

CURRICULUM VITAE

Yong Cai

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EDUCATION

- 1986 - 1989 Ph.D., Environmental Chemistry, Department of Environmental Sciences, Nankai University, 300071 Tianjin, P.R. China. Thesis Title - Occurrence, transport, and transformation of organotin compounds in Tianjin Harbor, China.
- 1983 - 1986 M.S., Environmental Chemistry, Department of Environmental Sciences/Department of Chemistry, Nankai University, 300071 Tianjin, P.R. China. Thesis Title - Method development for organotin compounds analysis in environmental samples.
- 1978 - 1982 B.Sc., Chemistry, Department of Chemistry, Ocean University of Qingdao.

EXPERIENCE

- 2003 - Present Associate Professor, Graduate Program Director, Department of Chemistry & Biochemistry and Southeast Environmental Research Center, Florida International University, Miami, FL 33199.
- 1997 - 2003 Assistant Professor, Department of Chemistry and Southeast Environmental Research Center, Florida International University, Miami, FL 33199.
- 1995 - 1997 Research Associate, Southeast Environmental Research Program, Florida International University, Miami, FL 33199.
- 1993 - 1995 Research Associate, Environmental Chemistry Department, Consejo Superior de Investigaciones Cientificas, Centro de Investigacion y Desarrollo (C.I.D. - C.S.I.C.), Barcelona, Spain.

1989 - 1993	Post-Doctoral Research Fellow, Biogeochemistry Department, Max Planck Institute for Chemistry, Mainz, Germany.
1986 - 1989	Ph.D. Student, Department of Environmental Sciences, Nankai University, Tianjin, P.R. China.
1986 - 1989	Lecturer, Department of Environmental Sciences, Nankai University, Tianjin, P.R. China.
1983 - 1986	M.S. student, Department of Environmental Sciences/Department of Chemistry, Nankai University, Tianjin, P.R. China.
1982 - 1983	Laboratory Technician, Pingdu Bureau of Environmental Protection, Shandong Province, P.R. China.

Other Professional Experiences/Positions

2006-2008	Member, International Committee of International Society of Trace Element Biogeochemistry
2005-present	Guest Professor, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences
2004-present	Honors Research Affiliate, The Honors College, Florida International University
2003-present	Center Investigator, NIEHS Marine & Freshwater Biomedical Sciences Center, University of Miami
2003-present	Graduate Faculty of Florida International University
2002-present	Affiliated faculty member, Department of Environmental Studies, Florida International University

HONORS, PRIZES, FELLOWSHIPS

- Florida International University Faculty Award for Excellence in Research, 2005
- Florida International University Matriculation merit Award, 2001
- Fellowship of the Ministry of Education and Sciences, Spain, Feb.1993-Feb. 1995
- Max-Planck-Gesellschaft (Max-Planck-Society) Post-Doctoral Research Fellowship, Nov. 1989-Feb. 1993
- Shixian Yang Prize for Outstanding Ph.D. Student, 1988

MEMBERSHIPS

1995- Present	American Chemistry Society
1995-1997	American Geophysical Union
1996-1997	American Association for Advancement of Science

2001- Present Society of Environmental Toxicology and Chemistry

TEACHING

Courses taught at FIU

- General Chemistry Lab, Fall 1996.
- Hyphenated Analytical Techniques, Fall 1997.
- Modern Analytical Chemistry, Spring 1998; Spring 2001.
- Sampling and Chemometrics, Fall 1998.
- Modern Analytical Lab,
- Graduate Analytical Method (CHM 5150),
- Instrumental Analysis, normally once a year
- Advanced Analytical Chemistry, normally once every two years since 1999
- Introduction to Analytical Chemistry Lab, Summer 2004
- Undergraduate Research (CHM-4910L), most of the semesters since Fall 1997
- Undergraduate Research 2 (CHM-4911L), some of the semesters since Fall 1997
- Under graduate Independent Study in The Department of Environmental Studies (EVR 4905), since summer 2003.
- Graduate Research in Chemistry (CHM 6910L),
- Thesis Research (CHM-6970), Every semester since Fall 1997
- Master's Thesis (CHM-6971), some of the semesters since Fall 1997
- Dissertation Research (CHM-7910), every semester since Fall 1999
- Ph. D. Dissertation (CHM-7980), every semester since Fall 1999

Course and Curriculum Development Activities

Three graduate courses, namely Hyphenated Analytical Techniques, Sampling and Chemometrics, and Advanced Analytical Chemistry were developed and taught.

Modern Analytical Lab (CHM 4130L) was modified and new experiments were added.

Graduate Student Supervision

Ph.D:

Weihua Zhang	1999-2004. "Mechanistic study of arsenic uptake, transformation and tolerance in arsenic hyperaccumulator <i>Pteris vittata</i> ". (Major Professor).
Zhangrong Chen	2002-2006. "Colloid-facilitated arsenic transport and speciation in porous soil media" (Major Professor).
Yuxiang Mao	Fall 2004-, "Occurrence, transport and transformation of organomercury in the Florida everglades" (Major Professor).

- Lucy Yehiayan Spring 2006-, “The interactions of different arsenic species with thiols: chemical and biological implications” (Major Professor).
- Sen Chen Fall 2006-, “Reduced organic sulfur: speciation and interaction with mercury in the aquatic environment.” (Major Professor).
- Dionne Dickson Fall 2007-, “The effects of engineered iron nanoparticles on the transformation and fate of arsenic in aquatic environment”. (Major Professor).

MS:

- Sugunya Monsalud 1997-1999. “Determination of organomercury compounds in environmental and biological samples by using derivatization and gas chromatographic detection”. (Major Professor).
- Maria Sheils 1999-2002 “Characterization and interactions of mercury, dissolved organic matter and organic sulfur in surface waters of the Florida Everglades”. (Major Professor).
- Jinhui Su 2000-2002 “Low molecular weight thiols in arsenic hyperaccumulator, *Pteris vittata*, upon exposure to arsenic and other trace elements” (Major Professor).
- Myrin Georgiadis 2001-2004 “Arsenic speciation in soils and sediments” (Major Professor).
- Prabhkar Pant 2002-2003 “Natural attenuation of trichloroethene: in-stream behavior, fate and transport” (Co-advisor).
- Marnie Billie 2000-, “Trace metals in Feathers of Osprey population in The Everglades National Park”. (co-advisor).
- Julio Cabrera 2002-, “Mercury speciation and transport in mercury contaminated soils from Oak Ridge National Laboratory (ORNL). (Major Professor)
- Katia Guanira 2002-2003. Left from the program in 2003 because of sickness. (Major Professor)
- Sheena Szuri 2003-, “Improving arsenic uptake from soils by the hyperaccumulating plant *pteris vittata L.* through soil amendments.’ (Major Professor)

Undergraduate Student Supervision

- Jesse Hidalgo Spring 1998 - Summer 1998, “Application of large volume injection for organomercury analysis”.
- David Ventriere Fall 1997 – Summer 1998, “Occurrence of mercury in the canals around the Miami International airport”. & “

	Comparison of the methods for extraction of organomercury from invertebrate”.
Christina Romanach	Spring - Summer 1998, “Simultaneous determination of organometallic compounds using derivatization reaction followed by GC/MS and GC/AED detection”.
Rick Irizarry	Summer 1998, “Selenium determination by AFS”.
Joseph Moore	Fall 1998 – Summer 1999, “A comprehensive study of AFS for selenium analysis in biological samples”.
Myron Georgiadis	Spring 1999, “Arsenic concentrations in Seagrass of Florida Bay”.
Isabel Menchaca	Summer 1999 - , “Simultaneous determination of organo-mercury, lead, and tin using GC-AED”.
Kim Sarkies	Fall 1999 – Summer 2000, “Mercury and selenium concentrations in invertebrates in the Florida Everglades”.
Julio Cabrera	Summer 2000 - , “Fate and transport of arsenic species in the soils of South Florida golf courses”
Gustavo Gonzalez	Fall 2000 - , “Arsenic and phosphorus in water and sediment samples from Florida Bay”
Sheena Powell	Spring 2002- December 2002, “Equilibrium dialysis as viable analytical technique to study the fate transport of arsenic leached from CCA-treated wood”.
Jill Schrlau	Summer 2002-Summer 2003, “Arsenic transport and transformation associated with MSMA application on a golf course green”.
Terry Pitman	Summer 2003, Department of Environmental Studies (working at RSMAS UM with Lora Fleming), “Overview of the environmental health effects of harmful algal blooms”.
Damaris Hernandez	Summer 2003-Summer 2008, “A study of arsenic speciation in rainwater leaching of pond ash from the Savannah River site”.
Alejandro Jaramillo	Summer 2004-Fall 2004, “The effects of organic matter and colloids on the adsorption of arsenic to golf course soil-water systems”.
Carlos Zuniga	Summer 2004-Spring 2005, “Arsenic speciation in Alga <i>Nostoc</i> ”.
Raidel Figueroa	Summer 2004-Spring 2005, “Total arsenic concentration in traditional Chinese medicinal herbs via ICP/MS.”
Sandra Zapata	Summer 2005-Fall 2005, “Comparisons of techniques for mercury analysis in water samples.”
Robyn Thompson	Fall 2005-Summer 2006, “The effects of soil parameters on the adsorption of arsenic species to gardening and high organic content soils.”
Elys Viera	Spring 2007-Summer 2008, “The presence of methylmercury in cooked and uncooked Fish”.

Aymara Fernandez	Spring 2007-Summer 2008, “Evidence for the binding arsenite to dissolved metal humate”
Cristina Diez-Rivas	Summer 2007-Spring 2008, “Pilot study of mobility of arsenic, chromium, and copper from soil column”.
Ivy Fernandez	Summer 2007-Spring 2008, “Heavy metals contamination of herbal supplements”.
Nelly Membreno	Spring 2008-Present, “method development for arsenic speciation in biological samples”.

