

*CURRICULUM VITAE*  
**Daniel Joseph Brabander**

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**PROFESSIONAL PREPARATION**

<b>Binghamton University</b>	Geological Sciences	B.S. with honors	1987
<b>Binghamton University</b>	Geological Sciences	M.A.	1990
<b>Brown University</b>	Geological Sciences	Ph.D.	1997
<b>Massachusetts Institute of Technology</b>	Biogeochemistry	Postdoctoral	1997–2001

**APPOINTMENTS**

2003– Present	<b>Wellesley College, Wellesley MA</b> Department of Geosciences Frost Professor of Environmental Sciences 2017-present <i>Professor 2014-Present, Chair 2016-, 2010-2013, Associate Professor 2007-2014, Assistant Professor 2003-2006</i> <i>Research topics:</i> Geohealth, fate and transport of pollutants in the built environment, urban environmental health, biogeochemistry, urban agriculture, and sustainability studies.
2006– 2016	<b>Harvard School of Public Health, Boston, MA</b> Department of Environmental Health: Exposure, Epidemiology and Risk Program <i>Visiting Scientist</i>
2001–2003	<b>University of Massachusetts-Boston, Boston MA</b> Department of Environmental, Coastal, and Ocean Sciences <i>Assistant Professor and Director of the Undergraduate Program in Environmental Studies</i>
1996–2001	<b>Massachusetts Institute of Technology, Cambridge MA</b> Department of Civil and Environmental Engineering, Parsons Laboratory <i>Postdoctoral Associate, Research topics:</i> fate and transport of heavy metals in watersheds
Fall 2000	<b>Massachusetts Institute of Technology, Cambridge MA</b> Department of Civil and Environmental Engineering, Parsons Laboratory <i>Lecturer, Aquatic Chemistry</i>
Spring 1996 Spring 1999	<b>Boston University, Boston MA</b> Department of Geological Sciences <i>Lecturer, Introduction to Geochemistry; Igneous and Metamorphic Petrology</i>
1990–1996	<b>Brown University, Providence RI</b> Department of Geological Sciences, Research Assistant <i>Research topics:</i> Diffusion kinetics of Sr isotopic exchange in amphiboles and application of results to a novel approach for modeling thermal histories of tectonic terrains
Spring & Summer 1990	<b>Salem State College, Salem MA</b> Department of Geological Sciences <i>Visiting Lecturer, Physical Geology</i>
1987–1989	<b>Binghamton University, Binghamton NY</b> Department of Geological Sciences and Environmental Studies <i>Research Assistant, Experimental geochemistry, phase equilibria, and determination of F-OH diffusion kinetics</i>

## RESEARCH GOALS

My research emphasizes transdisciplinary projects that foster collaboration among biologists, chemists, public health scientists, and environmental engineers and involves research experiences for undergraduates and not-for-profit partners. Current research focus is environmental-urban geochemistry, quantification of toxic metal exposure pathways in the built environment, and sustainability studies. Applications include fate and transport of contaminants in watersheds and urban settings, isotopic dating and mapping of anthropogenic materials within sediments and soils, geohealth, and sustainable urban agriculture.

## PUBLICATIONS (\* = undergraduate author)

Undergraduate first author (10) and undergraduate co-authors (11), citations (7/24/19) = 2986, h-index=17, i10 index = 22 (data source: Google scholar)

31. Smith J. P., **Brabander** D. J., Panek, L. A., Besancon J. R. (2019) Enrichment of potentially toxic elements in the fine fraction of soils from Iraq and Kuwait. *Journal of Soils and Sediments*.  
<https://doi.org/10.1007/s11368-019-02286-7>
30. Howard M. \*, Plotkin A. \*, McClure A. R. \* Klepac-Ceraj V., Griffith A., **Brabander** D., Jones K. (2018) Comfrey mulch enriches soil, but does not improve an indicator crop within one season. *International Journal of Plant and Soil* 22: (2) 1-9. doi : [10.9734/IJPSS/2018/40403](https://doi.org/10.9734/IJPSS/2018/40403)
29. Monecke K., McCarthy F. G., Hubeny B., Ebel J. E., **Brabander** D. J., Kielb S., Howey E. \*, Janigian G. \*, Pentesco J. (2018) The 1755 Cape Ann earthquake recorded in lake sediments of eastern New England: An interdisciplinary paleoseismic approach. *Seismological Research Letters*.  
<https://doi.org/10.1785/0220170220>
28. Sharp, R. M. \*, **Brabander**, D. J. (2017). Lead (Pb) bioaccessibility and mobility assessment of urban soils and composts: Fingerprinting sources and refining risks to support urban agriculture. *GeoHealth*, 1, 333–345. <https://doi.org/10.1002/2017GH000093>
27. Fitzstevens M.G. \*, Sharp, R. M. \*, **Brabander** D. J. (2017) Biogeochemical characterization of municipal compost to support urban agriculture and limit childhood lead exposure from resuspended urban soils. *Elem Sci Anth*. 2017; 5:51. doi [http://doi.org/10.1525/elementa.238](https://doi.org/10.1525/elementa.238)
26. Martello R., **Brabander** D., Gambill I. (2014) Paradigms, Predictions, and Joules: A Transdisciplinary, Project-Based Course Approach to Sustainability. *CUR Quarterly* (35) 1:20-26.
25. Schaidler L. A., Estes E. R. \*, Senn D. B., **Brabander** D. J., Shine J. P. (2014) Sources and fates of heavy metals in a mining-impacted stream: Temporal variability and the role of iron oxides. *Science of the Total Environment* 490: 456–466. <https://doi.org/10.1016/j.scitotenv.2014.04.126>
24. Handler, P. \*, **Brabander**, D. (2012) Increased Incidence and Altered Risk Demographics of Childhood Lead Poisoning: Predicting the Impacts of the CDC's 5 µg/dL Reference Value in Massachusetts (USA). *Int. J. Environ. Res. Public Health*, 9: 3934-3942. doi:10.3390/ijerph9113934
23. Lin C. G., Schaidler L. A., **Brabander** D. J., Woolf A. D. (2010) Pediatric lead exposure from imported Indian spices and religious ceremonial powders. *Pediatrics* 125: (4) e828-e835.  
doi: [10.1542/peds.2009-1396](https://doi.org/10.1542/peds.2009-1396)
22. Blute N. K., Jay J. A., Swartz C. H., **Brabander** D. J., Hemond H. F. (2009) Aqueous and solid phase arsenic speciation in the sediments of a contaminated wetland and riverbed. *Applied Geochemistry* 24: 346-358.
21. Heiger-Bernays W., Burns V., Diskin K., Pierotti D., Mercahnt-Borna K., McClean M., **Brabander** D., Hynes H. P. (2009) Characterization and low-cost solutions for soils contaminated by timbers in community gardens. *International Journal of Soil, Sediment and Water* 2: (3) Art. 5.
20. Smith J. P., Bullen T., **Brabander** D. J., Olsen C. R. (2009) Strontium isotope record of seasonal scale variations in sediment sources and accumulation in low-energy, subtidal areas of the lower Hudson River estuary. *Chemical Geology* 264: 375-384.
19. Stewart T. J. \*, Yau J. H. \*, Allen M. M., **Brabander** D. J., Flynn N. T. (2009) Impacts of calcium-alginate density on equilibrium and kinetics of lead(II) sorption onto hydrogel beads. *Colloid and Polymer Science* 287:1033-1040. DOI 10.1007/s00396-009-2058-4.
18. Clark H. F. \*, Hausladen D. M. \*, **Brabander** D. J. (2008) Urban gardens: Lead exposure, recontamination mechanisms, and implications for remediation design. *Environmental Research* 107: (3) 312-319.

