

## Curriculum Vitae

Aria Amirbahman, Ph.D., P.E.

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### EXPERIENCE and APPOINTMENTS:

- (9/97-present) Professor (9/09-present), Associate Professor (9/03-8/09), and Assistant Professor (9/97-8/03) – Department of Civil and Environmental Engineering, University of Maine.
- (10/07-present) Cooperating faculty, School of Policy and International Affairs, University of Maine.
- (2/07-present) Cooperating faculty, Center for Research on Sustainable Forests, University of Maine.
- (1/04-9/04) Visiting Scientist (sabbatical leave); U.S. Geological Survey, Menlo Park, CA, USA. Collaborators: Drs. Douglas B. Kent and James A. Davis.
- (5/98-9/98) Visiting professor; Division of Soil Protection, Institute of Terrestrial Ecology (ITÖ), Swiss Federal Institute of Technology (ETH-Zürich), Switzerland. Collaborator: Dr. Gerhard Furrer.
- (1/95-8/97) Postdoctoral Research Fellow – Division of Biogeochemistry, Swiss Federal Institute of Environmental Science and Technology (EAWAG/ETH-Zürich), Switzerland. Supervisor: Prof. Laura Sigg.
- (10/89-9/94) Graduate Research and Teaching Assistant – Department of Civil and Environmental Engineering, University of California, Irvine, CA.
- (9/85-9/89) Civil Engineer – Santa Clara Valley Water District, San Jose, CA.
- (9/84-7/85) Hydraulic Engineer – Hydro-Research Science, Inc., Santa Clara, CA.

### EDUCATION:

- Ph.D. Environmental Engineering, 1994. University of California, Irvine, CA, USA. Dissertation: Transport of Humic Matter-Coated Colloids in Packed Beds.
- M.S. Civil Engineering, 1989. San Jose State University, San Jose, CA.
- B.S. Civil Engineering, 1984. San Jose State University, San Jose, CA.

## COURSES TAUGHT:

CIE 100 – Introduction to Civil and Environmental Engineering (1 cr.; coordinator)  
CIE 231 – Fundamentals of Environmental Engineering (3 cr.)  
CIE 350 – Hydraulics (3 cr.)  
CIE 351 – Hydraulics Lab (1 cr.)  
CIE 411 – Senior Design (3 cr.; faculty advisor)  
CIE 430 – Water Treatment (4 cr., lecture and lab)  
CIE 431 – Pollutant Fate and Transport (4 cr., lecture and lab)  
CIE 437 – Environmental Chemistry (4 cr., lecture and lab)  
CIE 533 – Aquatic Environmental Chemistry (3 cr.)  
CIE 598 – Mercury Biogeochemistry Seminar (1 cr.)  
CIE 631 – Process Dynamics in Environmental Systems (3 cr.)  
CIE 634 – Environmental Engineering Design Lab (3 cr.)

Courses taught at the University of California, Irvine:

CE 170 – Hydraulics Laboratory  
CE 266 – Aqueous Geochemistry (co-taught with T.M. Olson)

## CERTIFICATES AND AWARDS:

California Professional Civil Engineer (P.E.); Certificate No. C-49994  
Excellence in Review Award, *Environmental Science & Technology*, 2009  
Civil and Environmental Engineering Professor of the Year; elected by the ASCE Student Chapter, 2009  
Dean's Award of Excellence, College of Engineering, University of Maine, 2005  
Young Teacher of the Year Award, College of Engineering, University of Maine, 2002  
University of California's Regents Fellowship, 1993-1994  
Irvine Ranch Water District's Scholarship, 1992

## PUBLICATIONS:

### PEER-REVIEWED JOURNAL ARTICLES: (graduate students/postdocs underlined)

1. Bank, M.S., J.B. Crocker, A. Amirbahman, and R.I. McDonald, "Mercury in Forested Streams and Salamander Larvae in Acadia National Park: Effects of Geospatial Heterogeneity." Submitted to *Environmental Science & Technology*.
2. Lake B.A., C.R. Salm, J.E. Saros, and A. Amirbahman, "Multi-Proxy Paleolimnological Assessment of Biogeochemical versus Food Web Controls on the Trophic States of Two Shallow, Mesotrophic Lakes." Submitted to *Journal of Paleolimnology*.
3. Wilson T.A., A. Amirbahman, S.A. Norton, and M.A. Voytek, "A Record of Phosphorus Dynamics in Oligotrophic Lake Sediment." Submitted to *Journal of Paleolimnology*.
4. Porcal P., A. Amirbahman, J. Kopáček, and S.A. Norton, "Experimental Photochemical Release of Organically-Bound Aluminum and Iron in Three Streams in Maine, USA." Submitted to *Environmental Monitoring and Assessment*.
5. Amirbahman A., B.C. Holmes, I.J. Fernandez, and S.A. Norton, "Mobilization of Metals and Phosphorus from Intact Forest Soil Cores by Dissolved Inorganic Carbon." *Environmental Monitoring and Assessment*. In press.
6. Ohno S., and A. Amirbahman, "Phosphorus Availability in Boreal Forest Soils: A Nutrient Uptake Modeling Approach." *Geoderma*. In press.

7. Merritt K.A., and A. Amirbahman, 2009, "Mercury Methylation Dynamics in Estuary and Coastal Marine Sediments – A Critical Review." *Earth Science Reviews*, 96, 54-66.
8. Navratil T., J. Rohovec, A. Amirbahman, S.A. Norton, and I.J. Fernandez, 2009, "Amorphous Aluminum Hydroxide Control on Sulfate and Phosphate in Sediment-Solution Systems." *Water, Air and Soil Pollution*, 201, 87-98.
9. Porcal P., A. Amirbahman, J. Kopáček, F. Novák, S.A. Norton, 2009, "Photochemical Release of Humic and Fulvic Acid-Bound Metals from Simulated Soil and Streamwater." *Journal of Environmental Monitoring*, 11, 1064-1071.
10. Chen C., A. Amirbahman, N. Fisher, G. Harding, C. Lamborg, D. Nacci, and D. Taylor, 2008, "Methylmercury in Marine Ecosystems: Spatial Patterns and Processes of Production, Bioaccumulation, and Trophic Transfer." *Ecohealth*, 5, 398-408.
11. Norton S.A., K.M. Coolidge, A. Amirbahman, R. Bouchard, J. Kopáček, and R.L. Reinhardt, 2008, "Speciation of Al, Fe, and P in Recent Sediment from three Lakes in Maine, USA." *Science of the Total Environment*, 404, 276-283.
12. Wilson T.A., S.A. Norton, B.A. Lake, and A. Amirbahman, 2008, "Sediment Geochemistry of Al, Fe, and P for Two Oligotrophic Maine lakes during a Period of Acidification and Recovery." *Science of the Total Environment*, 404, 269-275.
13. Charlestra L., D.L. Courtemanch, A. Amirbahman, and H. Patterson, 2008, "Semipermeable Membrane Device (SPMD) for Monitoring Dioxin Levels from a Paper Mill Effluent in the Androscoggin River, Maine, USA." *Chemosphere*, 72, 1171-1180.
14. Merritt K.A., and A. Amirbahman, 2008, "Cycling of Methylmercury in Estuarine Sediment Pore Waters (Penobscot River Estuary, Maine, USA)." *Limnology and Oceanography*, 53, 1064-1075.
15. Peckenham J.M., J.A. Nadeau, A. Amirbahman, and R. Behr, 2008, "Mobilization of Nutrients and Metals from Field-Stacked Municipal Biosolids." *Waste Management and Research*, 26, 163-172.
16. Ohno T., A. Amirbahman, and R. Bro, 2008, "Parallel Factor Analysis of Excitation-Emission Matrix Fluorescence Spectra of Water-Soluble Organic Matter as Basis for the Determination of Conditional Metal Binding Parameters." *Environmental Science & Technology*, 42, 186-192.
17. Johnson K.B., T.A. Haines, J.S. Kahl, S.A. Norton, A. Amirbahman, and K.D. Sheehan, 2007, "Controls on Mercury and Methylmercury Deposition for Two Watersheds in Acadia National Park, Maine." *Environmental Monitoring and Assessment*, 126, 55-67.
18. Kahl, J.S., S.J. Nelson, I.J. Fernandez, T.A. Haines, S.A. Norton, G.B. Wiersma, G. Jacobson Jr., A. Amirbahman, K.B. Johnson, M. Schauffler, L.E. Rustad, K. Tonnessen, M. Nielsen, K.C. Weathers, R.M. Lent, M. Bank, J. Elvir, J. Eckhoff, H.J. Caron, P. Ruck, J. Parker, J. Campbell, D. Manski, R. Breen, C. Roman, K. Sheehan, and A. Grygo, 2007, "A conceptual framework for control of stream water geochemistry by landscape factors, Acadia National Park, USA." *Environmental Monitoring and Assessment*, 126, 9-25.
19. Merritt K.A., and A. Amirbahman, 2007, "Mercury Dynamics in Sulfide-Rich Sediments: Geochemical Controls on Contaminant Storage Potential of the Penobscot River Estuary, Maine, USA." *Geochimica et Cosmochimica Acta*, 71, 929-941.
20. Lake B.A., K.M. Coolidge, S.A. Norton, and A. Amirbahman, 2007, "Factors Contributing to the Internal Loading of Phosphorus from Anoxic Sediments in Six Maine, USA, Lakes." *Science of the Total Environment*, 373, 534-541.
21. Merritt K.A., and A. Amirbahman, 2007, "Mercury Mobilization in Estuarine Sediment Porewaters: A Diffusive Gel Gradient Study." *Environmental Science & Technology*, 41, 717-722.

