Bhoopesh Mishra

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Education

Ph.D **08/2000 – 08/2006**
University of Notre Dame, IN, USA

M.Sc **07/1998 – 06/2000**
Indian Institute of Technology Bombay**,** Mumbai, India

B.Sc **08/1995 – 06/1998**
Science College, Patna University, Patna, India

Employment

10/2016 – Present* University Academic Fellow, School of Chemical and Process Engineering, University of Leeds, UK

10/2011 – Present* Research Assistant Professor, Department of Physics, Illinois Institute of Technology, Chicago, IL

10/2011 – 8/2016 Guest Scientist, Biosciences Division, Argonne National Laboratory, Chicago, IL

08/2009 – 09/2011 Postdoctoral Research Associate, Biosciences Division, Argonne National Laboratory, Chicago, IL

02/2009 – 07/2009 Lecturer, Department of Geosciences and Princeton Environmental Institute, Princeton University, Princeton, NJ

07/2006 – 07/2009 Postdoctoral Research Associate, Department of Geosciences, Princeton University, Princeton, NJ

08/2002 – 08/2006 Graduate Research Fellow, Department of Physics, Univ. of Notre Dame, Notre Dame, IN

08/2000 – 08/2002 Teaching Assistant, Department of Physics, Univ. of Notre Dame, Notre Dame, IN

**I am currently employed 80% at Leeds and 20% at IIT Chicago to wrap-up my ongoing projects*.

Honors and Awards

Marquis Who's Who in America; 65th Edition	**Oct 2010**
Outstanding Graduate Dissertation Award	**May 2007**
Bayer Predoctoral Fellowship	**07/2005 – 06/2006**
Environmental Molecular Science Institute (EMSI) Fellowship University of Notre Dame	**05/2003 – 06/2006**
PPG Industries Graduate student Poster Award at Notre Dame Environmental Education and Research Symposium	**Nov 2004**
Fellowship for "Spintech II International Conference and Summer School" held in Brugge (Belgium)	**Aug 2003**
Grant Writing Fellowship, University of Notre Dame	**05/2002 – 08/2002**

Teaching and Mentoring Experience

Teaching Assistant for Introductory (Freshman and Sophomore) Physics courses for Pre-medical and Engineering Students at University of Notre Dame.	**08/2000 - 08/2002**
Guest lecturer for Senior Seminar (Phys 434) at University of Notre Dame	**Spring 2006**
Mentored undergraduate and graduate students on several Research projects at University of Notre Dame, Princeton University, and Illinois Institute of Technology	**08/2005 – Present**
Lecturer for the laboratory section of "Global Warming: Causes, Consequences and Policy Response" (ENV 204B/GEO 104B) at Princeton University	**Spring 2009**
Guest lecturer for Environmental Chemistry (CHE 470) at Princeton University	**Spring 2009**
Invited lecturer for XAFS School at Brookhaven National Laboratory	**Fall 2010**
Invited Lecturer for XAFS School at IIT/Advanced Photon Source	**2012 - 2018**
General Physics III for Engineers (PHYS 228) at IIT	**Spring 2014**
General Physics I: Mechanics (PHYS 123) at IIT	**Spring & Summer 2015,**

Pollution Sampling and Analyses at University of Leeds **Spring 2016 Fall 2017 & 2018**

Funding

Awarded *(reflects only my portion of funding)*

Multi-User Facility for SAXS/WAXS Studies of Materials in Controlled Environments — **£110,800 (04/2018 – 03/2023) STFC, UK**

Co-PI: funded by Science and Technology Facilities Council, UK

Global Challenges Research Fund, Harvesting Solar Energy for Water Purification — **£55,450 (12/2017 – 11/2020) Royal Society, UK**

Co-PI: funded by Royal Society, UK

Waste to products for water decontamination — **£68,500 (08/2017 – 07/2018) EPSRC, UK**

