium, 2016

Ismail, N.S.+ , M.C. Ollive*, S.B.L. Price*, B.M. Blokker*, R. H. Kohn*, T. R. Feeney*. “Zooplankton Mediated Removal of Microbial Pollutants in Natural Systems.” Association of Environmental Engineering and Science Professionals Conference, 2017

Ismail, N.S.+ , M.C. Ollive*, S.B.L. Price*, B.M. Blokker*, R. H. Kohn*, T. R. Feeney*. “Use of Zooplankton in Natural Treatment Systems: Reducing Microbial Pollutants from Stormwater Runoff and Wastewater.” Health Related Water Microbiology Symposium – International Water Federation, 2017

Ismail, N.+ , C. E. Mueller, R. R. Morgan, R. G. Luthy. “Use of Bivalves in Natural Systems for Removal of Contaminants of Emerging Concern.” American Chemical Society National Meeting, 2014

Ismail, N.+ , C.E. Mueller, R. R. Morgan, D. L. Sedlak, R. G. Luthy, “Unit Process Wetlands: Bivalve Biofilters for Removal of Trace Organic Contaminants.” Association of Environmental Engineering & Science Professors, 2013

Ismail, N.+ , C. E. Mueller, R. Morgan, R. G. Luthy. “Bivalve Application for Removal of Pollutants in Unit Process Wetlands.” Ford Foundation Annual Meeting, 2012

Ismail, N.+ , D. Velinsky, J. Ashley, R. Sanders. “Maternal Transfer of Polychlorinated Biphenyls in

the Diamondback Terrapin.” National Symposium on the Ecology, Status and Conservation of the Diamondback Terrapin, 2010

Ismail, N. ⁺, R. Sanders. “Non-lethal Techniques for Analysis of Polychlorinated Biphenyls.” Coastal Conservation Research Program Symposium. 2009

Conference Poster Presentations

Hart, C. ⁺, M.C. Ollive*, S.B.L. Price*, B.M. Blokker*, N.S. Ismail. “Zooplankton Use for *E. coli* Removal in Freshwater Systems.” New England Graduate Student Water Symposium, 2016

Ismail, N. ⁺, J. Tommerdahl, A. B. Boehm, R. G. Luthy. “*Escherichia coli* Reduction by Bivalves in an Impaired River Impacted by Agricultural Land Use.” Gordon Research Conference: Environmental Science, 2016

Ismail, N. ⁺, J. Tommerdahl, H. Dodd, L.M. Sassoubre, A.J. Horne, A. B. Boehm, R. G. Luthy. “Removal of *Escherichia coli* by Bivalves in Urban and Agricultural Runoff Impacted Waters.” Academic and Research Leadership Symposium, 2016

Ismail, N. ⁺, H. Dodd, L. M. Sassoubre, A. J. Horne, A. B. Boehm, R. G. Luthy. “Improvement of water quality via bivalve augmentation: a case study in Mountain Lake, CA.” Gordon Research Conference: Environmental Science, 2014

Ismail, N. ⁺, C. E. Mueller, R. Morgan, R. G. Luthy. “Bivalve Biofilters for Removal of Trace Organic Contaminants and Pathogens in Natural Treatment Systems.” Gordon Research Conference: Environmental Science, 2012

Ismail, N. ⁺, R. Morgan, R.G. Luthy. “Bioaccumulation of Triclosan and Triclocarban in Bivalves Utilized as Biofilters for Removal of Trace Contaminants in Reclaimed Wastewater.” Ford Foundation Annual Meeting, 2011

Ismail, N. ⁺, D. Velinsky, R. Sanders. “Bioaccumulation of Polychlorinated Biphenyls in the Diamondback Terrapin.” Society of Environmental Toxicology and Chemistry (Hudson Delaware Regional Chapter), 2010 (Third Place Award)

Ismail, N. ⁺, D. Velinsky, R. Sanders. “Bioaccumulation of Polychlorinated Biphenyls in the Diamondback Terrapin.” Atlantic Estuarine Research Society, 2010

Ismail, N. ⁺, B. Umanksy, G. Brignac. “MTBE Retrofit Technology.” Longer Range Research Meeting, 2007

Ismail, N. ⁺, W. Skawinski. “Use of UV- Spectroscopy to Determine Amiloride Binding Affinity to DNA Hexamers.” McNair Research Symposium, 2003 (First Place Award)

Ismail, N. ⁺, C. Venanzi. “Computational Studies of Methylphenidate: A Potential Treatment for Cocaine Abuse.” McNair Research Symposium, 2002 (First Place Award)

11. Scholarly Lectures and Other Professional Presentations

“Sustainable Water Solutions: Zooplankton to the Rescue.” Summer Science and Engineering Program, Smith College, June 2017

“Water, Energy, and Food: How do they relate?” Barstow’s Dairy Farm Monthly Lecture Series, Barstow Dairy Farm, June 2017

“Reduction of Microbial Pollutants Using Zooplankton.” Sigma Xi Seminar Series, Smith College, May 2017

“Teaching and Research at a Liberal Arts College.” RENUWIT Graduate Seminar Series, Virtual Seminar, Colorado School of Mines, February 2017

“Researching Vulnerability and the Environment at Smith College: Unpacking Disciplinary Approaches.” Workshop on the Environment and Vulnerability, Smith College, April 2016