22. Bank M.S., J. Crocker, B. Connery and A. Amirbahman, 2007, "Mercury Bioaccumulation in Green Frog and Bullfrog Tadpoles from Acadia National Park, Maine, USA." *Environmental Toxicology and Chemistry*, 26, 37-44.
23. Sheehan K.D., I.J. Fernandez, J.S. Kahl, and A. Amirbahman, 2006, "Litterfall Mercury in Two Forested Watersheds at Acadia National Park, Maine, USA." *Water, Air and Soil Pollution*, 170, 249-265.
24. Amirbahman A., D.B. Kent, G.P. Curtis, and J.A. Davis, 2006, "Kinetics of Sorption and Abiotic Oxidation of Arsenic(III) by Aquifer Materials." *Geochimica et Cosmochimica Acta*, 70, 533-547.
25. Kopáček J., J. Borovec, J. Hejzlar, K.-U. Ulrich, S.A. Norton, and A. Amirbahman, 2005, "Aluminum control of Phosphorus Sorption in Lake Sediments." *Environmental Science & Technology*, 39, 8784-8789.
26. Peckenham J.M., J.A. Nadeau, and A. Amirbahman, 2005, "Water Quality Impacts: Nitrogen Release from Field Stacked Biosolids," *BioCycle*, 46, 47-52.
27. Liu R., B. Goodell, J. Jellison, and A. Amirbahman, 2005, "Electrochemical Study of 2,3-Dihydroxybenzoic Acid and its Interaction with Cu(II) and H<sub>2</sub>O<sub>2</sub> in Aqueous Solutions: Implications for Wood Decay." *Environmental Science & Technology*, 39, 175-180.
28. Merrifield J.D., W.G. Davids, J.D. MacRae, and A. Amirbahman, 2004, "Uptake of Mercury by Thiol-grafted Chitosan Gel Beads." *Water Research*, 38, 3132-3138.
29. Reinhardt R.L., S.A. Norton, M. Handley, and A. Amirbahman, 2004, "Mobilization and Linkages among P, Al, and Fe during High Discharge Events at the Bear Brook Watershed in Maine, USA." *Water, Air and Soil Pollution: Focus*, 311-323.
30. Amirbahman A., P.L. Ruck, I.J. Fernandez, T.A. Haines, and J.S. Kahl, 2004, "The Effect of Fire on Mercury Distribution in the Soils of Forested Watersheds: Acadia National Park, Maine, USA." *Water, Air and Soil Pollution*, 152, 315-331.
31. Yelle D., B. Goodell, D. Gardner, A. Amirbahman, P. Winistorfer, and S. Shaler, 2004, "Bonding of Wood Fiber Composites Using a Synthetic Chelator-Lignin Activation System." *Forest Products Journal*, 54, 73-78.
32. Amirbahman A., A.R. Pearce, R.J. Bouchard, S.A. Norton, and J.S. Kahl, 2003, "Relationship between Hypolimnetic Phosphorus and Iron Release from Eleven Lakes in Maine, U.S.A." *Biogeochemistry*, 65, 369-386.
33. Amirbahman A., R. Schönenberger, G. Furrer, and J. Zobrist, 2003, "Experimental Study and Steady-State Simulation of Biogeochemical Processes in Laboratory Columns with Aquifer Material." *Journal of Contaminant Hydrology*, 64, 169-190.
34. Evans J.R., W.G. Davids, J.D. MacRae, and A. Amirbahman, 2002, "Kinetics of Cadmium Uptake by Chitosan-Based Crab Shells." *Water Research*, 36, 3219-3226.
35. Amirbahman A., A.L. Reid, T.A. Haines, J.S. Kahl, and C. Arnold, 2002, "Association of Methylmercury with Dissolved Humic Acids." *Environmental Science & Technology*, 36, 690-695.
36. Höhn E., C.A. Johnson, P. Huggenberger, A. Amirbahman, and H.R. Zweifel, 2000, "Investigative Strategies and Risk Assessment of Old Unlined Municipal Solid Waste Landfills." *Waste Management and Research*, 18, 577-589.
37. Amirbahman A., M. Gfeller, and G. Furrer, 2000, "Kinetics and Mechanism of Ligand-Promoted Decomposition of the Keggin Al<sub>13</sub> Polymer." *Geochimica et Cosmochimica Acta*, 64, 911-919.
38. Arnold C., A. Ciani, S. Müller, A. Amirbahman, and R.P. Schwarzenbach, 1998, "Association of Triorganotin Compounds with Dissolved Humic Acids." *Environmental Science & Technology*, 32, 2976-2983.
39. Amirbahman A., R. Schönenberger, C.A. Johnson, and L. Sigg, 1998, "Aqueous- and Solid-Phase Biogeochemistry of a Calcareous Aquifer Downgradient from a Municipal Solid Waste Landfill (Winterthur, Switzerland)." *Environmental Science & Technology*, 32, 1933-1940.