PI: funded by Engineering and Physical Sciences Research Council, UK

Resolving conflicting physical and biochemical feedbacks to climate in response to long-term warming — **$105,100 (10/2016 – 09/2019) DOE-BER**

Co.P.I; funded by US-DOE (Terrestrial Ecosystem Science program)

Highly reactive thiol binding sites on bacterial cell envelopes and their influence on metal speciation in aquatic systems — **$71,000 (03/2015 – 02/2017) NSF- Geobiology & LT Geochemistry**

Co.P.I; funded by US-NSF (Geobiology and Low-Temperature Geochemistry program)

Small Worlds – X-ray Imaging at Nanoscale — **$322,000 (9/2015 – 8/2018) DOE-BER**

(*Sub-contract to P.I. Bhoopesh Mishra from DOE/Argonne National Laboratory through an inter-agency agreement*)

Role of Fe and S in the Molecular Mechanisms of the Transformations of Mercury (*Sub-contract to P.I. Bhoopesh Mishra from DOE/Argonne National Laboratory through an inter-agency agreement*)	**$445,000 (10/2011 – 9/2015)** **DOE-BER**
Iron speciation, reactivity and stability in Iron deficiency drug complex (*Funding to P.I. Bhoopesh Mishra from a Biopharmaceutical Company*)	**$42,000 (01/2012 – 10/2014)** **Rockwell Medical Technologies**
XAFS International Conference Travel Grant	**$850 (July 2006)**
Zahm Research Travel Grant, Univ. of Notre Dame	**$ 500 (Dec 2005)**
Bayer Predoctoral Fellowship	**$ 20,000 (07/2005 – 07/2006)**
Environmental Molecular Science Institute Fellowship, Univ. of Notre Dame	**$ 81,000 (05/2003 – 05/2006)**
Grant Writing Fellowship, Univ. of Notre Dame	**$ 3,600 (05/2002 – 08/2002)**

Professional Services

- Reviewer for *Environmental Science and Technology, Journal of Environmental Engineering*, *Journal of American Chemical Society, BioMetals, Water Research*, *Geochimica et Cosmochimica Acta, Chemical Geology, Chemosphere, Chemical Speciation and Bioavailability, and Journal of Synchrotron Radiation.*
- Reviewer for *National Science Foundation* (NSF), *Geobiology and Low-temperature Geochemistry* program since 2008
- Associate Editor of *Geochemical News* (2009).
- Co-organizer and Session Chair of a symposium in ACS National Meeting titled "Siderophores: From Biogeochemistry to Medical Applications". Philadelphia, PA (August 2008)
  This symposium was co-sponsored by Divisions of Geochemistry and Bioinorganic Chemistry.
- Invited Lecturer at XAFS School of Brookhaven National Laboratory for intermediate and advanced EXAFS practitioners (Nov 2010).

- Member of Proposal Review Panel for X-ray Spectroscopy: Biological, Environmental and Geosciences at National Synchrotron Light Source. (Dec 2010 to Dec 2013).
- Member of the board of experts for proposal reviews at Canadian Light Source. (May 2012 to May 2015).
- Lecturer at XAFS School of IIT/Argonne National Laboratory for EXAFS Practitioners (July 2012 - 2018).
- Member of Proposal Review Panel for X-ray Imaging (Nano-probe) at Advanced Photon Source. (Jan 2016 to Jan 2019).
- Session Chair of a symposium in ACS National Meeting titled "Metal Sorption on Geomedia III". San Diego, CA (March 2016)
- Invited Guest Professor in Department of Environmental Geosciences at University of Vienna (May – June 2017)
- Co-organizer of a symposium at Goldschmidt 2017 titled "Metal and metalloid contaminant dynamics in environmental systems – novel insights from stable isotope and spectroscopic approaches". Paris, France (Aug. 2017)
- Session Chair of a symposium in International Union of Crystallography (IUCr) titled "Spectroscopic Approaches in biologically relevant systems". Hyderabad, India (Aug. 2017)
- Co-organizer of a symposium at Asia Oceania Geological Society (AOGS) titled "Metal-microbe interactions in Terrestrial and Aquatic Ecosystems". Honolulu Hawaii (June 2018)
- School International Lead (Feb 2018 – Present)