17. Burnet A. \*, Kurtz A. C., **Brabander** D. J., Shailer M. (2007) Dendrochemical record of historical lead contamination sources, Wells G&H Superfund site, Woburn, Massachusetts *Journal of Environmental Quality* 36:1488-1494.
16. Schaidler L. A., Senn D. B., **Brabander** D. J., McCarthy K. D. \*, Shine J. P. (2007) Characterization of zinc, lead and cadmium in mine waste: Implications for transport, exposure, and bioavailability. *Environ. Sci. Technol.* 41: 4164-4171.
15. Clark H. \*, **Brabander** D., Erdil R. \* (2006) Sources, sinks and exposure pathways of lead in urban garden soil. *Journal of Environmental Quality* 35: (6) 2066-2074.
14. Rauch S., Hemond H., **Brabander** D. (2006) High spatial resolution analysis of lake sediment cores by laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS). *Journal of Limnology and Oceanography: Methods* 4: 268-274.
13. Harvey C. F., Swartz C. H., Badruzzaman A. B. M., Keon-Blute N., Yu W., Ashraf Ali M., Jay J., Beckie R., Niedan V., **Brabander** D. J., Oates P. M., Ashfaq K. N., Islam S., Hemond H. F., Ahmed M. F. (2005) Groundwater arsenic contamination on the Ganges Delta: biogeochemistry, hydrology, human perturbations, and human suffering on a large scale. *C. R. Geoscience* 337: 285–296.
12. Blute N. K., **Brabander** D. J., Hemond H. F., Sutton S., Newville M. G., Rivers M. L. (2004) Arsenic sequestration by ferric iron plaque on cattail roots. *Environ. Sci. Technol.* 38: 6074–6077.
11. Swartz C. H., Keon-Blute N., Badruzzaman A. B. M., Ashraf Ali M., **Brabander** D. J., Jay J., Besancon J., Islam S., Hemond H. F., Harvey C. F. (2004) Mobility of arsenic in a Bangladesh aquifer: Inferences from geochemical profiles, leaching data, and mineralogical characterization. *Geochimica et Cosmochimica Acta* 68 (22): 4539–4557.
10. Oktay S. D., **Brabander** D. J., Smith J. P., Kada J., Bullen T., Olsen C. R. (2003) WTC geochemical fingerprint recorded in New York harbor sediments, *EOS Trans. AGU*, 84: (3) 21–28.
9. Harvey C. F., Swartz C. H., Badruzzaman A. B. M., Keon-Blute N., Yu W., Ashraf Ali M., Jay J., Beckie R., Niedan V., **Brabander** D. J., Oates P. M., Ashfaq K. N., Islam S., Hemond H. F., Ahmed M. F. (2003) Response to comments on “Arsenic mobility and groundwater extraction in Bangladesh.” *Science* 300: 584d.
8. Rogers C. E., **Brabander** D. J., Barbour M. T., and Hemond H. F. (2002) Use of physical, chemical, and biological indices to assess impacts of contaminants and physical habitat alteration in urban streams. *Environmental Toxicology and Chemistry* 21 (6): 1156–1167.
7. Harvey C. F., Swartz C. H., Badruzzaman A. B. M., Keon-Blute N., Yu W., Ashraf Ali M., Jay J., Beckie R., Niedan V., **Brabander** D. J., Oates P. M., Ashfaq K. N., Islam S., Hemond H. F., Ahmed M. F. (2002) Arsenic mobility and groundwater extraction in Bangladesh. *Science* 298: 1602–1606.
6. Edmands J. D. \*, **Brabander** D. J., Coleman D. S. (2001) Uptake and mobility of uranium in black oaks: Implications for biomonitoring depleted uranium-contaminated groundwater. *Chemosphere* 44: 789-795.
5. Keon N., Swartz C. H., **Brabander** D. J., Harvey C., Hemond H. F. (2001) Validation of an arsenic sequential extraction method for evaluating mobility in sediments. *Environ. Sci. Technol.* 35: 2778–2784.
4. Farver J. R., **Brabander** D. J. (2001) Magma ascent rates from mineral reaction rims and extension to teaching about volcanic hazards. *Journal of Geoscience Education* 49 (2): 140-145.
3. **Brabander** D. J., Keon N., Stanley R. H. R. \*, Hemond H. F. (1999) Intra-ring variability of Cr, As, Cd, and Pb in red oak revealed by secondary ion mass spectrometry: Implications for environmental biomonitoring. *Proceedings of the National Academy of Sciences of the United States of America* 96: (25) 14635–14640.
2. **Brabander** D. J., Giletti B. (1995) Strontium diffusion kinetics in amphiboles and significance to thermal history determinations. *Geochimica et Cosmochimica Acta.* 59 (11): 2223–2238.
1. **Brabander** D. J., Hervig R. L., Jenkins D. M. (1995) Experimental determination of F-OH interdiffusion in tremolite and significance to fluorine-zoned amphiboles. *Geochimica et Cosmochimica Acta.* 59 (17): 3549–3560.