“Use of Bivalves for Removal of Contaminants in Natural Systems.” Environmental Water and Resources Seminar, University of Massachusetts Amherst, February 2016

“Removal of *Escherichia coli* through Reintroduction of *Anodonta californiensis* at Mountain Lake”. Science Saturday hosted by Presidio Trust, July 2015

“The Original Mussel Beach: Reintroduction of the Native Freshwater Mussel *Anodonta californiensis*”. Science Saturday hosted by Presidio Trust, October 2013

“Diamondback Terrapin: Species Restoration and Bioaccumulation.” American Association of Women University Educational Foundation Reception, 2009

“Use of High Throughput Experimentation (HTE) to Increase Research Productivity.” Longer Range Research Meeting, 2008

12. Other Professional Activities

Reviewer

NSF CBET CAREER Panel (October 2016)
 Environmental Science and Technology
 Environmental Science and Technology Letters
 Environmental Engineering Science
 Marine Pollution Bulletin
 Marine Environmental Research
 PLOS One
 Science of the Total Environment

Professional Development

Teaching and Learning Seminar Series for Junior Faculty (S17)
 Academic Research and Leadership Network Participant (S16)
 Flint Lead Crisis Learning Circle (S16)
 Op-Ed Project Workshop Participant (Interterm16)

Other

Session Organizer and Moderator for Themed Session: Assessing Risks from Microbial Agents to Community Health. May 2017. Association of Environmental Engineering and Science Professionals Conference, Ann Arbor, MI.

13. Professional Memberships

American Chemical Society

Association of Environmental Engineering and Science Professionals

National Society of Black Engineers

14. Service Activities

Picker Engineering Program, Smith College

Academic Advisor (Liberal Arts and Major)

2016-2018 – 19 advisees

Faculty Advisor for Smith College chapter of Engineers Without Borders (2015-current)

Faculty Mentor for Association of Environmental Engineering and Science Professionals Student Video Competition (2017)

Search committee member, Administrative Assistant (2016)

Special Studies and Student Research, Smith College

Mycoremediation for Treatment of Agricultural Runoff

Ojaswi Aryal '20 (Spring 2018-current)

Tijana Cooley '20 (Spring 2018-current)

Removal of Microbial Pollutants Via Zooplankton Filter Feeding

Brittney Blokker '17 (Spring 2016-Summer 2017)

Mariah Ollive '18 (Spring 2016-Spring 2018)

Sarah Price '18 (Summer 2016-Spring 2018)

Rowan Turner '18 (Summer 2017-Spring 2018)

Tyler Feeney '19 (Summer 2017-current)

Ruby Kohn '19 (Summer 2017-current)

Vivian Nelson '20 (Spring 2018-current)

Emma Underdah '20 (Spring 2018-current)

Modeling of PCB Trophic Transfer

Maya Sleiman '18 (Fall 2017-Spring 2018)

Land Use Correlations to Water Quality Issues in Lake Elsinore CA

Emma Becker '18 (Spring 2017)

Reactor Design for Water Quality Improvement

Maya Sleiman '18 (Spring 2017)

Characterization of E. coli and Zooplankton in an Impacted Ephemeral Stream at MacLeish Field Station

Christine Hart '16 (Summer 2016)

Water Quality Issues in San Mateo Belize

Leen Hayek '16 (Spring 2016)

Thesis Committees

Co-advisor and committee member for Biology MS student at Hofstra University (2015-current)

Reader for Isabella Casini “Estimating Product Composition and Thermal Dynamics in a Continuous Feed Biomass Torrefier” (2017).

Other

First Lego League Expert Advisor: Hydrodynamics 2017-2018

Research mentor for two undergraduate Stanford students and two MS level Stanford students.
Research mentor for two high school students as part of the RISE program (Raising Interest in Science and Engineering) (2012-2015)
Science fair advisor for one of RISE students who won the county science fair and obtained the Junior Stockholm Water Award (2012-2014)
Co-Chair of Graduate Student Programming Board (2014-2015)
Co-Coordinator of New Graduate Student Orientation (2014)
President (2012-2013), Secretary (2011-2012) of the NSF sponsored Engineering Research Center ReNUWIt Student Leadership Council
Research advisor for six undergraduate interns at the Wetlands Institute (2010-2011)
Mentor in the Minority Access to Research program (Temple University) to help expose students to research in the STEM fields (2008-2010)
ExxonMobil Science Ambassador – Educational Outreach Volunteer Program (2003-2008)
Volunteer Ambassador at Philadelphia Zoo (2006-2009)

15. Teaching Record

Courses, Smith College

EGR 290: Engineering Thermodynamics (F15, F16, F17)
EGR 314: Contaminants in Aquatic Systems (F17)
EGR 110: Fundamental Principles of Engineering (S16, S17)
EGR 390: Contaminant Fate and Removal in Aquatic Systems (F16)
EGR 390: Water Quality Engineering (F15)

Other

Stanford Science Circle Instructor (S14)
Stanford University: Chemical & Physical Treatment Processes Teaching Assistant (W14)
East Palo Alto Phoenix Academy After School Program Instructor (S13)
Temple University: Human Biology Laboratory Instructor (2008-2010)