40. Amirbahman A., L. Sigg, and U. von Gunten, 1997, "Reductive Dissolution of Fe(III) (Hydr)oxides by Cysteine: Mechanism and Kinetics." *Journal of Colloid and Interface Science*, 194, 194-206.
41. Amirbahman A., and T.M. Olson, 1995, "Deposition Kinetics of Humic Matter-Coated Hematite in Porous Media in the Presence of Ca<sup>2+</sup>." *Colloids and Surfaces*, 99, 1-10.
42. Amirbahman A., and T.M. Olson, 1995, "The Role of Surface Conformations in the Deposition Kinetics of Humic Matter-Coated Colloids in Porous Media." *Colloids and Surfaces*, 95, 249-259.
43. Amirbahman A., and T.M. Olson, 1993, "Transport of Humic Matter-Coated Hematite in Packed Beds," *Environmental Science & Technology*, 27, 1807-1813.

#### **BOOK CHAPTER:**

Amirbahman A., and I.J. Fernandez, "The Role of Soils in Storage and Cycling of Mercury," in M.S. Bank (Ed.), *Mercury in the Environment: Pattern and Process*, University of California Press, Berkeley. Accepted for publication.

#### **CONFERENCES, PRESENTATIONS AND OTHER PUBLICATIONS:**

- Amirbahman A., L.E. Brown, M.A. Voytek, and C.Y. Chen, "Sedimentary mercury dynamics in Great Bay Estuary (NH)," invited paper presented at the AGU Fall Meeting, San Francisco, CA, December 2009.
- Ohno T., and A. Amirbahman, "Investigating soil organic matter processes using PARAFAC spectral decomposition of multidimensional fluorescence spectra," invited paper presented at the AGU Fall Meeting, San Francisco, CA, December 2009.
- Swett M.P., A. Amirbahman, and E. Boss, "Assessment of benthic flux of dissolved organic carbon in wetland and estuarine sediments using a the eddy-correlation technique," paper presented at the AGU Fall Meeting, San Francisco, CA, December 2009.
- Amirbahman A., and K.A. Merritt, "A diffusive gel gradient study of mercury mobilization in estuarine sediment pore waters," invited keynote presentation at the Second International DGT Conference, Sardinia, Italy, October 2009.
- Norton S.A., J. Kopáček, T. Navrátil, I.J. Fernandez, and A. Amirbahman, "Evolution of controls on phosphorus availability in aquatic ecosystems: peri-glacial to recent times," paper presented at BIOGEOMON, 6<sup>th</sup> Internal Symposium on Ecosystem Behavior, Helsinki, Finland, June 2009.
- Brown L.E., M.S. Swett, A. Amirbahman, M.A. Voytek, and C.Y. Chen, "Mercury and methylmercury dynamics in the sediments of the Great Bay (NH) and Penobscot River (ME) estuaries," paper presented at the Maine Water Conference, Augusta, ME, April 2009.
- Lake B.A., A. Amirbahman, and J. Saros, "Does paleolimnological evidence support the fish removal project in East Pond?" paper presented at the Maine Water Conference, Augusta, ME, April 2009.
- Amirbahman A., M.A. Voytek, C.Y. Chen, and L.E. Brown, "Cycling of mercury in the sediments of the Penobscot River (ME) and Great Bay (NH) estuaries," paper presented at the AGU Fall Meeting, San Francisco, CA, December 2008.
- Amirbahman A., "Mercury dynamics in estuarine sediments." Invited talk at the Department of Chemistry, Bowdoin College. Brunswick, ME, November 2008.
- Amirbahman A., M.A. Voytek, C.Y. Chen, and L.E. Brown, "Cycling of mercury species in estuarine sediments," paper presented at the SETAC North America 29<sup>th</sup> Annual Meeting, Tampa, FL, November 2008.
- SanClements M., I.J. Fernandez, S.A. Norton, A. Amirbahman, and L. Rustad, "Metal controls on forest floor and B horizon extractable phosphorus in forested watersheds," paper presented at the Soil Science Society of America Joint Annual Meeting, Houston, TX, October 2008.

- Amirbahman A., M.A. Voytek, C.Y. Chen, and L.E. Brown, "Mercury dynamics in the sediments of two New England (USA) estuaries," paper presented at the Conference on Chemodynamics of Ecosystems, Monte Verita, Ascona, Switzerland, October 2008.
- Amirbahman A., and K.A. Merritt, "Mercury in the Penobscot River estuary," in Maine Sea Grant Research in Focus Fact Sheet, August 2008, 4 pp.
- Norton S.A., A. Amirbahman, T. Wilson, and J. Kopáček, "Water chemistry of lake inlets and outlets as a predictor of sediment characteristics and internal cycling of phosphorus," paper presented at the Goldschmidt Conference, Vancouver, Canada, July 2008.
- Amirbahman A., K.A. Merritt, M.A. Voytek, and C.Y. Chen, "Methylmercury dynamics in the Penobscot River Estuary (Maine, USA) sediments," paper presented at the Maine Water Conference, Augusta, ME, April 2008.
- Diehl M.S., and A. Amirbahman, "Design and optimization of reactive thin-film membranes for studying mercury mobility and transformation in sediment porewater," paper presented at the Maine Water Conference, Augusta, ME, April 2008.
- Lake B.A., A. Amirbahman, and S.A. Norton, "How might global warming affect internal P cycling in Maine lakes," paper presented at the Maine Water Conference, Augusta, ME, April 2008.
- Amirbahman A., K.A. Merritt, M.A. Voytek, and C.Y. Chen, "Cycling of methylmercury in the sediments of the Penobscot River Estuary (Maine, USA)," Paper presented at the American Society of Limnology and Oceanography (ASLO), Ocean Sciences Meeting, Orlando, FL, March 2008.
- Voytek M.A., A. Amirbahman, C.S. Cockell, E.J.P. Jones, J.D. Kirshtein, T. Ohno, and W.E. Sanford, "Biogeochemical evidence for in situ microbial metabolism in the Chesapeake Bay impact structure," Geological Society of America Annual Meeting, Denver, CO, October 2007.
- Huntress D., S.A. Norton, M. Laird, and A. Amirbahman, "Spatial and Temporal changes in Aluminum, Iron and Phosphorus during Acidic Episodes at East Bear Brook, Maine USA," Gordon Research Conference (Catchment Science), NH, July 2007.
- Norton S.A., J. Kopáček, I. J. Fernandez, P. Porcal, A. Amirbahman, T. Wilson, B.A. Lake, M. SanClements, and D. Huntress, "Al-Fe-DOC-P Coupling in Forested Ecosystems," Gordon Research Conference (Catchment Science), NH, July 2007.
- Peckenham J.M., A. Amirbahman, and J.A. Nadeau, "Quantifying the Leaching of Nitrogen and Carbon from Class-B Biosolids Stockpiles," 4<sup>th</sup> Canadian Organic Residuals and Biosolids Management Conference, International Water Association, Moncton, NB, Canada, June 2007.
- Porcal P., A. Amirbahman, J. Kopáček, and S.A. Norton, "Photochemical release of humic and fulvic acid-bound metals in freshwater," 11<sup>th</sup> Nordic-Baltic Symposium of International Humic Substances Society, Functioning of NOM in Environment, Joensuu, Finland, June 2007.
- Amirbahman A., "Role of sediments in mercury sequestration, release and transformation in the lower Penobscot Bay." Invited talk at the annual Maine Sea Grant Advisory Board. University of Maine, Orono, ME, May 2007.
- Lake B.A., A. Amirbahman, and S.A. Norton, "Investigating Phosphorus Internal Loading in Maine Lakes using <sup>31</sup>P Nuclear Magnetic Resonance (NMR) Spectroscopy," Paper presented at the NEAEB conference, Burlington, VT, March 2007.
- Norton S.A., I.J. Fernandez, A. Amirbahman, K.M. Coolidge, and T. Navratil, 2006, "Aluminum, Phosphorus, and Oligotrophy – Assembling the Pieces of the Puzzle." *Proceedings of the International Society of Limnology (Verh. Internat. Verein. Limnol.)*, 29, 1877-1886.
- Merritt K.A., and A. Amirbahman, "Mercury Dynamics in Sulfide-Rich Sediments: Geochemical Influence on Contaminant Mobilization within the Penobscot River Estuary, Maine, USA," Paper presented at the AGU Fall Meeting, San Francisco, CA, December 2006.
- Amirbahman A., "Mercury release at the sediment-water interface." Invited talk at the Workshop on Fate and Bioavailability of Mercury in Aquatic Systems and Effect on Human Exposure. Dartmouth College, Hanover, NH, November 2006.