## MANUSCRIPTS IN REVIEW

1. Kamonji W. \*, **Brabander** D. (2019) Used lead acid battery recycling in low- and middle-income equatorial countries: Local to Global strategies to identify, mitigate, and prevent lead exposure and poisoning. Submitted *Elementa*

## MANUSCRIPTS IN PREPARATION

Gallagher C. L., Oettgen H. L., **Brabander D. J.** (2019) Biogeochemistry of urban fruit: A sustainable resource to increase food security. To be submitted *Elementa*

## CONSULTING

- 2011-2019 **Sherman-Fairchild Foundation**  
SEP program consultant. Write RFPs, evaluate proposals, conduct site visits for candidate institutions, and involved in foundation strategic planning.
- 2017-2019 **External program reviewer**  
Recent reviews in include Environmental Studies Program at Gettysburg College, Geological Sciences Department at Salem State University, and College of Wooster.

## INCLUSIVE EXCELLENCE

- 2019 **Posse Foundation** Traveled to Houston to be the first faculty interaction with Wellesley's Posse3 cohort – conducted roundtable discussion and designed and executed field work with the students involving the collection of urban soils that were analyzed on campus during their two week immersion program. (total time commitment = 3 days)
- HHMI funded IDEAL Center of the Science Museum of Minnesota** “Wellesley College STEM Faculty Institute” Institute examining inclusion, diversity and equity. (total time commitment = 7 days)
- Sherman Fairchild pilot bridge program workshop (Washington DC)** Facilitator and consultant for workshop aimed at sharing best practices in developing bridge programs in STEM to support inclusion, diversity and equity. (total time commitment = 3 days)
- 2018 Massachusetts PKAL (**Project Kaleidoscope**) Network Winter Meeting – Supporting All STEM Students, held at Bridgewater State University. (total time commitment = 0.5 days)
- Wellesley College** Attendee workshop on inclusive excellence. (total time commitment = 1 day)

## TECHNICAL REPORTS, CONFERENCE PROCEEDINGS, AND EDITORIALS (SINCE 2002)

- 2013 **Brabander D. J.**, Gambill I \* (2013) Wellesley College / The Neponset River Restoration Project. Conservation Catalysts Network. Lincoln Institute of Land, Harvard University (Link: <http://www.conservationcatalysts.net/members/wellesley-college-neponset-river-restoration-project>).
- 2007 Blute N. K., McGuire M. J., Qin G., **Brabander D. J.**, Newville M., Kavounas P. (2007) State-of-the-art geochemical techniques in evaluating drinking water treatment contaminant removal processes. *American Water Works Association Water Quality Technology Conference, Charlotte, North Carolina.*
- 2006 McGuire M. J., Blute N. K., Hamilton C., **Brabander D. J.** (2006) Formation of floating calcite rafts in a drinking water reservoir. *American Water Works Association Water Quality Technology Conference, Denver, Colorado.*
- 2003 Ross, L. \*, Beattie, R. B., **Brabander D. J.** (2003) Protecting children in playgrounds. *Boston Globe* Editorial. November 6, 2003.
- 2002 Keon N., **Brabander D.**, Hemond H., Sutton S., Newville M. (2002) Cattail root plaque retention of arsenic. Appeared in APS Forefront (published by Argonne National Laboratory).

## INVITED LECTURES/PRESENTATIONS

- 2018 Wellesley College Science Faculty Seminar Series, *Rethinking urban waste carbon management: Minimizing resuspension of legacy soil lead and supporting urban agriculture with geochemically fingerprinted compost*  
Wellesley College, International Relations Forum *Wicked Challenges in Global Health: A call for transdisciplinary collaborations* (with Prof. Charlene Galarneau, Tanvee Varma '18, and Shivani

- Dayal '18)  
Lawrence University, *Rethinking urban waste carbon management: Minimizing resuspension of legacy soil lead and supporting urban agriculture with geochemically fingerprinted compost*
- 2017 Primary Source, A Greener World: Understanding Connections Between People and the Environment, Keynote address, *Energy, Consumption & Sustainability: What Drives Happiness?*
- 2015 Wellesley College, Bangladeshi Students' Association, "*Arsenic Crisis in Bangladesh: Fifteen years of science, engineering, and policy making. Is it time for a paradigm shift?*" 10/26/2015.  
Wellesley College, GIS day, "*Spatial thinking in 4-D: A project-based approach to link student-collected field data, GIS mapping, and archive research*" 10/28/2015.
- 2014 Middlebury College, Geology Department/Environmental Studies Colloquium, "*Humans in the Built Environment: Interface between Geohealth and Public Health*"  
Primary Source, Educating for Global Understanding, Keynote address, "*Weaving Sustainability into your Curriculum: Concept Maps, Paradigms, and Systems Thinking*" Teaching for Global Understanding in the 21st Century, Boston College, Newton, MA  
Wesleyan University, Earth & Environmental Sciences Colloquium, "*Humans in the Built Environment the Emerging Interface between Medical Geosciences and Public Health*"  
Connecticut College, Department of Chemistry Seminar Series, "*Humans in the Built Environment the Emerging Interface between Medical Geosciences and Public Health*"  
Wellesley College, Albright Institute, "*Building a 21st Century Sustainability Paradigm: Systems, Maps, and Models*" with Rob Martello, Olin College
- 2013 Wellesley College, Project Handprint Symposia, "*Agriculture, health, and food security in the built environment*"  
Wellesley College, Albright Institute, "*Complexity, Ethics, and Paradigms: Sustainability in the Built Environment*" with Rob Martello, Olin College  
Primary Source, Educating for Global Understanding, Keynote address, "*The history of humans in the built environment: The challenge of sustainability*" (with Prof. Rob Martello, Olin College) Teaching for Global Understanding in the 21st Century, Boston College, Newton, MA
- 2012 Wellesley College, Albright Institute, "*A Tale of Three Cities: Technology, the built environment, and the challenge of sustainability*" with Rob Martello, Olin College  
Wellesley College, Science Faculty Seminar Series, "*Visioning sustainability at Wellesley*"  
Primary Source, Educating for Global Understanding, "*Fueling consumerism: Why less should be more*" *Greener World Workshop*, Watertown, MA
- 2011 Salem State University, Darwin Festival, Department of Biology, Keynote speaker, "*Humans in the built environment: The emerging interface between medical geosciences and public health*"  
Primary Source, Educating for Global Understanding, Keynote address, "*The history of humans in the built environment: The challenge of sustainability*", Teaching for Global Understanding in the 21st Century, Boston College, Newton, MA  
Wellesley College, Albright Institute, "*Pathways and Expressions of Sustainability: Identifying Vision and Executing Practice*" with Betsy Heller Cohen, VP Sustainability Nestle
- 2010 Brown University Department of Geological Sciences Colloquium Series, "*Urban lead geochemistry: Assessing the relative importance of exposure pathways to bioaccessibility*"  
Marine Biological Science Ecosystems Center Seminar Series "*Urban geochemistry and emerging lead exposure pathways*"
- 2009 Lawrence University and University of Wisconsin Oshkosh Department Seminars  
*Medical Geology, The Interface between Environmental Engineering and Public Health: Case Studies from the Urban Environment*
- 2008 Wellesley College Sciences Faculty Seminar Series: "Medical Geology: The Interface between Environmental Engineering and Public Health" Case study I, Lead in Urban Gardens  
Wellesley College Environmental Studies Faculty Seminar: "Medical Geology: The Interface between Environmental Engineering and Public Health" Case study II, Heavy Metal Migration at the Tar Creek Superfund Site, Oklahoma
- 2005 Brown University Department of Geological Sciences Colloquium Series: X-ray analysis of environmental materials: From the field portable to the synchrotron source
- 2005 Binghamton University Department of Geological Sciences and Environmental Studies: X-ray analysis of environmental materials: From the field portable to the synchrotron source
- 2004 Wellesley College, Summer Symposium, Fingerprinting pollutants and environmental health in the built environment