High School Student Research Supervision

The following high school students worked/studied in my lab through Miami-Dade County Public School Advanced Academic Internship Program

Xiaolong Zhou	Fall 1999 – Summer 2001 “Determination of trace metals in soils from the Florida Everglades using ICP-MS”. 2002 US Presidential Award winner.
Amy Cruzeta	Fall 2001 – Summer 2002 “Determination of organic acids in Brake fern using capillary electrophoresis”
Loumarie Colon	Fall 2003 – “Arsenic phytoremediation using <i>P. vittata</i> from fly ash”

PUBLICATIONS

BOOKS

1. **Yong Cai** and Olin Braids, Editors, “Biogeochemistry of Environmentally Important Elements”. ACS Symposium Series 835, American Chemical Society, Washington, DC. Oxford University Press, 2002.

REFERRED PUBLICATIONS

(FIU students or Post-Doc supervised by Yong Cai are underlined)

1. Yuxiang Mao, Guangliang Liu, George Meichel, **Yong Cai**, and Guibin Jiang, 2008. Simultaneous speciation of mono-methyl mercury and mono-ethyl mercury by aqueous phenylation and purge-and-trap preconcentration followed by atomic spectrometry detection. *Analytical Chemistry*. Online available at <http://pubs3.acs.org/acs/journals/toc.page?incoden=ancham&indecade=0&involume=0&inissue=0>
2. Zhangrong Chen, **Yong Cai**, Guangliang Liu, Helena Solo-Gabriele, George H. Snyder, John L. Cisar, 2008. Role of Soil-derived Dissolved Substances in Arsenic Transport and Transformation in Laboratory Simulation Experiments. *Science of the Total Environment*. In Press.

3. Prabhakar Pant, Marshall Allen, **Yong Cai**, Krishnaswamy Jayachandran, **2008**. Design and performance of a mesocosm chamber for trichloroethylene evaporation study. *Water, Air, and Soil Pollution*. 193, 3-13.
4. Weihua Zhang, Robert J. Alvarado, **Yong Cai**, Konstantinos Kavallieratos. **2008**. Probing Pb(II)-sulfonamide complexation via *in situ* adduct formation by ESI-MS. *Rapid Communications in Mass Spectrometry*. Submitted.
5. Guangliang Liu, **Yong Cai**. **2008**. Complexation and Adsorption of Arsenite in a Ternary System Involving Natural Sand-Solution-Dissolved Organic Matter. *Geochimica et Cosmochimica Acta*. Submitted.
6. Guangliang Liu, **Yong Cai**, Peter Karla, Daniel Scheidt, Thomas Philippi, Peter Kalla, Jennifer Richards, Leonard Scinto, Evelyn Gaiser, and Charlie Appleby. **2008**. Mercury Mass Budget Estimates and Cycling Seasonality in the Florida Everglades. *Environ. Sci. Technol.* 42, 1954-1960.
7. Guangliang Liu, **Yong Cai**, Thomas Philippi, Peter Kalla, Daniel Scheidt, Jennifer Richards, Leonard Scinto, and Charlie Appleby. **2008**. Distribution of Total and Methyl Mercury in Different Ecosystem Compartments in the Everglades: Implications for Mercury Accumulation. *Environmental Pollution*. 153, 257-265.
8. Helena Solo-Gabriele, Timothy Townsend, Bernine Kahn, Brajesh Dubey, Jenna Jambeck, and **Yong Cai**. **2008**. Comment on “Evaluating landfill disposal of chromated copper arsenate (CCA) treated wood and potential effects on groundwater: Evidence from Florida” by Jennifer K. Saxe, Eric J. Wannamaker, Scott W. Conklin, Todd F. Shupe and Barbara D. Beck [Chemosphere 66 (3) (2007) 496–504]”. *Chemosphere*. 70, 1930-1931.
9. Guangliang Liu, Yong Cai. 2007. Arsenic speciation in soils, an analytical challenge for understanding arsenic biogeochemistry. In *Developments in Environmental Sciences, Vol. 5*. Eds: D. Sarkar, R. Datta, and R. Hanningan, Elsevier, PP685-708.
10. Tielian Xu, Prashant V. Kamat, Sachin Joshi, Alexander M. Mebel, **Yong Cai**, Kevin E. O’Shea. **2007**. Hydroxyl Radical Mediated Degradation of Phenylarsonic Acid. *Journal Physical Chemistry A*, 111, 7819-7924.
11. Tielian Xu, **Yong Cai**, Kevin E. O’Shea. **2007**. Adsorption and photocatalyzed oxidation of methylated arsenic species in TiO₂ suspensions. *Environ. Sci. Technol.* 41, 5471-5477.
12. Bernine Khan, Helena M. Solo-Gabriele, Jenna Jambeck, Timothy G. Townsend, and **Yong Cai**, **2007**. Response to Comment on “Release of Arsenic to the Environment from CCA-Treated Wood: Part II – Leaching and Speciation during Disposal”. *Environ. Sci. Technol.* 41, 347-348.
13. Prabhakar Pant, Marshall Allen, **Yong Cai**, Krishnaswamy Jayachandran, Yin Chen. **2007**. Influence of Physical Factors on Trichloroethylene Evaporation from Surface Water. *Water, Air, and Soil Pollution*. 183, 153-163.
14. **Yong Cai**, Guangliang Liu, **2005**. Biogeochemical cycling of arsenic and mercury, In *Advances in Environmental Chemistry*, Editor: Shugui Dai, Chemical Industry Press, Beijing China. pp. 209-246.
15. Tomoyuki Shibata, Helena Solo-Gabriele, Lora Fleming, **Yong Cai**, and Timothy Townsend. **2007**. A mass balance approach for evaluating Leachable arsenic and

- chromium from an in-service CCA-treated wood structure. *Science of the Total Environment*. 372, 624-635.
16. Guangliang Liu, Julio Cabrera, Marshall Allen, and **Yong Cai**. 2006. Mercury characterization in a soil sample collected nearby the DOE Oak Ridge Reservation utilizing sequential extraction and thermal desorption method. *The Science of Total Environment*. 369, 384-392.
 17. Zhangrong Chen, **Yong Cai**, Helena Solo-Gabriele, George H. Snyder, John L. Cisar, 2006. Interactions of Arsenic and the Dissolved Substances Derived from Turf Soils. *Environ. Sci. Technol.* 40, 4659-4665.
 18. **Yong Cai**, Helena Solo-Gabriele; Timothy Townsend; Bernine Khan; Myron Georgiadis; and Brajesh Dubey, 2006. Elemental Speciation and Environmental Importance Associated with Wood Treated with Chromated Copper Arsenate. In *Environmental Impacts of Treated Wood*, Chapter 7. Townsend and Solo-Gabriele Eds. Taylor & Francis, Boca Raton, pp117-137.
 19. **Yong Cai**, Min Feng, Jill E. Schrlau, George H. Snyder, Ming Chen, John L. Cisar, and Raymond Snyder, 2006. Response to Comment on Arsenic Transport and Transformation Associated with MSMA Application on a Golf Course Green. *Journal of Agricultural and Food Chemistry*, 54, 2438-2440.
 20. Weihua Zhang, **Yong Cai** and Konstantinos Kavallieratos, 2006. Investigation of disulfonamide ligands derived from o-phenylenediamine and their Pb(II) complexes by electrospray ionization mass spectrometry. *Rapid Communications in Mass Spectrometry*. 20, 303-308.
 21. Myron Georgiadis, **Yong Cai**, Helena M. Solo-Gabriele. 2006. Extraction of Arsenate and Arsenite Species from Soils and Sediments. *Environmental Pollution*. 141, 22-29.
 22. Bernine Khan, Jenna Jambeck, Helena M. Solo-Gabriele, Timothy G. Townsend, and **Yong Cai**, 2006. Release of Arsenic to the Environment from CCA-Treated Wood: Part II – Leaching and Speciation during Disposal. *Environ. Sci. Technol.* 40, 988-993.
 23. Bernine Khan, Jenna Jambeck, Helena M. Solo-Gabriele, Timothy G. Townsend, and **Yong Cai**, 2006. Release of Arsenic to the Environment from CCA-Treated Wood: Part I – Leaching and Speciation during Service. *Environ. Sci. Technol.* 40, 994-999.
 24. Weihua Zhang, **Yong Cai**. 2005. Metal tolerance in plants: the roles of thiol-containing peptide. *Water Encyclopedia: Surface and Agricultural Water*, Eds. Jay Lehr and Jack Keeley. Pp 609-615.
 25. Tomoyuki Shibata, Helena M. Solo-Gabriele, Lora E. Fleming, Stuart L. Shalat **Yong Cai**, and Timothy Townsend. 2005. Potential arsenic exposures to children associated with in-service and recycled chromated copper arsenate (CCA)-treated wood in tropical environments. In *WIT Transactions on Ecology and the Environment (ISSN 1743-3541) Vol. 85. Environmental Exposure and Health*. 349-365.
 26. Tielian Xu, **Yong Cai**, Stephen Mezyk, and Kevin E. O’Shea, 2005. The role of hydroxyl radical, superoxide anion radical and hydrogen peroxide in the oxidation of arsenite by ultrasonic irradiation, In *Advances in Arsenic Research, Intergration of Expeiremental and Observational Studies and Implications for*