Publication

(Peer Reviewed)

In Review/Revision

Bhoopesh Mishra, Jeremy Fein, Satish Myneni, "Role of High Affinity Thiol Sites on Bacterial Cell Envelope in Metal Biogeochemistry – A critical Review" (*Environmental Science and Technology*)

Bhoopesh Mishra, Edward O'Loughlin, Maxim Boyanov, Kenneth Kemner, "Heterogeneous reduction of Hg^{II} by Mn^{II}" (*Environmental Science and Technology Letters*)

Bhoopesh Mishra, Louis M. McDonald, Mimi Roy, Antonio Lanzirotti, Satish C.B Myneni, "Uptake and speciation of zinc in edible plants grown in smelter contaminated soils", (*PlosOne)*

Sara A. Thomas, **Bhoopesh Mishra**, and Satish C. B. Myneni, "High energy resolution (HR)-XANES spectroscopy reveals the Zn coordination and ligation environment in Gram-positive and Gram-negative bacteria" *(Journal of American Chemical Society)*

L. J.R. Higgins, T. Araki, B. Kaulich, A. Brown, A. B. Ross, **B. Mishra**, "Evidence for Shell-Core Model of Hydrothermal Carbon", *(Carbon)*

Published: (total 33, H-index 17, Google Scholar Citations >800)

Ajay Gupta, Raymond Pratt, **Bhoopesh Mishra**, "Physicochemical characterization of ferric pyrophosphate citrate", *Biometals*, https://doi.org/10.1007/s10534-018-0151-1 (2018)

LH Al-Madhagi, SY Chang, M Balasubramanian, AB Kroner, EJ Shotton, EA Willneff, **B Mishra**, SLM Schroeder, "X-ray Raman Scattering: A New In Situ Probe of Molecular Structure during Nucleation and Crystallization from Liquid Solutions" *CrystEngComm*, **20**, 6871-6884 (2018)

Yuwei Wang, Jeffra Schaefer, **Bhoopesh Mishra**, Nathan Yee, "Adsorption of Methylmercury onto *Geobacter bemidijensis* Bem" *Environmental Science & Technology*, **52**, 11564-11572 (2018)

Sen Yan, Maxim I Boyanov, **Bhoopesh Mishra**, Kenneth M Kemner, Edward J O'Loughlin**, "**U(VI) Reduction by Biogenic and Abiotic Hydroxycarbonate Green Rusts: Impacts on U(IV) Speciation and Stability Over Time", *Environmental Science & Technology*, **52**, 4601-4609 (2018)

Man Jae Kwon, Maxim I Boyanov, Jung-Seok Yang, Seunghak Lee, Yun Ho Hwang, Ju Yeon Lee, **Bhoopesh Mishra**, Kenneth M Kemner, "Transformation of zinc-concentrate in surface and subsurface environments: Implications for assessing zinc mobility/toxicity and choosing an optimal remediation strategy", **226**, 346-355

Bhoopesh Mishra, Elizabeth Shoenfelt, Qiang Yu, Nathan Yee, Jeremy B. Fein, Satish C.B. Myneni, "Stoichiometry of Hg-thiol complexes on bacterial cell envelopes", *Chemical Geology,* **464**, 137-146 (2017)

Yuwei Wang, Jeffra Schaefer, **Bhoopesh Mishra**, Nathan Yee, "Intracellular Hg (0) oxidation in Desulfovibrio desulfuricans ND132" *Environmental Science & Technology*, **50**, 11049-11056 (2016)