- Bank M.S., D.B. Senn, J.P. Shine, E. Chesney, N. Rabalais, J. Jay, J.B. Crocker, and A. Amirbahman, "Effects of Disturbance Mechanisms on the Distribution and Bioaccumulation of Mercury in the Conterminous United States and the Gulf of Mexico," Eighth International Conference on Mercury as a Global Pollutant, Madison, WI, August 2006.
- Merritt K.A., and A. Amirbahman, "Mercury Cycling in Sulfide-Rich Sediments: Contaminant Storage in the Penobscot River Estuary, Maine," Eighth International Conference on Mercury as a Global Pollutant, Madison, WI, August 2006.
- Lake B.A., A. Amirbahman, and S.A. Norton, "Factors contributing to the internal loading of phosphorus from anoxic sediments in nine Maine lakes with high DOC concentration," Annual Summer Meeting of the American Society of Limnology and Oceanography, Victoria, BC, June 2006.
- Porcal P., A. Amirbahman, J. Kopáček, and S.A. Norton, "Photochemical release of metal species in stream waters," BIOGEOMON, 5<sup>th</sup> Internal Symposium on Ecosystem Behavior, Santa Cruz, CA, June 2006.
- Norton S.A., K.M. Coolidge, A. Amirbahman, J. Kopáček, and R. Bouchard, "Speciation of Al, Fe, and P in recent sediment of three Maine lakes, USA," BIOGEOMON, 5<sup>th</sup> Internal Symposium on Ecosystem Behavior, Santa Cruz, CA, June 2006.
- Merritt K.A., and A. Amirbahman, "Mercury Cycling in the Penobscot River Estuary, Maine: The Role of Sulfide," Gordon Research Conference (Environment–Water), NH, June 2006.
- Lake B.A., A. Amirbahman, and S.A. Norton, "Internal loading of phosphorus from anoxic sediments in nine Maine lakes with high DOC concentration," Gordon Research Conference (Environment–Water), NH, June 2006.
- Amirbahman A., "Recovery of value from crustacean waste: production and assessment of an improved chitosan-based heavy metal adsorbent." Final project report to NOAA Saltonstall-Kennedy program, pp. 33, April 2006.
- Lake B.A., K.M. Coolidge, A. Amirbahman, S.A. Norton and R. Bouchard, "Factors contributing to the internal loading of phosphorus from anoxic sediments in six Maine lakes," 30<sup>th</sup> Annual Meeting of the New England Association of Environmental Biologists, Bethel, ME, March 2006.
- Peckenham J.M., J.S. Kahl and A. Amirbahman, "The impact of vehicle traffic on water quality in Acadia National Park." Technical Report NPS/NER/NRTR – 2006/035. National Park Service. Boston, MA. 56 pp., March 2006.
- Bank M.S., C. Loftin, J. Crocker, R. MacDonald, and A. Amirbahman, "Mercury, Stream Salamanders and Watershed Heterogeneity: Coping with a Risky Environment." Paper presented at the Maine Water Conference, Augusta, ME, April 2005.
- Merritt K.A., and A. Amirbahman, "Sources and Sinks: Sequestration and Transformation of Mercury (Hg) in the Penobscot Estuary." Paper presented at the Maine Water Conference, Augusta, ME, April 2005.
- Sandford T.C. and Amirbahman A., "Thermal Monitoring of Wet Pond in Maine." Transportation Research Board 84th Annual Meeting, Compendium of Papers CD-ROM (Peer-Reviewed), Washington, D. C., No. 05-1944, 25 pp., January 2005.
- Amirbahman A., D.B. Kent, G.P. Curtis, and J.A. Davis. Oxidation Kinetics of Arsenic(III) by Aquifer Material. Paper presented at the AGU Fall Meeting, San Francisco, CA, December 2004.
- Amirbahman A., Invited seminar, Department of Civil and Environmental Engineering, University of New Hampshire, October 2004.
- Amirbahman A., Invited seminar, U.S. Geological Survey, Water Resources Division, Menlo Park, CA, September 2004.
- Bank M.S., A. Amirbahman, T.A. Haines, and R.E. Jung. Mercury bioaccumulation in lotic salamanders: a review and assessment. Invited poster presentation presented at the 2004 USGS Mercury Conference, Reston, Virginia, August 17-18, 2004.
- Norton S.A., I.J. Fernandez, A. Amirbahman, K.M. Coolidge, and T. Navrátil, T. Aluminum and oligotrophy – Assembling the pieces of the model. 29th SIL Congress (International Association of Limnology), Lahti, Finland, August 8-14, 2004.