- Mitigation*, O'Day, P.; Vlassopoulos, D.; Meng, X.; Benning, L. G., Eds; Symposium Series 915; American Chemical Society, Washington DC, 2005, Ch 24, 333-343.
27. Kertulis, G.M., L.Q. Ma, G.E. MacDonald, R. Chen., J.D. Winefordner, and **Yong Cai**, 2005. Arsenic speciation and transport in *Pteris vittata* L. and the effects on phosphorus in the xylem sap. *Environ. Exp. Bot.* 54, 239-247.
 28. **Yong Cai**, Weihua Zhang, and Guangliang Liu, 2005. Metals and Organometallics: GC for speciation analysis, *In Encyclopedia of Chromatography*, Editor: Jack Cazes, Taylor & Francis. pp. 1032-1037.
 29. Min Feng, Jill Schrlau, Raymond Snyder, George Snyder, Ming Chen, John Cisar, and **Yong Cai**, 2005. Arsenic Transport and Transformation Associated with MSMA Application on a Golf Course Green. *J. Agric. Food Chem.* 53, 3556-3562.
 30. Bernine I. Khan, Helena M. Solo-Gabriele, Brajesh K. Dubey, Timothy G. Townsend, **Yong Cai**, 2004. Speciation of Solvent-Extracted Leachate from New and Weathered CCA-Treated Wood, *Environ. Sci. Technol.* 38, 4527-4534.
 31. Weihua Zhang, **Yong Cai**, Lena Ma, and Kelsey Downum, 2004. Arsenic complexation in arsenic hyperaccumulator-*Pteris vittata* (Chinese Brake fern), *J. Chromatogr. A.* 1043, 249-254.
 32. Weihua Zhang, **Yong Cai**, Lena Ma, and Kelsey Downum, 2004. Thiol synthesis and arsenic hyperaccumulator in *Pteris vittata* (Chinese brake fern), *Environ. Pollution.* 131, 337-345.
 33. Jinhui Su, **Yong Cai**, Lena Ma, 2004. Low molecular weight thiols in arsenic hyperaccumulator *Pteris vittata* upon exposure to arsenic and other trace elements, *Environ. Pollution.* 129, 69-78.
 34. Weihua Zhang and **Yong Cai**, 2003. Purification and characterization of thiols in an As hyperaccumulator under As exposure. *Anal. Chem.* 75, 7030-7035.
 35. **Yong Cai**, 2003. Derivatization and Vapor Generation Methods for Trace Element Analysis and Speciation. *In Sample Preparation for Trace Element Analysis*, Editors: Mester, Z. and Sturgeon, R., Elsevier. 575-590.
 36. Cong Tu, Lena Q. Ma, Weihua Zhang, **Yong Cai**, Willie G. Harris, 2003. Arsenic species and leachability in the fronds of the hyperaccumulator Chinese brake (*Pteris vittata* L.) *Environ. Pollution.* 124, 223-230.
 37. Rudolf Jaffé, Piero R. Gardinali, **Yong Cai**, Aaron Sudbury, Adolfo Fernandez, and Bernward Hay, 2003. Organic compounds and trace metals of anthropogenic origin in sediments from Montego Bay, Jamaica: Assessment of sources and distribution pathways. *Environ. Pollution.* 123, 291-299.
 38. W. Zhang, **Y. Cai**, C. Tu, and L.Q. Ma, 2002. Arsenic speciation and distribution in an arsenic hyperaccumulating plant, *Sci. Total Environ.* 300, 167-177.
 39. Sahar Motamedi, **Yong Cai**, Kevin O'Shea, 2002. Reaction of ultrasonically generated hydroxyl radicals with arsenic in aquatic in aqueous environments, *In Biogeochemistry of Environmentally Important Trace Elements*, Eds., Yong Cai and Olin Braids, Oxford University Press, 2002. 84-94.
 40. **Yong Cai**, Lena Q. Ma, 2002. Metal Tolerance, Accumulation and Detoxification in Plants with Emphasis on Arsenic in Terrestrial Plants, *In Biogeochemistry of Environmentally Important Trace Elements*, Eds., Yong Cai and Olin Braids, Oxford University Press, 2002.

41. **Yong Cai, 2002.** Biogeochemistry of Environmentally Important Trace Elements, Overview, In *Biogeochemistry of Environmentally Important Trace Elements*, Eds., Yong Cai and Olin Braids, Oxford University Press, 2002.
42. **Yong Cai, J. Cabrera, M. Georgiadis, J. Jayachadran, 2002.** Assessment of arsenic mobility in South Florida golf courses, *Sci. Total Environ.* 291, 123-134.
43. **Yong Cai, 2001.** Large volume injection for gas chromatography, In *Encyclopedia of Chromatography*, Editor: Jack Cazes, Marcel Dekker, New York, 2001, pp. 471-473.
44. **Yong Cai, and Weihua Zhang, 2001.** Gas chromatography for speciation and analysis of metals and organometallics, In *Encyclopedia of Chromatography*, Editor: Jack Cazes, Marcel Dekker, New York, 2001, pp. 518-521.
45. James W. Fourqurean, and **Yong Cai, 2001.** Arsenic and phosphorous in seagrass from the coast of the Gulf of Mexico, *Aquatic Botany.* 71, 247-258.
46. L.Q. Ma, K.M. Komar, C. Tu, **W. Zhang, and Y. Cai, and E.D. Kennelley, 2001.** A fern that hyperaccumulates arsenic, *Nature.* 409, 579.
47. **R. Irizarry, J. Moore, and Yong Cai, 2001.** Atomic fluorescence determination of selenium using hydride generation technique, *Intern. J. Environ. Anal. Chem.* 79, 97-109.
48. **Yong Cai, 2000.** Atomic Fluorescence in Environmental Analysis, In *Encyclopedia of Analytical Chemistry: Instrumentation and Applications*, Editor-in-chief, R.A. Meyers, John Wiley & Sons Ltd., 2000, pp. 2270-2292.
49. **Yong Cai, M. Georgiadis, and J.D. Fourqurean, 2000.** Determination of arsenic in seagrass using inductively coupled plasma mass spectrometry, *Spectrochimica Acta, Part B.* 55, 1411-1422.
50. **Yong Cai, Sugunya Monsalud, K. Furton, 2000.** Determination of methylmercury and ethylmercury using GC/AFS following aqueous derivatization with sodium tetraphenylborate, *Chromatographia.* 52, 82-86.
51. **Yong Cai, Sugunya Monsalud, Rudolf Jaffe and Ron Jones, 2000.** Gas chromatographic determination of organomercury following aqueous derivatization with sodium tetraethyl borate and sodium tetraphenyl borate: Comparative study of gas chromatography coupled with atomic fluorescence spectrometry atomic emission. *J. Chromatogr. A.* 876, 147-155.
52. **Yong Cai, 2000.** Speciation and analysis of mercury, arsenic, and selenium by atomic fluorescence spectrometry, *Trends in Anal. Chem.* 19, 62-66.
53. M.O. Andreae, W. Elbert, **Yong Cai, and T.W. Andreae, 1999.** Non-seasalt sulfate, methanesulfonate, and nitrate aerosol concentrations and size distributions at Cape Grim, Tasmania, *J. Geophysical Research.* 104, 21,695-21,706.
54. A.M.M. de Bettencourt, M.O. Andreae, **Yong. Cai, M.L. Gomes, L. Schebek, L.F. Vilas, and S. Rapsomanikis, 1999.** Organotin speciation in the Tagus estuarine ecosystem. *Aquatic Ecology.* 33, 271-280.
55. **Yong Cai, M. Abalos, and J.M. Bayona, 1998.** Comprehensive evaluation of Complexing Agents and Modifier Effects on the SFE of Native Phenyl and Butyltins from Sediment, *Applied Organomet. Chem.* 12, 577-584.
56. **Yong Cai, Rudolf Jaffé, and Ronald Jones, 1999.** Interaction of Mercury with Dissolved Organic Carbon/Colloids in the Everglades Surface Water, *Applied Geochemistry.* 14, 395-407.

57. **Yong Cai, 1999.** A simple model for improvement of accuracy in size distribution measurements of dissolved organic carbon in natural waters using ultrafiltration technique, *Water Research*. 33, 3056-3060.
58. **Yong Cai, Sugunya Monsalud, Kenneth G. Furton, Rudolf Jaffe and Ron Jones, 1998.** Determination of methylmercury in fish and aqueous samples using solid-phase microextraction followed by gas chromatography-atomic fluorescence spectrometry, *Applied Organomet. Chem.* 12, 565-569.
59. **Yong Cai, Guocai, Tang, Rudolf Jaffé, and Ronald Jones, 1997.** Evaluation of Some Isolation Methods for Organomercury Determination in Soil and Fish Samples by Capillary Gas Chromatography-Atomic Fluorescence Spectrometry, *Intern. J. Environ. Anal. Chem.* 68, 331-345.
60. **Yong Cai, Rudolf Jaffé, and Ronald Jones, 1997.** Ethylmercury in the Soils and Sediments of the Florida Everglades, *Environ. Sci. Technol.*, 1997, 31, 302-305.
61. Rudolf Jaffé, **Yong Cai, Jennifer West-Thomas, Mario Morales, and Ronald Jones, 1997.** On the Occurrence of Methylmercury in Lake Valencia, Venezuela, *Bull. Environ. Cont. Toxicol.* 59, 99-105.
62. **Yong Cai, Rudolf Jaffé, Azaam Alli, and Ronald Jones, 1996.** Determination of Organomercury Compounds in Natural Waters by Solid-Phase Extraction with Sulfhydryl Cotton Fiber and Capillary Gas Chromatography-Atomic Fluorescence Spectrometry Detection. *Anal. Chim. Acta.* 334, 251-259.
63. **Yong Cai and J.M. Bayona, 1995.** Speciation of Mercury in Fish and River Water Samples Using in situ Sodium Tetraethylborate Derivatization Followed by Solid-Phase Microextraction and Gas Chromatography-Mass Spectrometry, *J. Chromatography A.* 696, 113-122.
64. **Yong Cai, M. Cabanes, J.L Fernandez Turiel, M. Abalos, and J.M. Bayona, 1995.** On-Line Preconcentration of Selenium (IV) and Selenium (VI) in Aqueous Matrices followed by Liquid Chromatography-Inductivity Coupled Plasma Mass Spectrometry determination, *Anal. Chim. Acta.* 314, 183-192.
65. Yolanda Morcillo, **Yong Cai, and J.M. Bayona, 1995.** Rapid Determination of methyltin Compounds in Aqueous Samples Using Solid Phase Microextraction and Capillary Gas Chromatography Following in situ Derivatization with Tetraethylborate, *J. High Resolution Chromatography.* 18, 767-770.
66. Shugui Dai, Guolan Huang, and **Yong Cai, 1995.** Occurrence of Butyltin Compounds in Tianjin and Dalian Harbors of China, *Water Qual. Res. J. Canada.* 33-38.
67. **Yong Cai and J.M. Bayona, 1995.** Simultaneous Speciation of Butyl-, Phenyl-, and cyclohexyltin Compounds in Aqueous matrices Using Ethylation Followed by Solid-Phase Trace Enrichment, Supercritical Fluid Extraction and Gas Chromatographic Determination, *J. Chromatogr. Sci.* 33, 89-97.
68. **Yong Cai, Spyridon Rapsomanikis, and M.O. Andreae, 1994.** Determination of Butyltin Compounds in Sediments Using An Improved Aqueous Ethylation Method, *Talanta.* 41. 589-594.
69. J.M. Bayona and **Yong Cai, 1994.** The Role of Supercritical Fluid Extraction and Chromatography in Organotin Speciation Studies, *Trends in Anal. Chem.* 13, 327-332.