- 2001 UMass-Boston ECOS seminar series, "Uptake of Cr, As, and U in Oaks: Lessons from two NPL sites in Massachusetts and implications for environmental biomonitoring"
- 1999 EPA Region 1 (BOSTON) seminar series, Toxic metal management in an urban watershed: the Mystic/Aberjona river basin "Patterns of metal contamination in tree rings revealed by SIMS: A chronology of groundwater contamination?" D. Brabander and H. Hemond
- 1999 EPA Region 1 (BOSTON) seminar series, Toxic metal management in an urban watershed: the Mystic/Aberjona river basin "Arsenic and lead in soils and riverine sediments of the lower Aberjona valley," R. Stanley and D. Brabander

**ABSTRACTS FOR CONFERENCE PROCEEDINGS (\* = undergraduate author)**  
*(Number of undergraduate co-authors >100)*

- 2019 Bryant, N., B., \*, Solari, N., M. \*, Sheraden-Cox, L., \*, Monecke, K., **Brabander**, D. J., Hubeny, J. B., (2019) The Sedimentary Archive of Lake Waban: Multiproxy Analysis of Land Use Changes Since the Pre-Industrial Era, Geological Society of America Abstracts with Programs. Vol. 51, No. 1, ISSN 0016-7592 doi: 10.1130/abs/2019NE-327986.
- Smith-Tripp, S. \*, Matthes, J. H., **Brabander**, D. J., Griffith, A. (2019) Gypsy Moth Defoliation Effects on Watershed Hydrology, Geological Society of America Abstracts with Programs. Vol. 51, No. 1, ISSN 0016-7592 doi: 10.1130/abs/2019NE-328631.
- 2018 **Brabander**, D., J., Fitzstevens, M., Sharp, R., Oettgen, H., Passaretti, M., Jackman, E. \*, Chia, Y.M. K. \*, Smith-Tripp, S. \*, Wanzer, L. \* (2018) Beyond Citizen Science: Models for Community Engagement, Environmental Justice, and STEM Education, Highlighted [GH32A-01] presented at 2018 Fall Meeting, AGU, Washington, D.C., 10-14 Dec.
- Besancon, J., Hon, R., **Brabander**, D. J., Waller, M., Gilbert, K. W. (2018) A Constructed Pond and Its Interaction with Groundwater, Geological Society of America Abstracts with Programs. Vol. 50, No. 2. doi: 10.1130/abs/2018NE-311372.
- Jackman, E. \*, Passaretti, M. \*, Chia, Y.M. K. \*, Sharp, R. M., **Brabander**, D. J. (2018) Changes in City of Boston municipal compost: Identifying best management through geochemistry and participatory action research. Geological Society of America Abstracts with Programs. Vol. 50, No. 2. doi: 10.1130/abs/2018NE-311341.
- Jackman, E. \*, Chia, Y.M. K. \*, **Brabander**, D., J. (2018) Re-engineering Municipal Compost: Integrating Geochemistry, Public Health, and Community Stakeholders to Improve Food Sovereignty and Sustainability while Reducing Lead Exposure, Highlighted [GH33C-1254] presented at 2018 Fall Meeting, AGU, Washington, D.C., 10-14 Dec.
- Monecke, K., **Brabander**, D. J., Ebel, J., Hubeny, J. B., McCarthy, M. G. (2018) Multiproxy Analysis of Lake Sediments in Northeastern Massachusetts, USA – A 400-Year Long Record of Environmental Changes and Extreme Events, [PP11E-1305] presented at 2018 Fall Meeting, AGU, Washington, D.C., 10-14 Dec.
- Passaretti, M. \*, Anaya, M. \*, Wong, S. \*, Monecke, K., **Brabander**, D. J., Hubeny, J. B., McCarthy, F. M. G. (2018) A multiproxy analysis of sediment cores from Walden Pond, Concord, MA: Investigating natural processes and human impacts. Geological Society of America Abstracts with Programs. Vol. 50, No. 2. doi: 10.1130/abs/2018NE-311167.
- 2017 Chia, Y.M. K. \*, Smith-Tripp, S. M. \*, Wanzer, L. A. \*, Love, B. N. \*, Jones, K. N., Langridge, S. M., Gilbert, K. M., Waller, M., Besancon, J., **Brabander**, D. J. (2017) Science, systems, stakeholders: Using geosciences for landscape sustainability, enhanced by ecology of place. Geological Society of America Abstracts with Programs. Vol. 49, No. 6 Session T33. 225 doi: 10.1130/abs/2017AM-304569.
- Oettgen, H.L. \*, Gallagher, C.L. \*, **Brabander**, D.J. (2017) Biogeochemical trace element profiles of urban fruit trees: A resource to increase food security. 253<sup>rd</sup> American Chemical Society National Meeting San Francisco, CA, April 2-6, GEOC269.
- Abo-Sido, N.S. \*, Gallagher, C.L. \*, Jerz G. \*, Love, B. \*, **Brabander**, D.J. (2017) Comparative analysis of compost and alkaline battery oxide amendments for reducing lead solubility and phytoavailability. 253<sup>rd</sup> American Chemical Society National Meeting San Francisco, CA, April 2-6. ENVR 855.
- 2016 Abo-Sido, N.S. \*, Gallagher, C.L. \*, **Brabander**, D.J. (2016) Evaluating the potential of alkaline battery oxide powders to reduce lead mobility in urban agricultural settings. Geological Society of America. *Abstracts with Programs*. Vol 48, No.2.