- Bank M.S., C.S. Loftin, A. Amirbahman, TA Haines, and R.E. Jung. Mercury bioaccumulation in lotic and lentic amphibians. Invited oral presentation at the 2004 Joint Meeting of Ichthyologists and Herpetologists, Norman, Oklahoma, May 31, 2004.
- Bank M. S., C. S. Loftin, and A. Amirbahman. 2004. Mercury bioaccumulation in green frog and bullfrog tadpoles from Acadia National Park, Maine. USGS Water Resources Institute/DAPTF Report.
- Merritt K.A., A. Amirbahman, and J.D. MacRae, Chlorsan membranes as a tool for monitoring the speciation and transport of mercury in estuarine sediment porewaters. The Maine Water Conference, Augusta, Maine, April 2004.
- Nadeau J.A., A. Amirbahman, and J.M. Peckenham, Field stacked biosolids trace metal mobility. Oral presentation at the Maine Water Conference, Augusta, Maine, April 2004.
- Peckenham J.M., J.A. Nadeau, and A. Amirbahman, Nitrogen Loss from the Controlled Field Stacking of Biosolids. Oral presentation at the Maine Water Conference, Augusta, Maine, April 2004.
- Bank M.S., C.S. Loftin, A. Amirbahman, J. Peckenham, and T.A. Haines. Mercury bioaccumulation in lotic and lentic amphibians from Acadia National Park, Maine. Oral presentation at the Maine Water Conference, Augusta, Maine, April 2004.
- Amirbahman A., Invited seminar, U.S. Geological Survey, Water Resources Division, Menlo Park, CA, February 2004.
- Bank M.S., C.S. Loftin, A. Amirbahman, J.M. Peckenham, T.A. Haines, and R. E. Jung. 2004 (Invited Seminar). Mercury bioaccumulation in lotic and lentic amphibians: Regional conservation implications for surface water ecosystems in the Northeastern United States. Presentation at the Gulf of Maine Research Institute Ecology Seminar Series, Portland, Maine, January 12, 2004.
- Bank M.S., C.S. Loftin, A. Amirbahman, J.M. Peckenham, and T.A. Haines (invited seminar), Mercury bioaccumulation in lotic and lentic amphibians: Regional conservation implications for aquatic ecosystems in the Northeastern United States. *Assessing the depositional, geological, and biological factors that control mercury deposition in aquatic ecosystems of northeastern North America* - USDA Northern Research Station, Northern States Research Cooperative Mercury Research Workshop, Portland, ME, December 2003.
- Coolidge K.M., A. Amirbahman, and S.A. Norton, Speciation of P between Al and Fe in sediment cores from three lakes in Maine (USA): Possible Al control on P availability. The 9<sup>th</sup> International Paleolimnology Symposium, Espoo, Finland, August 2003.
- Reinhardt R.L., S.A. Norton, M. Handley, and A. Amirbahman, Mobilization and Linkages Among P, Al, and Fe During High Discharge Events at the Bear Brook Watershed in Maine, USA. The BIOGEOMON Conference, Reading, United Kingdom, June 2002.
- Merrifield J.D., A. Amirbahman, and J.D. MacRae, 2002, Kinetics of Removal of Hg from Waste Streams by Thiol-Grafted Chitosan Gel Beads, Gordon Research Conference (Environment–Water), NH, June 2002.
- Merrifield J.D., A. Amirbahman, and J.D. MacRae, 2002, Removal of Mercury from Waste Streams by Modified Chitosan Gel, Maine Water Conference, Augusta, ME, May 2002.
- Kahl J.S., A. Amirbahman, J. Eckhoff, S. Evans, I.J. Fernandez, G. Jacobson, K. Johnson, M. Nelson, S.A. Norton, J. Peckenham, P.L. Ruck, M. Schauffler, and B. Wiersma, Establishing PRIMENet Paired Watersheds at Acadia National Park: The First 5 Years (1998-2002). Integrated final report to the EPA and USGS – BRD, April 2002.
- Sandford T.C., and A. Amirbahman, Temperature Monitoring of a Wet Pond Inlet and Outlet Water in Readfield, ME. Reports to the Maine Department of Transportation, 2001 and 2002.
- Amirbahman, A., Invited seminar, The US Environmental Protection Agency, Drinking Water Lab., Cincinnati, OH, May 2001.
- Amirbahman, A., Invited seminar, Department of Natural Resources, The Ohio State University, Columbus, OH, May 2001.
- Jellison, J., A. Ostrofsky, C. Fuller, and A. Amirbahman, Metal Transport and Toxicity in Brown Rot Fungi. 55<sup>th</sup> Annual Forest Products Society, Baltimore, MD, June 2001.

- Merrifield J.D., A. Amirbahman, and J.D. MacRae, Removal of Mercury using Modified Chitosan Beads. 3<sup>rd</sup> International Symposium on Chitin Enzymology and 4<sup>th</sup> Conference of the European Chitin Society, Senigallia, Italy, May 2001.
- Amirbahman A., A. Reid, T.A. Haines, and C. Arnold, Binding of Methylmercury to Humic Acids. 221<sup>st</sup> ACS National Meeting, Division of Environmental Chemistry, V. 41, no. 1, pp. 508-512, San Diego, CA, April 2001.
- Jellison, J., Goodell, B., Connolly, J., Shortle, W., Fuller, C., Ostrofsky, A., Jasalavich, A., Amirbahman, A., Filley, T., and Kelley, S., Fungal Biodegradation of Wood in Soil Contact. 221<sup>st</sup> ACS National Meeting, Division of Geochemistry, San Diego, CA, April 2001.
- Norton S., A. Pearce, A. Amirbahman and R. Bouchard, Is Al Chemistry the Key to Lake Trophic Status in Acid Rain-Sensitive Geologic Terrain? The Geological Society of America, Northeastern Section Conference, 36<sup>th</sup> Annual Meeting, March 2001.
- Furrer, G., Gfeller, M., Wehrli, B. and Amirbahman, A., Kinetics and Mechanism of Decomposition of the Keggin Al<sub>13</sub> Polymer. *International Workshop on Surface Chemical Processes in Natural Environments*. Monte Verità, Ascona, Switzerland, October 1-6, 2000.
- Pearce, R., Bouchard, R. and Amirbahman, A., Controls on Lake Phosphorous Release. *Lake Management into 21<sup>st</sup> Century: Unifying Theory and Practice*. Storrs, CT, June 2000.
- Ruck, P. and Amirbahman, A. Cycling and Speciation of Mercury in the Soil of Acadia National Park. Maine Water Conference, Augusta, ME, April 2000.
- Evans, J.R., MacRae, J. and Amirbahman A. Sorption of Cadmium onto Chitosan-Based Crab Shells: A Mass Transfer Study. Maine Water Conference, Augusta, ME, April 2000.
- Amirbahman, A., Invited seminar, Department of Civil and Environmental Engineering, San Diego State University, San Diego, CA, May 2000.
- Reid, A., Amirbahman, A. and Haines, T., 1999, Complexation of methylmercury by Peat Humic Acid. *Association of Environmental Engineering and Science Professors, Research Frontiers Conference*. University Park, PA.
- Reid, A., A. Amirbahman and T. Haines. Association of Methylmercury with Humic Acids. Maine Water Conference, Augusta, ME, April 1999.
- Amirbahman, A., M. Gfeller and G. Furrer. Decomposition Kinetics of Polymeric Al<sub>13</sub> by Organic Ligands. 212<sup>th</sup> ACS National Meeting, Division of Geochemistry, Anaheim, CA, March 1999.
- Amirbahman, A., Invited seminar, Institute of Terrestrial Ecology (ITÖ), Swiss Federal Institute of Technology (ETH-Zürich), August 1998.
- Arnold, C., A. Ciani, S. Müller, A. Amirbahman and R.P. Schwarzenbach. Adsorption of Triorganotin Compounds on Dissolved Humic Acids. Gordon Research Conference. New Hampton, NH, June 1998.
- Amirbahman, A., Invited seminar, Department of Earth and Environmental Engineering, Columbia University, New York, NY, May 1998.
- Amirbahman, A., Invited seminar, Department of Chemistry, Colby College, Waterville, ME, March 1998.
- Amirbahman, A., Invited seminar, Department of Chemistry, University of Maine, Orono, ME, February 1998.
- Amirbahman, A., R. Schönenberger, S. Mettler, L. Sigg and C.A. Johnson. Rolle von Eisenoxiden bei den Redoxreaktionen unterhalb einer Deponie. Jahresbericht 1997, EAWAG, Dübendorf, Switzerland.
- Amirbahman, A., U. von Gunten and L. Sigg. Reductive Dissolution Mechanism of Iron Oxides by Cysteine. 210<sup>th</sup> ACS National Meeting, Division of Geochemistry, San Francisco, CA, March 1997.
- Amirbahman, A., U. von Gunten and L. Sigg. Kinetics of Reductive Dissolution of Hydrous Ferric Oxide by Cysteine. Gordon Research Conference. New Hampton, NH, June 1996.
- McCarthy, J.F., B. Gu, L. Liang, T.M. Olson, A. Amirbahman, T.C.J. Yeh, and J. Mas-pla. Multicomponent Transport of Natural Organic Matter: Implications to Colloid and Contaminant Mobility, AGU Western Pacific Geophysics Meeting, Hong Kong, July 1994.
- Amirbahman, A. and T.M. Olson. Transport of Humic Matter-Coated Hematite in Packed Beds of Quartz: Role of Ca<sup>2+</sup>, 207<sup>th</sup> ACS National Meeting, Division of Environmental Chemistry, Vol. 34, No. 1, pp. 436-439, San Diego, CA, March 1994.