70. **Yong Cai**, R. Alzaga, and J.M. Bayona, **1994**. In Situ Derivatization and Supercritical Fluid Extraction for the Simultaneous Determination of Butyl and Phenyltin Compounds in Sediment, *Anal. Chem.* 66, 1161-1167.
71. **Yong Cai**, Spyridon Rapsomanikis, and M.O. Andreae, **1993**. Analysis of Butyltin Compounds in Sediment Samples by GC-AAS After in situ Derivatization with NaBEt₄, *J. Anal. At. Spectrom.* 8, 119-125.
72. Yong Cai, Spyridon Rapsomanikis, and M.O. Andreae, **1993**. Determination of Butyltin Compounds in Sediments Using GC-AAS. Comparison of NaBH₄ and NaBEt₄ Derivatization Methods, *Anal. Chim. Acta.* 274, 243-251.
73. Shugui Dai, Guolan Huang, and **Yong Cai**, **1993**. Absorption Behavior of Dimethyltin from Seawater Matrix onto the Suspended Particulate Matters in Tianjin Harbor, *Environ. Pollution.* 82, 217-221.
74. Guolan Huang, **Yong Cai**, Weihua Zhang, and Hongxia Lei, **1993**. Determination of Butyltin Compounds in Water with GC-AAS Combination Technique, *Acta Scientiarum Naturalium Universitatis Nankaiensis.* 4, 23-28.
75. **Yong Cai**, Spyridon Rapsomanikis, and M.O. Andreae, **1992**. Efficiency of Tributyltin Extraction from Rhine River Sediment, *Mikrochim. Acta.* 109, 67.
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77. Shugui Dai, Guolan Huang, and **Yong Cai**, **1989**. A Study of Methylation of Inorganic tin by Iodomethane in an Aquatic Environment with ¹³C Carbon Isotope Tracer Technique, *Applied Organometallic Chemistry.* 3, 115-120.
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PRESENTED PAPERS AND LECTURES

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1. Guangliang Liu, Yong Cai, Peter Kalla and Dan Scheidt, Temporal and Spatial Characteristics of Mercury Contamination in the Everglades during the Past Three R-EMAP Phases, GEER 2008 – Greater Everglades Ecosystem Restoration: Planning, Policy and Science Meeting, July 28 - August 1, 2008 Naples, FL, USA.
2. Leonard J. Scinto, Jennifer Richards, Peter Kalla, Evelyn Gaiser, Yong Cai, Daniel Scheidt and Tom Philippi, GEER 2008 – Greater Everglades Ecosystem Restoration: Planning, Policy and Science Meeting, July 28 - August 1, 2008 Naples, FL, USA.
3. Guangliang Liu, Aymara Fernandez and Yong Cai, Complexation of Arsenite with Dissolved Organic Matter in the Absence and Presence of Natural Sand.

- 235th American Chemical Society Annual Meeting, New Orleans, April 6-10, 2008. (oral)
4. Yong Cai and Guangliang Liu, Arsenic speciation analysis and its importance in understanding arsenic biogeochemistry. 235th American Chemical Society Annual Meeting, New Orleans, April 6-10, 2008. (Platform presentation).
 5. K. G. Shetty, J. V. Huntzicker, K. S. Rein, L. E. Fleming, Y. Cai, L. A. Fieber, K. Jayachandran, Isolation of Potential Polyether Algal Toxin Biodegrading Marine Bacteria using Salinomycin, 108th American Society for Microbiology General Meeting, June 1-5, 2008, Boston, Massachusetts.
 6. Yong Cai, Guangliang Liu, Thomas Philippi, Peter Kalla, Daniel Scheidt, Jennifer Richards, Leonard Scinto, and Charlie Appleby. Spatial variation in mercury distribution and biogeochemical cycling in the Florida Everglades. 2007, SETAC North America 28th Annual Meeting, November 11-5, 2007, Madison, Wisconsin.
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 11. Seenivasan Natarajan¹, Robert H. Stamps¹, Uttam K. Saha, Lena Q. Ma², D. Hernandez, and Y. Cai, Effect of Frond Harvest Methods and Sources of Water Refill on Arsenic Phytoremediation Using *Pteris vittata*.L – Chinese Brake Fern. 2007 Soil and Water Science Research Forum, Gainesville on September 14th, 2007.
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101. Yong Cai, R. Jaffé, and R. Jones, The role of dissolved organic carbon/colloids and particulate organic carbon in the biogeochemical cycling of mercury in the Florida Everglades. Florida Bay Science Conference. May 12-14, 1998, Miami.
102. Sugunya Monsalud, Yong Cai, Kenneth G. Furton, Rudolf Jaffé, and Ronald D. Jones, Determination of Methylmercury in Fish and Aqueous Samples Using Solid-Phase Microextraction Followed by Gas Chromatography-Atomic Fluorescence Spectrometry, The first Industry/Academe Symposium on Marine and Environmental Chemistry, Boca Raton, November 15, 1997.
103. Yong Cai, R. Jaffé, and R. Jones, Interaction between Dissolved Organic Carbon and Mercury Species in the Surface waters of the Florida Everglades, The first Industry/Academe Symposium on Marine and Environmental Chemistry, Boca Raton, November 15, 1997.
104. Yong Cai, R. Jaffé, and R. Jones, Determination of Organomercury Compounds in Environmental Samples using Capillary GC-AFS, the 24th Conference of the Southeast Association of Analytical Chemists. University of South Florida, Tampa, 2 - 4, 1997.
105. R. Jaffé, Yong Cai, Guocai Tang, and Ronald Jones, Interactions of Mercury with Dissolved/Colloidal and Particulate Organic Carbon in Aquatic Environment, V Latin American Congress on Organic Geochemistry, 1996, Cancun, Mexico, Abstract, p324.
106. Yong Cai, R. Jaffé, and R. Jones, A Comprehensive Study of Methyl and Ethylmercury Determination in Natural Water by Adsorbent Preconcentration and GC/AFS Analysis, International Conference Techniques - laboratory & Fieldsm, January 21-24, 1996, Orlando, Florida, USA.
107. Yong Cai, R. Jaffé, and R. Jones, Determination of Organomercury Compounds in Natural Waters with Capillary GC/AFS, 211th ACS National Meeting, New Orleans, La, March 24 - 28, 1996.
108. Y. Morcillo, Yong Cai, and J.M. Bayona, Rapid Determination of Organotin Compounds in Aqueous Samples Using Solid-Phase Microextraction and Gas Chromatography Following in situ Derivatization with Sodium Tetraethylborate, Sixteenth International Symposium on Capillary Chromatography, September, 27-30, 1994, Riva del garda, Italy. Abstract Volume I, P804.
109. Yong Cai, J.M. Bayona, Speciation of Mercury in Fish and River Water Samples Using in situ Sodium Tetraethylborate Derivatization Followed by Solid-Phase Microextraction and Gas Chromatography-Mass Spectrometry, Sixteenth International Symposium on Capillary Chromatography, September, 27-30, 1994, Riva del garda, Italy.
110. Yong Cai, J.M. Bayona, Determination of Butyl and Phenyltin Compounds in Sediments Using in situ Derivatization, Supercritical Fluid Extraction and GC/FPD, The 5th International Symposium on Supercritical Fluid Chromatography and Extraction. January 11-14, 1994, Baltimore, Maryland, USA. Abstract, D-15.
111. J.M. Bayona, Yong, Cai, and R. Alzaga, Recent Developments for the Supercritical Fluid Extraction of Polar Contaminants in Environmental Matrices, The 5th International Symposium on Supercritical Fluid Chromatography and Extraction. January 11-14, 1994, Baltimore, Maryland, USA. Abstract, P36.

112. J.M. Bayona, Yong Cai, Recientes Aplicaciones de la Extracción Fluida Supercrítica (SFE) para la Determinación de Contaminantes en Matrices Ambientales, XXIII Reunión Internacional del Grupo de Cromatografía y Técnicas Afines, 1994, Peniscola, Spain.
113. Yong Cai, J.M. Bayona, Determination of Organotins in Sediment Using Supercritical Fluid Extraction and GC/FPD, 6as Jornadas de Análisis Instrumental, Oct. 1993, Barcelona, Spain.
114. Yong Cai, Shugui Dai, and Guolan Huang, Organometallic Compounds in the Coastal Environment of North of China, International Conference on Environmental Water Chemistry, Nov. 4-6, 1992, Tianjin, China.
115. Yong Cai, Spyridon Rapsomanikis, and M.O. Andreae, Certification of TBT in Sediment, Workshop on determination of TBT in Sediments, Community Bureau of Reference, Commission of the European Communities, March 18, 1991, Brussels.