Drew E. Latta, Kenneth M. Kemner, **Bhoopesh Mishra**, Maxim I. Boyanov, "Effects of calcium and phosphate on uranium(IV) oxidation: comparison between nano-particulate uraninite and amorphous U(IV)-phosphate", *Geochimica et Cosmochimica Acta,* **174**, 122-142, (2016)

Wharton Sinkler, Sergio I Sanchez, Steven A. Bradley, Jianguo Wen, **Bhoopesh Mishra**, Shelly D. Kelly, and Simon R. Bare, "Aberration-corrected Transmission Electron Microscopy and in situ XAFS Structural Characterization of Pt/□-Al_2O_3 Nanoparticles", *ChemCatChem,* **7**(22), 3779-3787 (2015)

Matthew E. Potter, A. James Paterson, **Bhoopesh Mishra**, Shelly D. Kelly, Simon R. Bare, Furio Corà, Alan B. Levy, and Robert Raja, "Spectroscopic and computational insights on catalytic synergy in bimetallic aluminophosphate catalysts", *Journal of the American Chemical Society*, **137**, 8534-8540 (2015)

Sarrah Dunham-Cheatham, **Bhoopesh Mishra**, Satish Myneni, and Jeremy B. Fein, "The effect of natural organic matter on the adsorption of mercury to bacterial cells", *Geochimica et Cosmochimica Acta,* **150**, 1-10 (2015)

Bjorn P. Von der Heyden, Emily J. Hauser, **Bhoopesh Mishra**, Gustavo A. Martinez, Andrew R. Bowie, Tolek Tyliszczak, Thato N. Mtshali, Alakendra N. Roychoudhury, Satich C.B. Myneni, "Ubiquitous presence of Fe(II) in aquatic colloids and its association with organic carbon", *Environmental Science and Technology Letters,* **1** (10), 387-392 (2014)

Baohua Gu, **Bhoopesh Mishra,** Wei Wang, Carrie Miller, Barry Lai, Kenneth Kemner, Liyuan Liang, "X-ray fluorescence mapping of mercury on suspended mineral particles and diatoms in a contaminated freshwater system" *Biogeosciences,* **11** (5), 7521-7540 (2014)

Theodore M. Flynn, Edward J. O'Loughlin, **Bhoopesh Mishra**, Thomas J. DiChristina, Kenneth M. Kemner, "Sulfur mediated electron shuttling during bacterial iron reduction", *Science,* **344** (6187), 1039-1042 (2014)

(*Invited Book Chapter*) Satish Myneni**, Bhoopesh Mishra**, Michael Hay, "Applications of scanning transmission x-ray microscopy in studying clays and their chemical interactions*" In* G. Waychunas (ed.), *CMS Workshop Lecture Series v. **19**: Advanced Applications of Synchrotron Radiation in Clay Science*. *Clay Mineral Society of America,* 231-261 (2014)

Sarrah Dunham-Cheatham, Brian Farrell, **Bhoopesh Mishra**, Satish Myneni, and Jeremy B. Fein, "The effect of chloride on the adsorption of Hg onto three bacterial species", *Chemical Geology,* **373***,* 106-114 (2014)

Drew E. Latta, **Bhoopesh Mishra**, Russel E. Cook, Kenneth M. Kemner, Maxim I. Boyanov, "Stable U(IV) complexes form at high-affinity mineral surface sites", *Environmental Science and Technology,* **48***,* 1683-1691 (2014)

Timothy Pasakarnis, Maxim Boyanov, Kenneth Kemner, **Bhoopesh Mishra**, Edward O'Loughlin, Gene Parkin, Michelle Scherer, "Influence of chloride and Fe^{II} content on the reduction of Hg^{II} by magnetite" *Environmental Science and Technology*, **47,** 6987-6994 (2013)