- Amirbahman, A. and T.M. Olson. Transport of Humic Matter-Coated Particles in Packed Beds: Effect of Molecular Size, EOS Transactions, Vol. 73, No. 43, AGU Fall Meeting, San Francisco, CA, December 1992.
- Amirbahman, A. and T.M. Olson. Deposition Kinetics of Humic-Coated Hematite in Packed Beds, ACS 66<sup>th</sup> Colloid and Surface Science Symposium, Morgantown, WV, June 1992.
- Olson, T.M., G.M. Litton, and A. Amirbahman. Colloid-Porous Media Interactions with Repulsive Energy Barriers. International Conference: Interfacial Phenomena in the Environment, EAWAG/ETH, Davos, Switzerland, October 1991.
- Olson, T.M., G.M. Litton, and A. Amirbahman. Colloid Transport in Porous Media with Repulsive Energy Barriers. ACS 65<sup>th</sup> Colloid and Surface Science Symposium, Norman, OK, June 1991.

#### **FUNDED PROJECTS:**

- Amirbahman, A., Bell, K.P., Bacon, L.C., Simon, K.S., Norton, S.A., and Fernandez, I.J., “Linking knowledge with action: Refining Maine’s mercury fish consumption advisory (Phase I).” Submitted to the NSF-EPSCoR. Total direct cost: \$60,000. Project date: November 2009 – June 2010.
- Amirbahman, A., Boss, E., Bergamaschi, B., and Downing, B., “Estimation of benthic dissolved organic carbon flux from wetland and estuarine sediments using a novel technique.” Submitted to the USGS-WRRI. Total direct cost: \$21,973 (+ 2:1 non-Federal match). Project date: March 2010 – February 2011.
- Amirbahman, A. “A sequential time-weighted average monitoring approach for monitoring pesticide levels in Maine surface waters.” Funded by the USGS-WRRI. Direct cost: \$20,000. Project date: March 2009 – February 2010.
- Amirbahman, A. “Use of a novel technique to assess the DOC benthic flux in the Penobscot River estuary, Maine.” Funded by the NOAA – Maine Sea Grant. Direct cost: \$3,500. Project date: June 2009 – August 2009.
- Amirbahman, A., MacRae, J.D., and Jain, S., “Enhancing student learning and involvement in environmental engineering research: Equipment needs.” Funded by the College of Engineering, University of Maine. Total cost: \$14,450 (including \$2,450 match) in 2007, and \$31,017 (including \$4,000 match) in 2009.
- Amirbahman, A. and Boss, E., “Assessing the horizontal distribution of benthic fluxes and pore-water concentrations of dissolved species in wetland sediments (Twitchell Island, California).” Funded by the U.S. Geological Survey. Total cost: \$45,000. Project date: January 2010 – December 2010. Funds withheld temporarily due to budget shortfall in the State of California.
- Amirbahman, A., and Voytek, M.A., “Using reactive thin-film membranes to determine mercury mobility and transformation in the Penobscot River estuary sediment, Maine.” Funded by the USGS-WRRI. Direct cost: \$9,800 (+2:1 non-Federal match). Project date: March 2008 – February 2009.
- Chen, C.Y., Amirbahman, A., and Voytek, M.A., “Mercury dynamics in estuarine sediments: Biogeochemical controls on bioavailability and bioaccumulation along a chemical gradient.” Funded by the NOAA-NH Sea Grant. Direct cost: \$185,000. Project date: March 2008 – February 2010.
- Amirbahman, A. “Measurement of methylmercury in the sulfidic sediments of the lower Penobscot River.” Funded by the NOAA – Maine Sea Grant and the Maine Department of Environmental Protection. Direct cost: \$4,500. Project date: June 2007 – July 2007.
- Amirbahman, A., Lake, B.A., Bishop, K., Norton, S.A., and Bouchard, R., “A <sup>31</sup>P NMR investigation of phosphorus speciation in sediments of two shallow lakes in Maine, USA.” Project funded by the USGS-WRRI. Direct cost: \$10,100 (+2:1 non-Federal match). Project date: February 2007 – January 2008.
- Amirbahman, A. “Monitoring mercury fluxes in estuarine sediment porewaters using novel reactive membranes.” Funded by the NOAA – Maine Sea Grant. Direct cost: \$37,318 (+ 0.5:1 non-Federal match). Project date: September 2005 – January 2007.

- Norton, S.A., Fernandez, I.J., and Amirbahman, A., “Abiotic controls on the trophic status of oligotrophic surface waters – Supplement” Funded by the NSF. Total cost: \$44,542. Project date: September 2005 – August 2007.
- Norton, S.A., Amirbahman, A., and Fernandez, I.J., “Abiotic controls on the trophic status of oligotrophic surface waters” Funded by the NSF. Total cost: \$850,135. Project date: September 2004 – August 2007.
- Fernandez, I.J., Norton, S.A., Amirbahman, A., Cosby, B.J., and Rustad, L., “Mechanisms governing changing metal and phosphorus dynamics in an experimentally acidified watershed in Maine” Funded by the NSF. Total cost: \$535,500. Project date: September 2004 – August 2007.
- Amirbahman, A., Peckenham, J.M., and Behr, R.S., “Metal mobilization from municipal biosolids stockpiles: The role of dissolved organic matter.” Funded by the USGS-WRRI, and the Maine Department of Environmental Protection. Direct cost: \$28,750 (+ 1:1 non-federal match). Project date: April 2004 – August 2005.
- Amirbahman, A., and MacRae, J.D. “Resource recovery from crustacean waste material: Production and assessment of chitosan-based heavy metal adsorbent.” Funded by the NOAA – Saltonstall-Kennedy. Total cost: \$66,990. Project date: August 2003 – January 2005.
- Amirbahman A., and Donahue, D., “Development of macroporous chitosan sorbent for the removal and detection of *E. coli*.” Funded by the Faculty R&D Grant at the University of Maine. Direct cost: \$8,300. Project date: February 2003 – December 2003.
- Amirbahman A., and Loftin, C.S., “Effects of local and landscape heterogeneity on mercury loadings in palustrine amphibians from Acadia National Park, Maine.” Funded by the USGS-WRRI. Direct cost: \$18,098 (+ 1:1 non-federal match). Project date: April 2003 – December 2004.
- Peckenham J.M., and Amirbahman, A., “Characterizing effluent flows from biosolids stockpiles.” Funded by the Maine Department of Environmental Protection. Total cost: \$189,965. Project date: September 2002 – August 2004.
- Peckenham J.M., and Amirbahman A., “Removal of heavy metals from road runoff using check dams with a wood chip core.” Funded by the Maine Department of Transportation. Project cost: \$10,023 as total cost. Project date: January 2002 – December 2002.
- Amirbahman A., “Prediction of the concentration of mercury in freshwater fish in Maine.” Funded by the Maine Department of Environmental Protection. Project cost: \$38,000 as direct cost. Project date: August 2001 - July 2002.
- Norton S.A., Amirbahman A., Kahl, J.S., and Bouchard, R.J., “Does Al geochemistry control the trophic status of oligotrophic lakes?” Funded by the USGS–NWRI. Project cost: \$119,894 as direct cost (+ 1:1 non-Federal match). Project date: September 2001 - August 2003.
- Goodell, B., and Amirbahman, A., “Mechanisms involved in non-enzymatic free radical production in brown rot fungi.” Funded by the USDA – Wood Utilization Research. Project cost: \$87,101 as total cost. Project date: September 2001 - August 2003.
- Peckenham J.M., Kahl, J.S. and Amirbahman A., “The impact of vehicle traffic on water quality in Acadia National Park.” Funded by the National Park Service. Project cost: \$49,900 as direct cost. Project date: June 2001 - May 2003.
- Amirbahman, A., “Cycling and speciation of mercury and methylmercury in the soil of Acadia National Park.” Funded by the USGS–WRRI. Project cost: \$50,942 as direct cost (+ 2:1 non-Federal match). Project date: September 1999 - August 2001.
- Amirbahman, A., “Cycling of phosphorus in Maine lakes.” Funded by the Maine Department of Environmental Protection. Direct cost: \$45,000. Project date: January 1999 – August 2000.