Invited lecturers/Seminars

1. Invited lecture, "Speciation Analysis and Biogeochemistry of Mercury and Arsenic", Institute of Geochemistry, Chinese Academy of Science. Guiyang, Guizhou, July 28, 2008.
2. Invited lecture, "Speciation Analysis and Biogeochemistry of Mercury and Arsenic", Institute of Geochemistry, Chinese Academy of Science. Guiyang, Guizhou, July 28, 2008.
3. Invited lecture, "Speciation Analysis and Its Applications in Biogeochemistry of Trace Elements" National Research Center for Geoanalysis, Beijing, China. April 3, 2008
4. Invited presentation, "Trace Level Mercury Speciation Using Aqueous Phenylation Followed By Purge and Trap Gas Chromatography Atomic Fluorescence Spectrometry", Colloquium Spectroscopicum International XXXV, September 23-27, 2007. Xiamen,
5. Invited presentation, "Mercury problem in the Florida Everglades, Workshop on emerging environmental pollutants", in celebration the 80th birthday of Professor Dai, September 22, 2007, Nankai University, Tianjin, China.
6. Invited lecture, "Mercury in the Florida Everglades", Tropical Research and Education Center IFAS, University of Florida, September 13, 2007.
7. Invited presentation, "Distribution of Total and Methyl Mercury in Different Ecosystem Compartments in the Everglades: Implications for Mercury Bioaccumulation". 90th Canadian Chemistry Conference and Exhibition, Winnipeg, Canada, May 26-30, 2007, Canada Winnipeg
8. Invited presentation, "Interactions of Arsenic and the Dissolved Substances Derived from Turf Soils". 2006. International Workshop on Water Contaminations and Health Effects, July 5-8, Edmonton, Alberta, Canada.
9. Invited presentation, "Arsenic from Anthropogenic Sources, Two Case Studies in Florida". 89th Canadian Chemistry Conference and Exhibition in Halifax, Nova Scotia May 27-31, 2006.

10. Invited presentation, "Arsenic in the Environment from Anthropogenic Sources", December 29-31, 2005. Annual Workshop of Innovative Research Group on Persistent Toxic Substances, The Hong Kong Baptist University, Hong Kong.
11. Invited presentation, "Arsenic Transport and Transformation Associated with MSMA Application on a Golf Course Green". The 2nd China International Symposium on Persistent Toxic Substances, May 15-18, 2005, Beijing, China.
12. Invited seminar, "Arsenic Uptake, Transformation and Tolerance in Arsenic Hyperaccumulator, Chinese Brake Fern (*Pteris Vittata*)". University of Miami, RSMAS. October 4, 2004
13. Invited seminar, "Arsenic Uptake, Transformation and Tolerance in Arsenic Hyperaccumulator, Chinese Brake Fern (*Pteris Vittata*)", The SUNY University at Buffalo. October 1, 2004.
14. Invited seminar, "Arsenic Uptake, Transformation and Tolerance in Arsenic Hyperaccumulator, Chinese Brake Fern (*Pteris Vittata*)". University of South Florida. September 3, 2004.
15. Invited seminar, "Understanding the Biogeochemistry of Arsenic and Mercury Using Speciation Approaches: Two Case Studies", Nankai University, June 29, 2004.
16. Invited seminar, "Mechanistic Study of Arsenic Uptake, Transformation and Tolerance in Arsenic Hyperaccumulator, Chinese Brake Fern (*Pteris Vittata*)", Nankai University, June 29, 2004.
17. Invited seminar, "Understanding the Biogeochemistry of Arsenic and Mercury Using Speciation Approaches: Two Case Studies", Center for Eco-Environmental Research, Beijing, China, July 2, 2004.
18. Invited seminar, "Understanding the Biogeochemistry of Arsenic and Mercury Using Speciation Approaches: Two Case Studies", Ocean University of China, July 19, 2004.
19. Invited seminar, "Mechanistic Study of Arsenic Uptake, Transformation and Tolerance in Arsenic Hyperaccumulator, Chinese Brake Fern (*Pteris Vittata*)", Ocean University of China, July 19, 2004.
20. Invited lecture (EVR 4211), "Mercury in the Everglades", Department of Environmental Studies, FIU, March 8, 2004
21. Invited seminar, "Mercury in the Everglades: source, fate, transport and speciation". September 16, 2003. Oak Ridge National Laboratory.
22. Invited lecture (EVR 4211), "Mercury in the Everglades", Department of Environmental Studies, FIU, Fall 2002.
23. "Arsenic speciation in soil and biological samples" Presentation given at TAG (Technical Advisory Group) Meeting for CCA-treated wood, January 10, 2003. University of Miami.
24. "Arsenic speciation in soils", Presentation given at TAG (Technical Advisory Group) Meeting for CCA-treated wood, May 6, 2002. University of Florida.
25. "Arsenic speciation and distribution in an arsenic hyperaccumulating plant" Presentation at 221st ACS National Meeting, April 1-5, 2001, San Diego.
26. "Arsenic hyperaccumulation by plants: a potential tool for bioremediation of arsenic". Presentation given at Stevens Institute of Technology, August 10, 2001.

27. "Approaches to the mechanisms of arsenic accumulation by Chinese Brake fern" Presentation given in the Department of Geology, University of South Florida. November 19, 2001.
28. "Understanding the biogeochemistry of arsenic and mercury using speciation methods: two case studies", Presentation supposed to give at Detroit meeting, FACCS, 2001 (canceled due to the September 11 tragedy).
29. "Biogeochemical cycling of mercury in Florida Everglades", October 16, 1998, Presentation given in the Department of Environmental Engineering, FIU.
30. "Speciation analysis of organometallic compounds in the environment", March 27, 1997, Department of Chemistry, FIU.
31. "Organometallic compounds in the environment", March, 1997, Southeast Environmental Research Center, FIU.

Invited Book Chapters (since 1997)

1. Yong Cai, Helena Solo-Gabriele; Timothy Townsend; Bernine Khan; Myron Georgiadis; and Brajesh Dubey, 2006. Elemental Speciation and Environmental Importance Associated with Wood Treated with Chromated Copper Arsenate. In *Environmental Impacts of Treated Wood*, Chapter 7. Townsend and Solo-Gabriele Eds. Taylor & Francis, Boca Raton, pp117-137.
2. Yong Cai, Weihua Zhang, and Guangliang Liu, 2005. Metals and Organometallics: GC for speciation analysis, *In Encyclopedia of Chromatography*, Editor: Jack Cazes, Taylor & Francis. pp. 1032-1037.
3. Weihua Zhang, Yong Cai. 2005. Metal tolerance in plants: the roles of thiol-containing peptide. *Water Encyclopedia: Surface and Agricultural Water*, Eds. Jay Lehr and Jack Keeley. Pp 609-615.
4. Tomoyuki Shibata, Helena M. Solo-Gabriele, Lora E. Fleming, Stuart L. Shalat Yong Cai, and Timothy Townsend. 2005. Potential arsenic exposures to children associated with in-service and recycled chromated copper arsenate (CCA)-treated wood in tropical environments. In *WIT Transactions on Ecology and the Environment (ISSN 1743-3541) Vol. 85. Environmental Exposure and Health*. 349-365.
5. Tielian Xu, Yong Cai, Stephen Mezyk, and Kevin E. O'Shea, 2005. The role of hydroxyl radical, superoxide anion radical and hydrogen peroxide in the oxidation of arsenite by ultrasonic irradiation, *In Advances in Arsenic Research, Intergration of Experimental and Observational Studies and Implications for Mitigation*, O'Day, P.; Vlassopoulos, D.; Meng, X.; Benning, L. G., Eds; Symposium Series 915; American Chemical Society, Washington DC, 2005, Ch 24, 333-343.
6. Yong Cai, Guangliang Liu, 2005. Biogeochemical cycling of arsenic and mercury, *In Advances in Environmental Chemistry*, Editor: Shugui Dai, Chemical Industry Press, Beijing China. pp. 209-246.
7. Yong Cai, "Derivatization and vapor generation methods for trace element Analysis", *In Sample Preparation for Trace Element Analysis*, Editors: Zoltan Mester and Ralph Sturgeon, Elsevier, 2003.

8. Yong Cai, "Large volume injection for gas chromatography", *In Encyclopedia of Chromatography*, Editor: Jack Cazes, Marcel Dekker, New York, 2001, pp. 471-473.
9. Yong Cai and Weihua Zhang, "Gas chromatography for speciation and analysis of metals and organometallics", *In Encyclopedia of Chromatography*, Editor: Jack Cazes, Marcel Dekker, New York, 2001, pp. 518-521.

HIGHLIGHTS OF THE RESEARCH and PUBLICATIONS

1. W. Zhang, **Y. Cai**, C. Tu, and L.Q. Ma, Arsenic speciation and distribution in an arsenic hyperaccumulating plant, *Sci. Total Environ.*, 2002, 300, 167-177. Ranked 3rd among the most download articles from April to December 2002 in the Journal.
2. The research on golf course arsenic was featured in Environ. Sci. Technol. Online News, Science News, February 9, 2005.
3. Two papers published in Environ. Sci. Technol. 2006, 40, 998-993, and 994-999, were featured in Environ. Sci. Technol. Environmental News Section, February 1, 2006, Vol. 40, Issue. 3.
4. Article published in Environ. Sci. Technol., 2006; 40(3) pp 994 – 999, was one of the top 10 most-cited articles in 2006. "Release of Arsenic to the Environment from CCA-Treated Wood. 2. Leaching and Speciation during Disposal Bernine I. Khan, Jenna Jambeck, Helena M. Solo-Gabriele, Timothy G. Townsend, and Yong Cai, *Environ. Sci. Technol.*; 2006; 40(3) pp 994 – 999. http://pubs.acs.org/journals/esthag/promo/most/most_cited/2006.html
2006 Most-Cited Articles are articles published in 2006 receiving the most citations in the same year. ACS Publications recognizes these articles as research of immediate interest.

OTHER PUBLICATIONS (INTERVIEWS, FEATURE ARTICLES ETC.)

1. Feature article appeared on Banian Bulletin, "FIU Professor develops speciation methods using PSA systems", Banian Technologies, April, 1999.
2. FIU News Letter, Feature Article, July, 2001, "FIU Scientists Conducting Research on Arsenic-Eating Ferns"

RESEARCH

RESEARCH GRANTS

Successful grant proposals

I have received over \$2,100,000 in funding to support my independent research as well as collaborative projects since 2003. The funded proposals are listed below. Note: (1) Only the portion awarded to Cai is counted for the projects as co-PI; (2) For grants started before 2003, only the portion received after August 2003 is included.