Hung Bok Jung, Maxim I. Boyanov, Hiromi Konishi, **Bhoopesh Mishra**, Kenneth M. Kemner, Eric E. Roden, Huifang Xu, "Redox Behavior of Uranium on Nanoporous Aluminum Oxide Surafce: Implication for Uranium Remediation" *Environmental Science and Technology*, **46**, 7301-7309 (2012)

Bulbul Ahmed, Bin Cao, **Bhoopesh Mishra**, Maxim Boyanov, Kenneth Kemner, Jim K. Fredrickson, Haluk Beyenal, "Immobilization of U(VI) from oxic groundwater by Hanford 300 Area sediments and effects of Columbia River Water", *Water Research,* **46***,* 3989-3998 (2012)

Hung Duc Nguyen, Bin Cao, **Bhoopesh Mishra**, Maxim Boyanov, Kenneth Kemner, Jim K. Fredrickson, Haluk Beyenal, "Microscale geochemical conditions in subsurface sediment biofilm

from the Hanford 300 Area sediment biofilm and influence of uranium", *Water Research,* **46**, 227-234 (2012)

Bhoopesh Mishra, Edward O'Loughlin, Maxim Boyanov, Kenneth Kemner, "Binding of Hg(II) to High-Affinity Sites on Bacteria Inhibits Reduction to Hg(0) by Mixed Fe(II/III) Phases" *Environmental Science and Technology*, **45**, 9597-9603 (2011)

Bhoopesh Mishra, Elizabeth A. Haack, Patricia A. Maurice, Bruce A. Bunker, "A Spectroscopic Study of the Effects of a Microbial Siderophore on Pb Adsorption to Kaolinite" *Chemical Geology,* **275** (3-4), 199 – 207 (2010)

Bhoopesh Mishra, Maxim I. Boyanov, Bruce A. Bunker,, Shelly D. Kelly, Kenneth M. Kemner, and Jeremy B. Fein "High- and low-affinity binding sites for Cd on the bacterial cell walls of *Bacillus subtilis* and *Shewanella oneidensis*" *Geochimica et Cosmochimica Acta*, **74** (15), 4219 – 4322 (2010)

Kyler Carroll, Garry Glaspel, Nicholas McDowall, Kenneth Kemner, **Bhoopesh Mishra**, Maxim Boyanov, Daniel Hudgins, Lester Brown, Steven Spurgeon, Mitra Taheri, John Anderson, Everett Carpenter, "One-Pot Aqueous Synthesis of Fe and Ag Core/Shell Nanoparticles", *Chemistry of Materials*, **22**, 6291-6296 (2010)

Thomas Wichard*, **Bhoopesh Mishra***, Satish C.B. Myneni, Jean-Phillipe Bellenger, Anne M.L. Kraepiel, "Storage and bioavailability of Mo in soils increased by organic matter complexation" *Nature Geoscience,* **2***,* 625-629 (2009) ***Corresponding author and joint first author***

Bhoopesh Mishra, Elizabeth A. Haack, Patricia A. Maurice, Bruce A. Bunker, "Effects of Microbial Siderophore DFO-B on Pb and Cd Speciation in Aqueous Solution" *Environmental Science and Technology*, **43**(1), 94-100 (2009)

Bhoopesh Mishra, Maxim I. Boyanov, Bruce A. Bunker,, Shelly D. Kelly, Kenneth M. Kemner, Robert Nerenberg, Brenda L. Read-Daily, and Jeremy B. Fein "An X-ray Absorption Spectroscopy Study of Cd Binding Onto Bacterial Consortia" *Geochimica et Cosmochimica Acta*, **73**(15), 4311- 4325 (2009)

(*Invited Review*) Patricia Maurice, Elizabeth Haack, **Bhoopesh Mishra**, "Siderophores Sorption to Clays" *BioMetals*, **22**(4), 649-658 (2009)

John Komlos, **Bhoopesh Mishra**, Antonio Lanzirotti, Satish C.B. Myneni and Peter R. Jaffé, "Real Time Speciation of Uranium during Active Bioremediation and U(IV) Reoxidation" *Journal of Environmental Engineering*, **134**(2), 78-86 (2008)