Amirbahman, A., and Haines, T.A., “Association of methylmercury with dissolved organic matter: Implications for bioaccumulation in Maine freshwater fish.” Funded by the USGS–WRRI. Direct cost: \$56,000 (+ 2:1 non-Federal match). Project date: September 1998 – August 2000.

Goodell, B., Amirbahman, A., Kemner, K. and Groom, L., “Ultrastructural investigations of wood in early degradation stages by wood decay fungi.” Funded by the USDA. Direct cost: \$108,000. Project date: July 1998 - June 2000.

**EDITORIAL RESPONSIBILITIES:**

Reviewed funding proposals for the NSF (educational and research proposals; review panel and individual proposals), DOE (review panel and individual proposals), USGS, USDA, Petroleum Research Fund, Environmental Research and Education Foundation, Ohio Sea Grant, Minnesota Sea Grant, Woods Hole Oceanographic Institute Sea Grant, Wisconsin Department of Environmental Conservation, City University of New York System, and Massachusetts Water Resources Research Center.

Chaired the session on “Mercury, Endocrine Disruptors, and Other Emerging Contaminants” at the Maine Water Conference, Augusta, ME, April 2005.

Reviewed 84 scientific articles since 1998 for:

<i>Environ. Sci. Technol.</i>	<i>J. Colloid Interface Sci.</i>	<i>Geochim. Cosmochim. Acta</i>
<i>J. Environ. Engin. (ASCE)</i>	<i>Water Res.</i>	<i>Limnol. Oceanogr.</i>
<i>Water Resour. Res.</i>	<i>J. Environ. Qual.</i>	<i>Langmuir</i>
<i>Appl. Geochem.</i>	<i>Colloid. Surf.</i>	<i>Biogeochem.</i>
<i>Separat. Purificat. Technol.</i>	<i>Chem. Engin. Res. Design</i>	<i>Environ. Toxicol. Chem.</i>
<i>Transp. Porous Media</i>	<i>J. Chem. Technol. Biotechnol.</i>	<i>Environ. Monit. Assess.</i>
<i>ACS Symp. Monograph 2001</i>	<i>Sedimentary Geol.</i>	<i>Chemosphere</i>
<i>Marine Chem.</i>	<i>Estuarine Coastal Shelf Sci.</i>	<i>Water Air Soil Pollut.</i>
<i>Water Environ. Res.</i>	<i>Environ. Pollut.</i>	<i>J. Contam. Hydrol.</i>
<i>Sci. Total Environ.</i>	<i>Environ. Chem.</i>	<i>J. Waterway Port Coastal Ocean Engin. (ASCE)</i>
<i>J. Appl. Microbiol.</i>	<i>Marine Environ. Res.</i>	

## RESEARCH GROUP:

### Postdoctoral Scholar

1. Petr Porcal, Ph.D., Fulbright Postdoctoral Scholar from the Czech Republic (10/05-06/06): "Effect of UV light on precipitation of Al and Fe hydroxides in high DOC lakes." Co-supervised with S.A. Norton.

### Graduate students at UMaine; Served as the major thesis advisor

2. Bjorn A. Lake (2005-present), Ph.D. dissertation (in progress): "Abiotic controls on the trophic status of oligotrophic lakes."
3. Zhong Pan, (2008-present), Ph.D. dissertation (in progress): "Aluminum: From the mountain to the sea."
4. Dustin Johnson (2009-present), MS thesis: "Effect of irradiation on the cycling of aluminum, iron and phosphorus in high-DOC surface waters." Co-advised with A.A. Olsen.
5. Michael P. Swett, (2008-present), M.S. thesis (in progress): "Assessing fluxes of dissolved organic matter from wetland sediments."
6. Lauren E. Brown (2007-present), M.S. thesis (in progress): "Mercury dynamics in estuarine sediments along a chemical gradient."
7. David W. Huntress (2006- 2008), MS thesis: "Mobilization of aluminum and phosphorus during high discharge events in forested streams." Co-advised with S.A. Norton.
8. Karen A. Merritt (2003-2007), Ph.D. dissertation: "Mercury dynamics in sulfide-rich sediments: Geochemical influence on contaminant mobilization and methylation within the Penobscot River estuary, Maine, USA."
9. Brett C. Holmes (2005-2007), MS thesis: "Metal and phosphorus dynamics in acidified forest soils."
10. Michelle D. Hersey (2003-2006), MS thesis: "Oxidation of arsenic(III) by chelator-enhanced Fenton reaction."
11. Kyle M. Coolidge (2002-2004), MS thesis: "Phosphorus cycling in Maine lakes: A sedimentary analysis."
12. Ran Liu (2001-2003), MS thesis: "Electrochemical study of interaction of copper and model fungal secreted ligands."
13. John D. Merrifield (2000-2002), MS thesis: "Synthesis and characterization of thiol-grafted chitosan gel beads for mercury removal."
14. Philip L. Ruck (1999-2002), MS thesis: "Cycling and speciation of mercury in soils at Cadillac Brook and Hadlock Brook watersheds, Acadia National Park, Maine."

15. Andrea R. Pearce (1999-2000), MS thesis: “Cycling of phosphorus in Maine lakes: A geochemical study.”
16. Johanna R. Evans (1998-2000), MS thesis: “Cadmium uptake by crab shell chitosan: A mass transfer study.”
17. Andrew L. Reid (1998-2000), MS thesis: “Association of methylmercury with dissolved humic substances.”

Past and present graduate students at UMaine; Served as a thesis committee member

1. Lucner Charlestra (2006-present; Ecology and Environmental Science; Ph.D.)
2. Jennifer Weldon (2005-present; Civil and Environmental Engineering; Ph.D.)
3. Michael Sanclements (2005-2009; Soil Science; Ph.D.)
4. Amer Al Abdel Hamid (2006-2009; Chemistry; Ph.D.)
5. Yuhui Qian (2004-2008; Wood Science; Ph.D.)
6. Sonia Aziz (2003-2007; Resource Economics and Planning; Ph.D.)
7. Thomas Woodcock (1998-2002; Biological Sciences; Ph.D.)
8. Gang Xu (1999; Wood Science; Ph.D.)
9. Carmen Daggett (2009-present; Biological Sciences; M.S.)
10. Douglas Cahl (2009-present; Physics; M.S.)
11. Tiffany Wilson (2005-2008; Ecology and Environmental Science; M.S.)
12. Mollie K. Laird (2004-2006; Earth Sciences; M.S.)
13. Heather V. Goss (2004-2006; Earth Sciences; M.S.)
14. Eric Para (2004-2006; Civil and Environmental Engineering; M.S.)
15. Lucner Charlestra (2003-2005; Ecology and Environmental Science; M.S.)
16. Jennifer Weldon (2002-2005; Civil and Environmental Engineering; M.S.)
17. Michael Glessner (2003-2005; Plant, Soil and Environmental Sciences; M.S.)
18. Katherine Sheehan (2002-2005; Ecology and Environmental Science; M.S.)
19. Raquel Reinhardt (2001-2004; Ecology and Environmental Science; M.S.)
20. Kevin McCaffrey (2000-2002; Civil and Environmental Engineering; M.S.)
21. Daniel Yelle (1999-2001; Wood Science; M.S.)
22. Duan Hui (2000-2001; Wood Science; M.S.)
23. Steven Bauer (1999-2001; Biological Sciences; M.S.)
24. Rebecca Pollis (1997-1999; Civil and Environmental Engineering; M.S.)
25. Oh-Kyu Lee (1998; Wood Science; M.S.)
26. Kevin Trainor (2008; Civil and Environmental Engineering; Honor’s Thesis)