1. Yong Cai (Co-Investigator) with Lawrence H. Boise (PI)

- “Arsenic-induced apoptosis in myeloma”
NIH
01/01/09-6/30/14
\$231,806 (Awarded to YC).
2. Yong Cai (Subproject PI)
“Fate and Transformation of Mercury in Soil Environment”
A research project sponsored by DOE (DE-FG01-05EW07033) under FIU Main Account No. 120702502.
3/1/08 to 12/31/08
\$41,809 (Direct) and \$16,932 (Indirect). \$58,741 (Total cost)
3. Yong Cai (Co-PI) with Kelly Rein (PI)
“Environmental Health Science at FIU” Administrative Core
NIH-NIEHS-ARCH Program
9/1/2006 to 8/30/2011
\$798,155 (Total direct cost) for the Administrative Core
4. Yong Cai (PI)
NIH-NIEHS-ARCH Program, Trace Metal Core
9/1/2006 to 8/30/2011
\$250,000 (Total direct cost) for the Trace Metal Core
5. Yong Cai (PI)
NIH-NIEHS-ARCH Program, Pilot Project 3
“Leachability and Toxicity of As, Copper, and Chromium Associated with CCA-treated Wood”
9/1/2006 to 8/30/2011
\$196,575 (Total direct cost) for the Pilot project
6. Yong Cai (co-PI) with Dave Roelant (PI), Marshall Allen et al.
A research project in the Continuation Application to DOE (DE-FG01-05EW07033)
“Remediation and Treatment Technology Development and Support”
09/01/06 – 02/18/07
\$1,372,083
\$16,864.77 (Direct) and \$23,695 (Total) awarded to Yong Cai
02/19/07 – 02/17/08, \$40,910 (Direct) to Yong Cai
7. Yong Cai (Sole PI)
A Research Project in NIH-MBRS Program (3 S06 GM008205-20S1)
“Understanding factors controlling speciation and release of arsenic from soil into groundwater”.
04/01/2005 – 03/31/2008
\$352,855 (direct), app. \$435,197 (total)
Y1: \$147,174 (direct) + \$41,785 (indirect)
8. Yong Cai (Co-PI) with Konstantinos Kavallieratos (PI) and Frank J. Millero
A Research Project in NIH-MBRS Program (3 S06 GM008205-20S1)
“Toxic metal sensor discovery via ion-change extraction”
04/01/2005 – 03/31/2008
\$400,913 (direct), app. \$561,278 (total)

9. Yong Cai (Co-PI) with Pete Karla (PI), K. Thornton, J. Richards, R. Welch, M. Madden, J. Trexler, E. Gaiser, T. Phillipi, P. Kalla, and D. Scheidt
Department of Interior/NPS/EPA. CA H5297-05-008 (Account #5297-7106-454)
“Monitoring, Modeling and Assessment of the Everglades Ecosystem in Support of Comprehensive Everglades Restoration Program (CERP): R-EMAP Phase III”.
05/01/2005 – 04/30/2008
\$210,834 (direct cost), \$249,000 (total) awarded to Yong Cai
10. Yong Cai (PI)
FPL/UF. 205001512 (FIU Account Number)
“Phytoremediation of arsenic contaminated groundwater using Chinese Brake fern”. Subcontracted to University of Florida
04/01/2005 – 12/31/2006
\$17,142 (direct), \$18,000 (Total).
11. Yong Cai (PI)
FIU/ABR (Access to Biomedical Research), “New derivatization and analytical methods for speciation of toxic organometallic and metallic compounds in biological and environmental samples”.
June 2004 – December 2004.
\$5,000.
12. Yong Cai (Co-PI) with Konstantinos Kavallieratos (PI) and Frank J. Millero
NIEHS-ARCH, “Recognition and sensing of Pb(II) by sulfonamide ion exchangers”.
08/01/2004 – 07/30/2006
\$150,000 (direct), app. \$210,000 (total)
13. Yong Cai (Co-PI) with Jose Almirall (PI)
NSF, “Request for a LA-HR-ICP-MS”.
Three years starting from August 2004
\$415,434
14. Yong Cai (PI) with Helana Solo-Gabrele and M. Grosell (co-PIs)
Pilot Project Program/P30 ES05705, NIEHS-MFBS
“Toxicity testing of leaching from wood treated with chromated copper arsenate (CCA) – interplay with ambient salinity”
05/01/04 - 04/30/05
\$25,000 (direct)
15. Yong Cai (Subproject PI)
DOE/FIU-HCET (DE-FG26-00NT40806)
“Fate, Transport, and Remediation of Mercury in DOE sites at Oak Ridge Reservation”.
08/01/03-11/30/05
\$94,806 (including \$10,000 for supplies and small equipment, such as a purge and trap system for Mercury Analyzer).
16. Yong Cai (Co-PI) with Jose Almirall (PI)
Instrument Grant from PE SCIEX
“Partial Instrument donation of DRC II ICP/MS instrument for research in Forensic and Environmental sciences”
Year 2003

- \$140,000 and matching fund from FIU A& S (\$25,000) and DSRT (25,000).
(Total value of the instrument \$220.0 K)
17. Yong Cai (Sub-account PI)
MWH/EMAX Laboratories (Main Account FIU/HCET)
“Method development for metal analysis in earth worms”
August 2004 – December 2004
\$13,970 (Total)
 18. Yong Cai (Subproject PI)
DOE/FIU-HCET (DE-AC09-02SR22229)
“Determination of Natural Attenuation mechanisms & Kinetics, Task Two:
Arsenic and Selenium in Fly Ash”.
11/01/02-11/24/04
\$89,000 (\$39,000 for PI salary in Summer 2003 and a graduate tuition and salary
for one year, \$45,000 for instruments and supplies, including a Millennium AFS
System).
 19. Yong Cai (Sole PI)
FIU A&S College’s Summer Research Support Program
“Sulfur-containing compounds and their roles for arsenic hyperaccumulation in
Brake fern”.
Summer 2002
\$4,000. Fund was used for summer salary (\$3,500) and laboratory expenses
(\$500).
 20. Yong Cai (Subproject PI)
DOE/FIU-HCET (DE-AC09-SR22229)
“Technical Research and development of environmental remediation and
restoration”.
03/01/02-02/28/03
\$39,000 (initial \$14,050 + \$8,000 supplement + tuition and salary for one
student).
 21. Yong Cai (Sole PI)
Kirk Pharmaceutical, Inc.
“Arsenic decontamination by plants”.
02/01/02-01/30/04
\$30,000
 22. Yong Cai (Sole PI)
Florida Department of Environmental Protection, Rookery Bay National
Estuarine Research Reserve (NERR)
“Occurrences of Organotin Compounds in Rookery Bay, CICEET program”.
10/01/01-08/30/02
\$9,300
 23. Yong Cai (PI) with Helena Solo-Gabriela (Co-PI)
National Institute of Environmental Health Sciences (S11 ES11181). Pilot Project
in NIEHS/ARCH program “Environmental health Sciences at Florida
International University”
Pilot project, “Impacts of arsenic from CCA-treated wood within marine and
terrestrial environment, evaluating the toxicity of leachates”.

- 08/01/01-01/31/04
\$180,000 (direct)
24. Yong Cai (Co-PI) with L. Ma (PI), D. Sylvia, K. Downum, and Jean-Francois Gaillard.
National Science Foundation/UF. (FIU Account Number 205000512).
“Understanding & enhancement of phytoextraction of arsenic from contaminated soil”.
- 08/01/01-07/30/04
\$445,877. Subcontract in the amount of \$74,787 (direct cost) to FIU through University of Florida (\$24,929 per year).
25. Yong Cai (sole PI)
FIU, Provost’s Office and Foundation
“Impact of arsenic from CCA-treated wood: a speciation study”.
- 05/01/01-12/31/01
\$15,061
26. Yong Cai (Co-PI) with G. Rand (PI), P. Gardinali, and R. Jaffe.
U.S. Department of Interior, National Park Service
“Screening Level Risk Assessment to Determine Potential High Priority Contaminants and Natural Resources at Risk in Biscayne and Everglades National Parks: Critical information needs for CERP”
- 04/01/01-03/30/04
\$736,000
27. Yong Cai (Co-PI) with P. Gardinali (PI), R. Jaffe, and J. Boyer.
Collier County
“Effects of increased urban and agricultural land use on the anthropogenic loading to southwest Florida estuaries: baseline information to assess changing watersheds”.
- 04/01/01-03/30/02
\$88,000
28. Yong Cai (Co-PI) with L. Ma (PI), A. Green, and G. Urdos
National Science Foundation. (FIU Account Number 579901800).
“Phytoremediation of Arsenic Contaminated Soils and Wastes: Feasibility and Optimization”.
- 09/01/00-08/30/02
\$185,406. Subcontract in the amount of \$22,000 (direct cost) to FIU through University of Florida.
29. Yong Cai (Sole PI)
University of Miami. (FIU Account Number 579901100).
“Method development for arsenic speciation in the leachate of CCA-treated wood”.
- 10/01/00-09/30/01
\$8,800. The fund of \$4,400 was received initially for six month and with \$4,400 renewal for additional six month.
30. Yong Cai (Subproject PI)
DOE/FIU-HCET
“Mercury Contaminated Material Decontamination and Assessment”.