- Hubeny, B.J., Kielb, S., McCarthy, F., Monecke, K., **Brabander**, D.J. (2016) Urban pond archives of climate and anthropogenic activities: A case study on Sluice Pond, Lynn, MA. Geological Society of America *Abstracts with Programs*. Vol. 48, No. 2.
- 2015 Lee, D. \*, **Brabander**, D. J (2015) Characteristics of Shanghai's urban residential PM: Monitoring personal exposure through air filtration devices. Geological Society of America *Abstracts with Programs*. Vol. 47, No. 3, p.59.
- Gallagher, C.L. \*, Oettgen, H.L. \*, Okhai, D.C. \*, **Brabander**, D.J. (2015) Assessing Risks And Potential Benefits Of Harvesting Urban Fruit. Geological Society of America. *Abstracts with Programs*. Vol. 47, No. 7, p. 244.
- Sharp, R.S. \*, Fitzstevens, M.G., **Brabander**, D.J. (2015) Urban carbon cycle risks and resources: Assessing the potential of municipal compost in urban soil lead remediation. Geological Society of America *Abstracts with Programs*. Vol. 47, No. 7, p.244.
- 2014 **Brabander**, D.J., Peaslee, G., (2014) Undergraduate Research: Engaging in environmental problem solving from the campus watershed to the global community. *Creating the Citizens of Tomorrow: Undergraduate Research for All*, CUR Conference, June 28-July 1, 2014, pg 45.
- Brabander**, D.J., Fitzstevens, M.G. (2014) New strategies for reducing childhood lead exposure from urban soils: Managing locally sourced carbon waste streams Geological Society of America *Abstracts with Programs*. Vol. 46, No. 6, p.391.
- 2013 **Brabander** D. J., Fitzstevens, M. G. (2013) Redesigning urban carbon cycles: From waste stream to commodity. B33N-07 presented at 2013 Fall Meeting, *AGU*, San Francisco, Calif., 9-13 Dec 2013.
- Brabander**, D. J., Handler, P. N. \*, Tang F. \* (2013) Secondary lead ingestion via ocular exposure to traditional south Asian, Middle Eastern and North African eye cosmetics and implications for IQ in children. Geological Society of America *Abstracts with Programs*. Vol. 45, No. 7, p.468.
- Fitzstevens, M.G. \*, Schmidt, G. A., Koschinsky A., **Brabander**, D. J. (2013) How do regulations affect municipal compost geochemical fingerprints and metal loading? A comparison study between Northern Germany and Boston, MA, USA. Geological Society of America *Abstracts with Programs*. Vol. 45, No. 1, p.68.
- 2012 **Brabander**, D. J., Estes, E. R., Shen Y., Shine, J. P. (2012) Source, transport, and matrix controls on metal bioavailability in floodplain. Goldschmidt 2012 Conference Abstracts, Montreal, Canada, Mineralogical Magazine v76, p 1507.
- Brabander**, D. J. (2012) Integrating systems level thinking with curriculum through research: Examples form Urban and watershed biogeochemistry (Invited contribution). Geological Society of America *Abstracts with Programs*, Vol. 44, No. 7, p.446.
- Di Cicco J. H. V. \*, **Brabander** D. J. (2012) The colonial New England kitchen garden: Historical urban agriculture. Geological Society of America *Abstracts with Programs*, Vol. 44, No. 2, p. 94.
- Estes E. R., Shen Y., Dyar D. M., **Brabander** D. J., Shine J. P. (2012) Influence of ion coprecipitation and adsorption on iron (hydr)oxide structure and aggregate morphology. Goldschmidt 2012 Conference Abstracts, Montreal, Canada, Mineralogical Magazine v76, p 1690.
- Fitzstevens M. G. \*, **Brabander** D. J. (2012) Evaluating compost source and management practices in the context of reducing lead exposure to urban gardeners. Geological Society of America *Abstracts with Programs*, Vol. 44, No. 2, p. 110.
- Fitzstevens M.G. \*, Tabony J. A., Heiger-Bernays W., **Brabander** D. J. (2012) Urban carbon cycling: source stream attribution modeling and minimizing lead exposure pathways. Geological Society of America *Abstracts with Programs*, Vol. 44, No. 7, p. 609.
- George Sarah W. \*, Cantine, M. D. \*, **Brabander** D. J (2012) Geochemical leaching of alkaline batteries: Implications for landfill disposal and remediation of lead contaminated compost. Geological Society of America *Abstracts with Programs*. Vol. 44, No. 7, p.608
- Kamoni F. C. N. \*, **Brabander** D. J (2012) Lead poisoning from used lead acid battery recycling: A case study of the Owino-Uhuru, Mombasa, Kenya. Geological Society of America *Abstracts with Programs*, Vol. 44, No. 2, p. 111.
- Shen Y., Shdo S., Estes, E., Zota A. R., **Brabander** D. J., Shine J. P. (2012) Biogeochemistry Improves Prediction of Metal Bioaccessibility of Yard Soils in Tar Creek, USA. Goldschmidt 2012 Conference Abstracts, Montreal, Canada, Mineralogical Magazine v76, p 2360.
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## Teaching and campus sustainability: Workshop/conference participation

- 2019 **National Council for Environment and Science (NCSE)** Participant in Deans and Program Directors Annual Meeting and NCSE annual conference. Washington DC. Present's representative to evaluate the benefits of Wellesley's participation in this peer group of institutions focused broadly on sustainability and environmental science. (time commitment = 4 days)
- 2009 Presenter, NSF funded **Council on Undergraduate Research** "Establishing and Sustaining an Undergraduate Research Program: A professional development workshop for new and future faculty"
- 2002 **Project Kaleidoscope summer institute** "Environmental Sciences: Connecting to the Community"
- 2001 **NSF-sponsored summer workshop** "New Approaches and Techniques for Teaching Science: Addressing Environmental Problems to Stimulate Undergraduate Learning"

## SPONSORED PROJECTS

### Recent funding

- 2019 **Paulson Initiative Course Grant Program** Incubating research in the campus landscape: A new model for lab projects in ES/GEOS 201 Environmental Health and Sustainability Sciences (PI) \$2,500
- 2016-2017 **Faculty Award (Wellesley College)** New strategies for reducing childhood lead exposure from urban soils: Managing locally sourced carbon waste streams (PI) \$2,500
- 2010-2014 **National Institutes of Health (NEIHS)** Geochemical Processes Affecting Temporal Variability in the Bioaccessibility of Metals in Soil. Harvard School of Public Health, Dr. Robert Wright, (PI). Subcontract: \$72,292.
- 2014 **Brachman Hoffman (Wellesley College)** Redesigning Urban Carbon Cycles to Support Urban Agriculture and Address Chronic Lead Poisoning in the Built Environment. (PI) \$4,971.