Undergraduate students who performed research in my lab at UMaine

1. Mikaela Martin, 2/06-6/07 (Honor’s College thesis – Lake hypolimnetic P release)
2. Janet Southwick, 5/05-9/06 (Field sampling and analysis of lake water and sediment)
3. John Chandler, 5/05-12/05 (Metal transport in packed beds of chitosan beads)
4. Benjamin Bosse, 10/03-5/04 (Development of chitosan membranes for Cd uptake)
5. April Power, 9/03-12/03 (Senior Project in Physics)
6. Ryan Bouchard, 9/03-12/03 (Physical characterization of estuarine sediments)
7. Jessica Deane, 8/03-12/03 (Development of chitosan membranes for *E. Coli* removal)
8. Angela Ferran, 5/03-8/03 (Development of chitosan membranes for *E. Coli* removal)

9. Mahendra Gautam, 5/03-8/03 (Phosphorus and metal extractions in lake sediments)
10. Kristin Jean, 1/03-5/03 (Development of chitosan beads for *E. Coli* removal)
11. John Leso, 9/02-5/03 (Phosphorus and metal analysis in lake sediments)
12. Kimberly Crouse, 1/00-6/00 (Soil preparation for mercury analysis)
13. George Maung, 1/00-6/00 (Phosphorus and metal analysis in lake sediments)
14. Dana Johnson, 8/99-12/99. (Soil preparation for mercury analysis)
15. Andrew Fisk, 5/99-12/99. (Metal adsorption to biosorbents)
16. Eric Love, 5/99-10/99. (Field sampling and phosphorus analysis of lake sediments)

**Theses co-advised at the Swiss Federal Institute for Environmental Science and Technology (EAWAG/ETH-Zürich):**

Mettler, S., 1997, "Quantification of the Reactivity of Natural Iron Oxides" (in German). pp. 70. Diploma Thesis in Environmental Sciences, Swiss Federal Institute of Technology, Zürich (ETHZ). Co-advised with Prof. Laura Sigg.

Rossier, J. S., 1996, "Partitioning of Tributyltin and Triphenyltin into Two Commercial Humic Substances: Characterization and Application of a Method of Quantification Based on Equilibrium Dialysis Studies". pp. 50. Diploma Thesis in Environmental Sciences, Swiss Federal Institute of Technology, Zürich (ETHZ). Co-advised with Prof. Rene Schwarzenbach.

**PROFESSIONAL AFFILIATIONS:**

American Chemical Society, American Geophysical Union, Geochemical Society, American Society of Limnology and Oceanography, and Association of Environmental Engineering and Science Professors.

**ACADEMIC GOVERNANCE:**

Departmental committees:

- Member/Chair of the Civil Engineering Curriculum Committee (1998-present)
- Member of the ABET Review Committee (1999, 2006)
- Secretary of the Civil Engineering Alumni Association (1999-present)
- Member of the Departmental Peer Committee (2003-present)
- Member of Faculty Search Committees (1998, 2005 (served as the chair), 2008)
- Member of the College of Engineering Associate Dean Search Committee (2007)
- Member of Postdoctoral Search Committee (2007)

University committees:

- College Representative on the Academic Program Prioritization Working Group (2009-present)
- Member of the Faculty Senate (2004-07)
- Member of the Faculty Senate Executive Committee (2006-07)
- Co-chair of the Faculty Senate Academic Affairs Committee (2006-07)
- Member of the Faculty Senate Research and Service Committee (2005-06)
- Member of the Faculty Senate Environment Committee (2004-05)
- New Faculty Mentor (2004-05; 2008-09)
- Member of the Advisory Board of the Sawyer Environmental Chemistry Research Lab (2003-present)

**OTHER PROFESSIONAL ACTIVITIES:**

The following professional activities were undertaken on a pro bono basis:

Advised the Highland Lake Association, ME, on matters regarding the trophic status of the lake (1997 – 2004).  
Contact person: Dr. Keith Williams.

Advised the environmental consulting firm, Civil Engineering Services, Inc., Brewer, ME, on precipitation of calcite in drinking water pipes in Baileyville, ME (01/2001). Contact person: Mr. Paul L. Jacques

Advised and performed chemical speciation calculations for the Maine DEP on the proposed controversial site of the new Wal-Mart store on Penjajwok stream and wetland in Bangor, ME (02/2002). Contact person: Mr. Jeffrey Dennis.

Advised the environmental consulting firm, Earth Tech, Inc., MA, on transport of a conservative dye and aluminum through a packed bed of chitin-based crab shells (03/2002). Contact person: Mr. Andrew L. Reid.

Advised the environmental consulting firm, Emery & Garrett Groundwater, Inc., Augusta, ME, on redox speciation calculations in groundwater downgradient from an industrial sludge application site (08/2002).  
Contact person: Dr. Peter Garrett.

Advised the nutritional consulting firm, Animal Power Source, Inc., Miami, FL, on the speciation and availability of several metals (Hg, As, Fe and Pb) in a sample of “humic sea minerals” (2003 and 2005). Contact person: Dr. Carlos Cortelezzi.

Advised the seafood technologies and products company, Saltwater Marketing, Portland, ME, on the chemical processes involving the deactelylation of chitin to chitosan to be used as additive in pet food (2005). Contact person: Mr. Andrew Molloy.

Advised the environmental consulting firm, Earth Tech, Inc., ME, on Pb removal from industrial wastewater using chitosan gel beads (2005). Contact person: Mr. Steven Couture.

Advised the Maine DEP on the efficacy of Al treatment and the speciation of Al and P in the sediments of Toothaker Pond, ME (2005). Contact person: Mr. Roy Bouchard.

Advised the environmental consulting firm, Civil Engineering Services, Inc., Brewer, ME, on water quality issues downgradient from the landfill in Presque Isle, ME (03/2006). Contact person: Mr. Denis St. Peter.

Advised the Down East Institute for Applied Marine Research and Education, Machias, ME, on treatment of waters subjected to salt intrusion (07/2006). Contact person: Ms. Mary Ann Clancy.

Advised the City of Brewer Water Treatment Plant on the location of a new source water intake (04/2007).  
Contact person: Mr. Michael Riley.

Advised the Kennebec County Soil and Water Conservation District on the use of alum residuals for phosphorus removal purposes (2008-present). Contact person: Mr. James Hart.

Advised Oceans Wide and Parson & Drum, LLC, on mercury cleanup issues in the Gulf of Maine (2009-present).