- 11/06/99-10/30/01. \$99,100.
The support for Phase I (11/06/99-4/30/2000) was \$20,000. Additional fund was awarded for Phase II to a total of \$99,100.
31. Yong Cai (Sole PI)
FIU College Grant-in-aid
“Speciation of arsenic using HPLC coupled with AFS”.
03/04/99-06/15/99
\$680
 32. Yong Cai (Co-PI) with R. Jones (PI), R. Jaffe US
EPA/National Park Service
“Mercury Study in the Everglades”
1997-1998; \$98,682.
1998-1999; \$582,800.
1999-2000, \$179,284.
This grant was continuation of the research that started from 1995 by Jones and Jaffe. I was latterly involved as co-PI.
 33. Yong Cai (Sole PI)
FIU, College Grant-in-aid
“New derivatization reagents for speciation of organometallic compounds”.
10/01/98-12/31/98
\$320
 34. Yong Cai (Sole PI)
FIU, Provost’s Office and Foundation
“New derivatization and analytical methods for speciation of organometallic and metallic compounds in environmental samples”.
05/04/98-12/31/98
\$13,097.22

Proposal Pending

1. Yong Cai and Guangliang Liu
“Effect of Engineered Nanomaterials on Fate and Transformation of Mercury and Arsenic in Aquatic Environment”
NSF
To be submitted in September
05/01/09-4/30/12
\$238,375

Proposal in preparation

1. Yong Cai and Barry Rosen
“Transport and biotransformation of carcinogenic arsenicals in soil”, NIH-MBRS, SCORE. Proposal will be submitted with next round of submission with SCORE program (~\$400,000).

Proposal not funded

1. EPA/NSF/DOE, “Effect of Engineered Nanomaterials on Fate and Transformation of Mercury and Arsenic in Aquatic Environment”. Requested \$389,418. Yong Cai (PI) and Guangliang Liu. Submitted on 8/22/2007.
2. NIH, “Arsenic-induced apoptosis in myeloma”. Requested \$226,613 for Yong Cai. Yong Cai (Co-Investigator) with Lawrence H. Boise (PI). Submitted 10/13/06
3. NSF, “Phase –II Phytoremediation of arsenic contaminated soils: feasibility and optimization”. Requested \$77,103 for Cai. Yong Cai (co-PI) with Lena Ma (PI). Submitted 10/25/04.
4. Division of Health Science, Atlanta, “Arsenic Contamination in Central India”. Co-PI with Professor K.S. Patel (India). Requested \$249,000 (FIU \$109,000).
5. NSF-MRI, “Acquisition of a hybrid high-resolution (HR), Triple-quadruple (TQ) Mass spectrometer”. Co-PI with Piero Gardinali (PI), Watson Lees, Ramon Lopez de la Vega, Martin Quirk. Requested \$507,045. Submitted 01/07/05.
6. National Oceanic and Atmospheric Administration (Ocean and Human Health), “Fate and transport of arsenic in estuary”. Co-PI with Bongkeun Song (PI) and Peter Jaffe. Requested \$1,046,121. FIU share: \$122,823 (direct) and \$172,576 (total). Submitted 4/22/2005.
7. NSF, “Mechanisms of arsenic hyperaccumulation in Brake fern – chemistry and biochemistry approaches” (PI). About \$2,529,721.
8. Army Research Office, “Recognition and sensing of toxic metals and metalloids by peptide-derived sensors” (Co-PI) with K. Kavallieratos (PI) and G. M. Brown. Submitted 10/30/02. \$400,000.
9. NSF, “Mechanisms of arsenic hyperaccumulation by *Pteris vittata* – chemical and biochemical approaches”. PI with K. Kavallieratos, L. Ma, J.F. Gaillard, N. Terry. Submitted 10/28/02. \$2,540,000
10. NSF “Request for a LA-HR-ICP-MS”. Co-PI with Jose Almirall (PI). \$415,434.
11. ACS-PRF “The Role of Dissolved Organic Carbon and Reduced Organic Sulfur in the Mercury Biogeochemistry in the Florida Everglades” (PI, with R. Jaffe). \$116,193.
12. NSF “Mechanisms of arsenic hyperaccumulation in Brake fern – chemistry and biochemistry approaches” (PI with K. Kavallieratos), \$2,529,721.
13. National Park Service proposal “Magnitude and extent of trace metal contamination in the Everglades Protection Area”, (PI). Submitted June 9, 2000 for \$154,677.
14. FIU Grant-in-aid proposal, “Speciation and analysis of arsenic compounds using HPLC coupled with AFS”, submitted February 4, 1999 for 1,000.00. (PI).
15. Research Corporation Proposal, “A Novel Approach to the Methylmercury Accumulation through Food Web”, Submitted September 1, 1999 for \$50,000.00. (PI).
16. ACS-PRF Type AC proposal, “colloid-facilitated transport of arsenic: predicting arsenic mobility in unsaturated soils”, Submitted May, 2000, \$86,152.
17. NSF Instrumental pre-proposal “Sample introduction system for ICP/MC”, with J. Almirall and R. Hickey-Vargas, submitted January 1999 for \$150,000.

18. The Camille and Herry Dreyfus Foundation pre-proposal “Environmental-forensic chemistry: chemical fingerprinting of fossil fuel products in the environment for law enforcement applications” co-PI with R. Jaffe, K. Furton, P. Gardinali, and J. Almira, submitted May 20, 1998 for \$45,144.
19. National Park Service proposal “Establish pollution reduction loads: defining sources and sinks (temporal and spatial distribution), and estimation of contaminant loading to Biscayne National Park”, with co-PI J. Meeder and P. Gardinali. Submitted September 1998 for \$140,000.00.
20. The cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) proposal, “Characterization of present and historical inputs, speciation and transport of biologically relevant anthropogenic contaminants into Rookery Bay National Estuary Research Reserve and ten Thousand Islands Aquatic Preserve”, co-PI with P. Gardinali and R. Jaffe. Submitted January 1999 for \$178,323.00.
21. NSF proposal, “Organic biogeochemistry of mercury in the Florida Everglades”, PI with Rudolf Jaffe and Ron Jones. Submitted January 20, 1999 for \$494,859.
22. Society for Analytical Chemists of Pittsburgh proposal, “Use of new derivation reagent and stable isotope dilution ICP/MS for mercury speciation”, Submitted March 18, 1999 for \$200,000.00. (PI).
23. White paper to the Harbor Processes Program, “Approaches to the importance of physical and chemical speciation in controlling the biogeochemical cycling of some Navy relevant metals in the Biscayne Bay and adjacent estuarine areas”, co-PI with Rudolf Jaffe, Gary Rand, and Ron Jones. Submitted March 12, 1998 for \$410,977.00.
24. White paper to the Harbor Processes Program, “Impact of contaminated suspended particulate using an estuarine microcosm system: bioavailability, bioconcentration and ecological effects”, co-P.I. with Gary Rand (P.I.), K. Jayachandran, Rudolf Jaffe and P. Gardinali. Submitted March 12, 1998 for \$449,583.00.
25. White paper to the Harbor Processes Program, “Occurrence, speciation and transformation of the new marine antifouling agent Irgarol 1051 in coastal and near-shore environment”, co-P.I. with P. Gardinali (P.I.) and Rudolf Jaffe. Submitted March 12, 1998 for \$265,431.00.
26. NSF proposal “Factors controlling the fate and transport of mercury in the lower Everglades and estuaries”, PI with Rudolf Jaffe and Ron Jones. Submitted January 3, 1998, \$358,448.
27. NSF Sponsored Center proposal “Investigation advanced oxidation process for the treatment of hazardous wastes”, co-P.I. with Kevin O’shea (P.I.), and Rudolf Jaffe. Submitted January 5, 1998 for \$1,207,141.00.
28. ACS-PRF Type G proposal, “Interaction of dissolved/colloidal and particulate organic carbon with mercury compounds: fundamental information required for modeling mercury cycling”, Submitted October 29, 1997, \$20,000.
29. Research Corporation proposal “New derivatization reagents for speciation of organometallic and metallic compounds”, Submitted November 25, 1997, \$37,500.

SERVICES

UNIVERSITY SERVICES

1997 - 1998	Member, Department of Chemistry, Radiation Committee
1997 – 1998	Member, Department of Chemistry, Analytical Position Search Committee Member
1997 – Present	Director, Mercury Laboratory of SERC at FIU.
1998 – Present	Department of Chemistry, Library Representative
1998 – 1999	Member, Department of Chemistry, Public Committee
1998 – Present	Member, Department of Chemistry, AMSF Technical Committee.
1999	Member, Department of Chemistry, AMSF Engineer Position Search Committee
2000 - Present	Member, SERC Laboratory/Data Management Committee
2001	Member, Department of Chemistry, Physical Chemistry Position Search Committee Member
2001	Member, Department of Chemistry, Lab Manual Fund Committee
2000	Representative of SERC of FIU attending the meeting in SFWMD
2001	Member, Department of Chemistry, Engineer Position Search Committee
2002	Housing Liaison for Chemistry
2002	Member, Department of Chemistry, Engineer Position Search Committee
2002- Present	Member of Department of Charge Back Center
2002 - Present	Affiliated faculty member in the Department of Environmental Studies at FIU.
2003	Member, Department of Chemistry, Physical Chemistry Position Search Committee Member
2003	Member, Department of Chemistry, Chemistry Open Position Search Committee Member
2003	Chair, Department of Chemistry, AMSF Engineer Position Search Committee
2003 - Present	Co-Principal Investigator on the Administrative Core of the ARCH Program
2003 – Present	Member, Department of Chemistry and Biochemistry Graduate Committee
2003	Member, SERC Human Resource Committee
2004 - Present	Honors Research Affiliate, The Honors College, Florida International University
2006	Member, Department of Chemistry, Marine Chemistry Position Search Committee Member
2006 - Present	Director, Department of Chemistry and Biochemistry Graduate Program
1997 – Present	Members on a number of graduate thesis/dissertation committees:

Name	Degree/Date	Advisor	Date	School/Department
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	enter program		graduated	
Alexandra Gongora	M.Sc. 1996	Dr. Jaffe	1998	Chemistry
Julio Lopez	M.Sc. 1996	Dr. Jaffe	1998	
George Di Carlo	M.Sc. 1996	Dr. Fuetens	1998	Environ. Eng.
Enrique Pernas	M.Sc. 1996	Dr. O'Shea	1998	Chemistry
Sugunya Monsulud	M.Sc. 1997	Dr. Cai	1999	Chemistry
Zeqing Rao	M.Sc. 1998	Dr. Gardinali	2000	Chemistry
Jie Chi	M.Sc. 1999	Dr. Landrum	2001	Chemistry
X. Zhao	M.Sc. 1999	Dr. Gardinali	2001	Chemistry
Jing Wang	M.Sc. 1999	Dr. Furton		Chemistry
Yali Hsu	M.Sc. 1999	Dr. Furton		Chemistry
L. Morris	M.Sc. 1999	Dr. Almirall	2001	Chemistry
Maria Sheils	M.Sc. 2000	Dr. Cai	2002	Chemistry
S. Montero	Ph.D. 1998	Dr. Almirall	2003	Chemistry
Jinhui Su	M.Sc. 2000	Dr. Cai	2002	Chemistry
Damaris Lugo	M.Sc. 2002	Dr. Cai		Transferred to E. Eng.
L. Alvarez- Fraga	M.Sc. 2001	Dr. Gardinali	2003	Chemistry
R. Mead	Ph.D. 1998	Dr. Jaffe	2003	Chemistry
Bernine Khan	Ph.D. 1999	Dr. H. Solo- Gabriele	2004	UM
Sahar Motamedi	M.Sc. 2001	Dr. O'Shea	2003	Chemistry
Tianlang Wan	M.Sc. 2001	Dr. Furton	2003	Chemistry
Qi Yao	M.Sc. 2001	Dr. Landrum	2003	Chemistry
Prabhkar Pant	M.Sc. 2001	Dr. Jayachadran	2003	Environ Studies
Andrew Benson	M.Sc. 2001	Dr. Furton	2003	Chemistry
Jianhong Wu,	M.Sc. 2001	Dr. Gardinali	2003	Chemistry
Tatiana Trejos	M.Sc. 2001	Dr. Almirall	2003	Chemistry
Weihua Zhang	Ph.D. 2000	Dr. Cai	May, 2004	Chemistry
Myron Georgiadis	M.Sc. 2001	Dr. Cai	2004	Chemistry
Marnie Billie	M.Sc. 2004	Dr. Gary Rand		Environ Studies
Adolfo Fernandez	M.Sc. 2002	Dr. Jaffe	2004	Environ Studies
Arlette Azua	M.Sc. 2002	Dr. Gardinali	2004	Chemistry
Zhangrong Chen	PhD. 2002	Dr. Cai	July 14, 2006	Chemistry
Patricia Harrison	M.Sc. 2004	Dr. Gardinali	Mar. 2006	Chemistry
Jennette Perr	Ph.D. 2001	Dr. Almirall	July, 2005	Chemistry
Yunping Xu	Ph.D. 2001	Dr. Jaffe	Dec. 2005	Chemistry

Ross Harper	Ph.D. 2001	Dr. Furton	July 2005	Chemistry
Kristen Alexander	M.Sc. 2001	Dr. Furton		Chemistry
Amanda Pau	M.Sc. 2002	Dr. Kavallieratos	K. 2004	Chemistry
Rob Griffith	M.Sc. 2003	Dr. Furton	2005	Chemistry
Laura Conner	M.Sc. 2003	Dr. Furton	2006	Chemistry
Dana Mickens	M.Sc. 2003	Dr. Almiral		Chemistry
Adam Wolff	M.Sc. 2003	Dr. Furton		Chemistry
Sayuri Umpierrez	M.Sc. 2003	Dr. Almiral	Feb. 2006	Chemistry
Sheena Szuri	M.Sc. 2002	Dr. Cai		Chemistry
Julio Cabrera	M.Sc. 2002	Dr. Cai		Chemistry
Tianlian Xu	Ph.D. 2002	Dr. O'Shea	Mar. 2007	Chemistry
Min Gao	Ph.D. 2002	Dr. Jaffe	05/15/07	Chemistry
Stephanie Bell	M.Sc. 2003	Dr. Gardinali	11/20/07	Chemistry
Jun Shi	M.Sc. 2004	Dr. Gardinali	June, 2006	Chemistry
Ben Naes	Ph.D. 2004	Dr. Almiral		Chemistry
Sachin Joshi	Ph.D. 2003	Dr. Mebel	11/21/07	Chemistry
Joseph Gagnon	M.Sc.	Dr. Almiral	07/20/06	Chemistry
Waleska Castro	PhD. 2005	Dr. Almiral		Chemistry
Michael Macias	PhD. 2005	DR. Furton		Chemistry
Maria Mendoza Baez	PhD. 2005	Dr. Almiral		Chemistry
Meilin Chen	PhD. 2005	Dr. Jaffe		Chemistry
Lucy Yehiayan	PhD. 2006	Dr. Cai		Chemistry
Patricia Guerra	PHD. 2006	Dr. Almiral		Chemistry
Paola Prada	PhD 2006	Dr. Furton		Chemistry
Sen Chen	PHD, 2006	Dr. Cai		Chemistry
Erica Cahoon	PhD, 2006	Dr. Almiral		Chemistry
Lauryn Degreeff	PhD, 2006	Dr. Furton		Chemistry
Chengtao Wang	PhD, 2006	Dr. Gardinali		Chemistry
Asha Jaja	MS, spring07	Dr. Berry		Chemistry
Jenny Gallo	MS, fall 2007	Dr. Almiral		Chemistry
Samantha Tolliver	PhD, Fall 2005	Dr. Furton		Chemistry
Anusha Ramani	MS, Fall 2007	Dr. Jayachadran		Environmental Studies

PROFESSIONAL SERVICES

Proposal Review Panel Served

1. Chinese National Natural Science Foundation Chemistry Division (2005-2008) (Overseas expert on the grant review panel)
2. NIH-NIEHS (ZES1 LWJ-B (AR)), March 30-31, 2004
Advanced Research Cooperation for Environmental Health (ARCH)
3. NIH (ZRG1 BST-G (02) (S)), November 5, 2004
Technologies for Environmental Monitoring
4. NSF, October 25-26, 2004, Chemistry Research Experience for Undergraduates (REU)
5. USEPA's Office of Environmental Information
Peer Review of "Technical Review of Chromium Antimony Titanate (CAT)". December 9, 2004.

Journal articles, Book chapters, and Proposals review.

1996 – Present Serve as referee for manuscripts submitted to the following journals:

- *Acta Agriculturae Scandinavica*
- *The Analyst*
- *Analytical Chemistry*
- *Analytical and Bioanalytical Chemistry*
- *Anal. Chim. Acta*
- *Applied Geochemistry*
- *Applied Organometallic Chemistry*
- *Chemosphere*
- *Ecotoxicology and Environmental Safety*
- *Environmental Geochemistry and Health (EGAH)*
- *Environmental International*
- *Environmental Monitoring and Assessment*
- *Environmental Pollution*
- *Environmental Science and Technology*
- *Environmental Toxicology and Chemistry*
- *International J. Environ. Anal. Chem.*
- *Journal of Chemical Education*
- *Journal Chromatography A*
- *Journal Environmental Engineering,*
- *Journal of Proteome Research*
- *Pedosphere*
- *The Science of the Total Environment*
- *Talanta*
- *Trend in Anal. Chem.*
- *Water Research*

2000 - Present Review proposals submitted to:

- *National Science Foundation (NSF)*
- *Research Corporation*
- *American Association for the Advancement of Science (AAAS)*
- *ACS-PRF*

Other Professional service and research Activities

1999	Organizer, Workshop for Analysis and Speciation of Arsenic, Selenium, and Mercury held at Florida International University.
2001	Symposium organizer, 221 st American Chemical Society National Meeting, San Diego, April 1-5, 2001. Symposium title: Biogeochemistry of Environmentally Important Trace Elements.
2001	Symposium Section Chairperson (two sections). 221 st American Chemical Society National Meeting, San Diego, April 1-5.
2001	Book Editor, ACS Symposium series book, "Biogeochemistry of Environmentally Important Elements". American Chemical Society, Book will be published by Oxford University Press in 2002,
2001	Symposium Co-organizer, 2001 The Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), October 2001, Detroit, Symposium title: Environmental Application of Speciation Methods. (Symposium was canceled in the last minute due to the September 11 tragedy).
2001- Present	Member of South Florida Water Management District Expert Assistant Program.
2003	Symposium Section Co-Chair. 7 th International Conference on Biogeochemistry of Trace Elements, June 15-19, 2003, Uppsala, Sweden.
2003 - Present	Member of Review Panel, EPA National Center for Environmental Research (NCER)
2004	2004 Winter Conference on Plasma Spectroscopy, January 5-10, 2004, Ft. Lauderdale. Workshop Co-Organizer and lecturer. Workshop title: Arsenic, mercury, and selenium speciation with atomic fluorescence spectroscopy, Part I: Theory, Instrumentation and application; Part II: Laboratory Experimentation and demonstration
2006	Analytical Symposia Organizer, 82nd American Chemical Society Florida Meeting and Exhibition, May 2006, Orlando.
2007	Analytical Symposia Organizer, 83 rd American Chemical Society Florida Meeting and Exhibition, May 2007, Orlando
2007- 2009	Member of International Committee of the International Society of Trace Element Biogeochemistry (ISTEB)
2007	Symposium co-Chair, Society of Environmental Toxicity and Chemistry North America 28 th Annual Meeting, November 11-5, 2007, Madison, Wisconsin.

- 2008 Analytical Symposia Organizer, 84th America Chemical Society Florida Meeting and Exhibition, May 2008, Orlando.
- 2008 Member of Society of Environmental Toxicity and Chemistry North America 29th Annual Meeting Program Committee
- 2008 Symposium Chair, Society of Environmental Toxicity and Chemistry North America 29th Annual Meeting, November 16-21, 2008, Tampa, Florida.

COMMUNITY SERVICES

- 1997, 1998, 1999,
2000, 2001
fair Served as a Judge for the Everglades Elementary School Science fair
- 1999 Chemistry Demo at Leewood Elementary School.
- 1999-present Advisor, Miami-Dade County Public School Advanced Academic Internship Program
- 2008 Co-organize with Professor Jaffe a one-day Workshop on Mercury in Environment for South Florida Student Shark Program (SFSSP), http://cufer.rsmas.miami.edu/wordpress/?page_id=105. Amount 50 high school student attended the Workshop.