### Recent proposals

- 2016-2018 **National Science Foundation (NSF) INCLUDES AWARDS:** Accelerating Women's Achievement and Representation in Data Science (Senior Personnel), Pre-proposal with Bryn Mawr lead (denied).
- 2014-2018 **National Institutes of Health (NIH)** Effects of iron oxide biogeochemistry, stream chemistry, and co-contaminants on heavy metal mobility and bioaccessibility: Implications for in situ remediation of mining-impacted sites. Jim Shine (PI) Brabander (Co-PI) \$49,955 (denied)
- 2011-2016 **National Science Foundation (NSF)** Defining Geoscience for Recruiting, Education and Employment (DEGREE). Bob Chen (PI) Wellesley Partner, \$254,993 (denied)
- 2014-2016 **National Science Foundation (NSF)** MRI: Acquisition of an Integrated Atomic Force and Fluorescence Microscope at Wellesley College (Senior Personnel) \$334,936 (denied)

### Previous funding (pre 2012)

- 2010-2012 **Brachman Hoffman Fellowship (Wellesley College)** Emerging urban land use patterns and fine particulate matter: Implications for respiratory lead exposure pathways in the context of urban agriculture. Principal Investigator.  
Award: \$39,933
- 2006-2011 **Neponset River Watershed Association (Barr Foundation)**  
Beyond surface water quality: Leveraging the restoration of an urban river.  
Subcontract award: \$70,350
- 2008-09 **Faculty Award (Wellesley College)**  
Extreme events and public health: Fate and transport of heavy metals in a historic mining district in response to fifty year flood and EF4 tornado, Northeastern Oklahoma.  
Award: \$5,900
- 2007-08 **US Environmental Protection Agency (EPA)**  
Healthy Communities Grants Program from The Food Project.  
Subcontract award: \$5,000.
- 2006-09 **National Institutes of Health (NIH 5-P01 ES012874-03)**  
Metal mixtures and children's health. Harvard School of Public Health, Dr. Joseph Brain, (PI).  
Subcontract award \$68,857
- 2006-07 **Malcolm Pirnie, Inc.**  
Glendale hexavalent chromium pilot project.  
Subcontract award: \$10,311
- 2004-05 **Department of Defense (DOE) MIT-DOE DE-FG07-02ID14377 Reactor sharing grant**  
Environmental biomonitoring of Cr and As in shallow groundwater: Do red oak trees preserve long term records of contaminant loading? Renewal award: \$27,000
- 2004 **Brachman-Hoffman Small Grant, Wellesley College**  
Sustainable urban community gardening: The challenge of elevated lead concentrations in soil.  
Award: \$3,000
- 2004 **Staley Small Grant, Wellesley College**  
Assessing the mobility of arsenic from pressure treated wood in the playground environment.  
Award: \$3,480
- 2004 **Faculty Award, Wellesley College**  
Fingerprinting urban sources of lead. Award: \$1,680

### Previous funding record at UMB

- 2003-06 **NSF-GK12 (Contributing personnel)**  
Responsibilities: linking undergraduate interns with graduate students  
Award: \$1.5 million – Chen R. F. PI
- 2003 **MIT-DOE Reactor sharing grant (PI)**  
Environmental biomonitoring of Cr and As in shallow groundwater: Do red oak trees preserve long-term records of contaminant loading? Award: \$28,200 (\$3,200 UMB cost share)
- 2002-06 **NSF- NER-COSEE (Senior Personnel)**  
Responsible for writing sections of grant and running workshops focused on undergraduate ocean education. Award: \$2.5 million (\$256K UMB share – Chen R. F. PI)
- 2002 **Healey grant-UMass-Boston (Co-PI)**  
Building competitiveness for an Earth Sciences NSF-REU application in AY 2002-2003:  
Demonstration of an easily transportable research experience for undergraduates based on campus-

wide water testing program. Award: \$3,638

## PEER REVIEWER

National Science Foundation, Environmental Science and Pollution, Canadian Journal of Forest Research, Earth and Planetary Science Research Letters, Geochimica Cosmochimica Acta, Soil and Sediment Contamination, Environmental Science and Technology, Environmental Research, Journal of Environmental Quality, Applied Geochemistry

## TEACHING/MENTORING RECOGNITION

- 2016 **The National Academies of Sciences, Engineering, and Medicine**  
Panelist, First Information Gathering Workshop, Integration of Education in the Sciences, Engineering, and Medicine with the Arts and Humanities at the Undergraduate and Graduate Levels.
- 2013 **Council on Undergraduate Research, CUR Q on the Web, Undergraduate Research Highlights**, Spring 2013 | Volume 33, Number 3. P 18 “Increased incidence and altered risk demographics of childhood lead poisoning: Predicting the impacts of the CDC’s 5 µg/dL reference value in Massachusetts (USA).”
- 2010 ***Anna and Samuel Pinanski Prize for Teaching Excellence, Wellesley College***
- 2017-2020 **Council on Undergraduate Research (CUR), Washington DC**  
2008-2014 Elected Geosciences Councilor, Attend annual meetings – leadership in undergraduate research as pedagogy. Developed and lead committee to establish a national award recognizing undergraduate research mentoring (award citationist 2011-2013).

## WELLESLEY COLLEGE COURSES

GEOS 101 Earth Processes and the Environment with Lab  
GEOS 102 Dynamic Earth with Lab  
ASTR/GEOS 120 Planetary Habitability  
GEOS/ES 201 Environmental, Health, Sustainability Sciences  
GEOS 203 Earth Materials with Lab  
SUST 220 (with Olin College) Predictions Paradigms and Joules  
ES 300 Environmental Issues  
GEOS/ES 315 Environmental Geochemistry with Lab  
GEOS 320 Isotope Geology

## *Previous Institutions*

Physical Geology (Salem State College)  
The Nature of Environmental Problems (UMass-Boston)  
Introduction to Geochemistry (Boston University)  
Environmental and Forensic Geochemistry (UMass-Boston)  
Igneous and Metamorphic Petrology (Boston University)  
Environmental Problem Analysis and Policy Formulation (UMass-Boston)  
Aquatic Chemistry (MIT)  
Big Bang to Humanity (Tufts, 2016, 2018)

## UNDERGRADUATE RESEARCH STUDENTS

### *Honors theses (advisor of record)*

9. Kimberly Chia Yan Min ('19, Environmental Studies) Factors affecting the successful implementation of municipal composting initiatives in Massachusetts, USA.
8. Rosalie Sharp ('16, Environmental Studies) Confronting Environmental and Social Drivers of Lead Exposure in Urban Gardens Through Community Centered Remediation.
7. Phoebe Handler ('12, Environmental Studies) Diet as a Prevention Tool for Chronic, Low-Level Lead Exposure: A Population-Specific Intervention Model for Massachusetts.
6. Emily Estes ('10, Geosciences), Chemical and physical characterization of naturally precipitated hydrous ferric oxides at the Tar Creek Superfund Site, Oklahoma.
5. Sarah Hurley ('10, Geosciences), Long-term paleoclimate reconstruction of the Indian Monsoon using molecular proxies.
4. Kathleen McCarthy ('08, Environmental Chemistry), Designing a geochemical and sedimentological approach to evaluate the risk of exposure to Pb, Zn, and Cd: A case study of a major flood event at the mining-impacted Tar Creek, Northeastern Oklahoma.

3. Emily Pighetti ('08, Environmental Studies), Geochemical Signatures in a Suburban Watershed: A study of the sedimentological fate, transport, and legacy of industrialization in the East Branch of the Neponset River, Canton Massachusetts.
2. Heather Clark ('07, Environmental Studies), Tracing Lead from the source to the human system: A study of the environmental cycle, geochemistry, bioaccessibility, and human health risks of lead in urban garden soils.
1. Rachel Erdil ('07, Environmental Chemistry), Deciphering the geochemical history of Lake Waban.

***Co-advised theses***

1. Thea Stewart ('08, Chemistry), Investigation and application of *chlamydomonas reinhardtii* for accumulation of lead (II) from freshwater.

**Recent honors thesis committee member**

1. Lucy Wanzer ('19, Geosciences)
2. Sarah Smith Tripp ('19 Geosciences)

***Independent research students***

- 2019 Kate Hanson '19 (GEOS 350) GEOS major, Lauren Santo Domingo '19 (GEOS 250) GEOS major, Nolen Bryant '19 (GEOS 250) GEOS major, Brianna Love '19 (GEOS 250) ARCH major, Jennifer Harris '19 (GEOS 250H) BISC major, Emma Jackman '19 (GEOS 350) GEOS major **n=6**  
Paulson Summer Water Challenge Faculty Advisor: ten students
- 2018 Amanda Hernandez '18, (GEOS 350) GEOS/ES major, Shivani Daya '18 (GEOS 350) Neurosciences major, Tanvee Varma '18 (GEOS 350) Economics major, Christina (Charli) Klein (GEOS 350) Chemistry major, Kimberly Chia Yan Min, '19 (Paulson research student) ES major, Lucy Wanzer '19 (Paulson research student) GEOS major, Emma Jackman '19 (research assistant) GEOS major, Brianna Love '19 (ARCH major), Madeleine Cahillane '18 (research assistant) BISC major, Jenn Harris '19 (Paulson research student) BISC, Sarah Smith-Tripp '19 (Paulson research student) GEOS major, (Melanie Passaretti '18 (outreach coordinator) GEOS major and Zubyn D'Costa (SERP) **n= 13**  
Paulson Summer Water Challenge Faculty Advisor: six students
- 2017 Nisreen Abo-Sido '18 (ES/researcher), Kimberly Chia Yan Min, '19 (ES/Paulson research student), Alexis Corcoran '18 (BISC/researcher), Ciaran Gallagher '17 (Environmental Chemistry/research-group leader), Amanda Hernandez '18 (ES/researcher), Emma Jackman '19 (GEOS/apprentice) Sarah Koenig '17 (ES/researcher), Brianna Love '19 (GEOS/SERP),Thessaly McFall '19 (GEOS 250H), Hannah Oettgen '17 (GEOS/research-group leader), Melanie Passaretti '18 (GEOS/researcher), Sarah Smith-Tripp '19 (GEOS/Paulson research student), Nhia Solari '19 (GEOS/SERP), Lucy Wanzer '19 (GEOS/Paulson research student), Meredith Wade '17 (ES/outreach coordinator) **n= 15**
- 2016 Nisreen Abo-Sido '18 (SE/SERP), Kimberly Chia Yan Min, '19 (ES/firstyear apprentice), Alexis Corcoran '18 (BISC/ES 250H), Hannah Davelman '16 (ES/ES 350), Ciaran Gallagher '17 (Environmental Chemistry/), Amanda Hernandez '18 (ES/ES 250H), Hayley Jewett '16 (ES/GEOS 50H), Hannah Oettgen '17 (GEOS/GEOS 250), Rosalie Sharp '16 (ES/ES 370), Emma Van Scoy '18 (Environmental Chemistry/GEOS 250H), Idalmis Vaquero '16 (ES/ES 350), Meredith Wade '17 (ES/ES 250) **n= 12**
- 2015 Diana Lee, '15 (S15- GEOS350), Greta Janigian '15 (S15-ES350), Meredith Wade '17 (F15-ES250H), Rosalie Sharp '16 (F15-ES360), Idalmis Vaquero '17 (F15-ES350) **n=5**  
Summer research group: Rosalie Sharp '16, Disha Okhai '17, Hannah Oettgen '17
- 2014 Rosalie Sharp, '16 (F13-S14, research assistant), Janna Zimmermann '14 (S14-GEOS250H)
- 2013 Siyi Zhang '15 (F13-GEOS250), Janna Zimmermann '14 (F13-GEOS250H), Sophia Liu '14 (F13-GEOS250H, Florence Wangui Kamonji '13 (S13-GEOS350), Gertrude Merkel '13 (S13-GEOS250H), Maia Fitzstevens (S13-GOES250H)
- 2012 Siyi Zhang '15 (F12-GEOS250H), Maia Fitzstevens '13 (S12-ES350), Phoebe Handler '12 (S12-ES370)  
Summer research group: Maia Fitzstevens

- 2011 April Bello '14 (F11-GEOS250H), Eliana Blaine '13 (F11-GEOS250H), Julia Di Cicco '12 (F11-GEOS350), Maia Fitzstevens '13 (F11-GEOS350), Isabella Gambill '12 (F11-ES350), Alexandra Hatem '12 (S11-GEOS250), Phoebe Handler '12 (F11-ES360), Florence Wangui Kamonji '13 (F11-ES350),  
Summer research group: Phoebe Handler
- 2010 Emily Estes '10 (S10-GEOS370), Sarah Hurley '10 (S10-GEOS370), Nooreen Meghani '11 (F10-GEOS350), Casey Sedlack (F10-GEOS350), Fanny Tang (F10-GEOS350), Ellen Willis-Norton (F10-GEOS350), Phoebe Handler '12 (F10-GEOS250), Elizabeth Lillard '11 (F10-GEOS250), Shontelle Brathwaite '11 (F10-ES250H), and Sooyeon Kho '11 (F10-ES250H)  
Summer research group: Full time: Isabella Gambill '12 (ES) co-advised with Jay Turner, Environmental Studies.), Deva Shafer '10 (ES), and Fanny Tang '11 (Environmental Chemistry) Part-time: Alex Hatem '12 (GEOS), Megan Carter-Thomas '10 (GEOS), Emily Estes '10 (GEOS), Nooreen Meghani '11 (GEOS)
- 2009 Megan Carter-Thomas (F09-GEOS 350) Trace metal concentrations in urban parks of New England: Land uses, geochemical fingerprints, and regulatory limits (GSA national conference poster).  
Summer research group: Megan Carter-Thomas '10 (GEOS), Heather Clark '07 (ES) Emily Estes '10 (GEOS), Kathleen McCarthy '08 (environmental chemistry), Nooreen Meghani '11 (GEOS) Deva Shafer '10 (ES)
- 2008 Kitt Kunce '08 (S08-GEOS 350) The effect of redox conditions on the release of phosphorous from lake sediments (Ruhlman poster)  
Summer research group: Megan Carter-Thomas '10 (GEOS), Kathleen McCarthy '08 (Environmental Chemistry), Deva Shafer '10 (ES), Elizabeth Denis, Brown Chemistry REU student (Presented at Bridgewater State ACS conference New England Environmental Chemistry)
- 2007 Debra Hausladen (F07-ES250H), Emily Pighetti (S07/F07-ES360-370), Heather Clark (S07-ES370), Rachel Erdil (S07-CHEM370)  
Summer research group: Kathleen McCarthy '08 (Environmental Chemistry, Relena Ribbons (ES)'09, and Emily Pighetti (ES) '08
- 2006 Christine Grant '06 (GEOS 350) Spatial and temporal trace metal geochemical signatures in urban ponds: Recorders of past land use – indicators of future development (GSA poster and Ruhlman poster)  
 Debra Hausladen '09 (summer research) Lead inventories in garden compost in Boston and Wellesley (summer program poster)  
 MieAi Khoo '08 (summer research) Sedimentological records of mining metals (Pb and Zn) in Tar Creek and Neosho Rivers, Oklahoma (summer program poster)  
 Emily Knurek '07 (ES250) Geochemical analysis of yard soils from the Tar Creek Superfund region (presentation to Harvard research group)  
 Kitt Kunce '08 (summer research) Historical geochemical fingerprints in an urban watershed: East Branch Neponset River, Canton, MA (summer program poster)  
 Kathleen McCarthy '07 (GEOS 350, summer research) Mine waste piles as a source of metal contamination at the Tar Creek Superfund Site (GSA oral presentation and summer program poster)  
 Emily Pighetti '07 (ES350) Similar Strategies with Different Goals: The United States' and Finland's Search for Energy Alternatives (final paper)  
 Relena Ribbons '09 (GEOS 350) Investigating the historical background of Revere Copper Mill in Canton, MA (Ruhlman poster presentation)  
 Theodora Stewart '07 (BIO 350, co-advised) Heavy metal adsorption to bacterial surfaces: Possibilities for natural attenuation of contaminated fresh water systems (Ruhlman poster presentation)  
 Naomi Wells '07 (GEOS 360, summer research) Predicting the long-term behavior of crude oils in the coastal marine environment through compositional analysis of the sediments (Ruhlman presentation and summer program poster)
- 2005 Cynara Cannatella '06 (GEOS 360 and summer research) A GIS and hydrogeological study of Paramecium Pond, Wellesley, MA (GIS maps)  
 Heather Clark '07 (ES 350 and summer research) Characterization, speciation and remediation of lead in urban garden soils (21<sup>st</sup> Annual International Conference on Soils, Sediments and Water, awarded best student poster)  
 Rachel Erdil '07 (GEOS 350) Deciphering the geochemical history of Lake Waban (Ruhlman poster)  
 Christine Grant '06 (ES 350 and summer research) Spatial and temporal trace metal geochemical signatures in urban ponds: Recorders of past land use – indicators of future development (summer program poster)  
 Cathryn Johnson '05 (ES 350) Where could Wellesley's food come from? (Ruhlman poster)  
 Kathleen McCarthy '07 (GEOS 350 summer research) Mine waste piles as a source of metal contamination at the Tar Creek Superfund Site (GSA oral presentation and summer program poster)

- Anna Wall '05 (GEOS 360 and summer research) Volcanic chemostratigraphy on the outcrop using field-portable X-ray fluorescence: An example from the basaltic flow of Hewitt's Cove, MA (AGU poster and Ruhlman poster)
- Naomi Wells '07 (GEOS 350, summer research) Predicting the long-term behavior of crude oils in the coastal marine environment through compositional analysis of the sediments (final paper/proposal)
- 2004 Kristen Blanton '04 (Independent research project) Sustainable urban community gardening: The challenge of elevated lead concentrations in soil (Ruhlman presentation)
- Miranda Brintnell '07 (summer research) Designing a new lab unit for Earth Processes and the Environment: Chemical and physical measurements in Paintshop Pond Brook (summer program poster)
- Kate Doiron '05 (GEOS 350) Impacts of historical use and gradients on lead and arsenic concentrations in soil profiles, Middlesex Fells, MA (Ruhlman poster)
- Rachel Erdil '07 (summer research) Pressure treated wood in playgrounds: Arsenic concentrations in soil and leaching processes (Tanner presentation)
- Catherine Silvey '07 (GEOS 350) Making a mountain out of a mudflat: the geological and ecological importance of mudflats (Tanner presentation)

#### **GRADUATE RESEARCH STUDENTS**

- 2015 Eun Joo Park (PhD, Harvard School of Public Health) Metal mixtures and speciation: Implications for environmental and public health exposure and risk assessment. (External thesis committee evaluator).
- 2014 Mark Laidlaw (PhD, Macquarie University, Australia) Soil lead and human health exposure risks: Studies from Australia and the United States of America. (External thesis committee evaluator).
- 2006 Mark Shailer (MS, UMass-Boston) Environmental biomonitoring of Cr and As in shallow groundwater: Do red oak trees preserve long-term records of contaminant loading? (Primary advisor).