Bhoopesh Mishra, Jeremy B. Fein, Shelly D. Kelly, Maxim B. Boyanov, Kenneth M. Kemner, Bruce A. Bunker, "Comparison of Cd Binding Mechanisms by Gram-positive, Gram-negative and Consortia of Bacteria Using XAFS", *American Institute of Physics Conference Proceedings*, **882**, 343-347 (2007)

Bhoopesh Mishra, Elizabeth A. Haack, Igor Vasconcelos, Patricia A. Maurice, Bruce A. Bunker, "XAFS determination of Pb and Cd speciation with siderophores and metal/siderophore/kaolinite system", *American Institute of Physics Conference Proceedings*, **882**, 196-199 (2007)

Debdutta Lahiri, Bruce Bunker, **Bhoopesh Mishra**, Zhenyuan Zhang, Dan Meisel, C.M. Doudna, M.F. Bertini, Frank D. Blum, A.T. Tokuhiro, Soma Chattopadhyay, Tomohiro Shibata, Jeff Terry, "Bimetallic Pt-Ag and Pd-Ag nanoparticles", *Journal of Applied Physics,* **97**, (9), 943041-943047 (2005)

Guest Editor

Anne Kraepiel and **Bhoopesh Mishra**, "Symposium on Siderophores held at the ACS Meeting in Philadelphia, USA, 2008", *Biometals* **22** (4), 557-695 (2009)

Invited Presentations* (33)

**This list does not include co-authored oral presentations, extended abstracts, and poster presentations at National and International conferences.*

Bhoopesh Mishra, "Bio-products for Sustainable Resource Recovery and Contaminant Immobilization" at Optics Photonics and Synchrotron Radiation (OPSR) Indore, India (April 2018)

Bhoopesh Mishra, "Towards a mechanistic understanding of mercury –microbe/mineral interactions" Indian Institute of Science Education and Research Kolkata, India. (Jan. 2018)

Bhoopesh Mishra, "Towards a mechanistic understanding of mercury –microbe/mineral interactions" International Union of Crystallography (IUCr) Conference Hyderabad, India. (Aug. 2017)

Bhoopesh Mishra, "EXAFS Data Processing and Analysis" X-ray Absorption Spectroscopy (XAS) Workshop, held at International Union of Crystallography (IUCr) Hyderabad, India (Aug. 2017)

Bhoopesh Mishra, "Application of Synchrotron Radiation in Environmental Biogeochemistry" University of Vienna (May-June, 2017).

Bhoopesh Mishra, "Towards a mechanistic understanding of mercury –microbe/mineral interactions" Department seminar at University of Newcastle, UK (May 2017)

Bhoopesh Mishra, "Applications of X-ray Raman Scattering for In-situ Material Characterization" American Chemical Society Meeting, San Francisco, USA (April 2017)

Bhoopesh Mishra, "Towards a mechanistic understanding of mercury –microbe/mineral interactions" Department seminar at University of Vienna, Austria (March 2017)

Bhoopesh Mishra, **"**Marriage of X-ray Spectroscopy and Microscopy for Trace Element Analysis in Biological and Environmental Systems" 2016 Denver X-ray Conference, Aug 2016

Bhoopesh Mishra, **"**Biogeochemical Controls on Contaminant and Nutrient Cycling" User Meeting, Advanced Photon Source, June 2016

Bhoopesh Mishra, "Synchrotron Radiation Techniques: Opportunities for Chemical Product and Process Engineering" University of Leeds, Leeds (United Kingdom), Nov 2015

Bhoopesh Mishra, **"**Biogeochemistry of the molecular scale interactions of metals with bacteria" Colloquium, Chemistry Department, Illinois Institute of Technology, Chicago, IL, Nov. 2015

Bhoopesh Mishra, "Biogeochemical Controls on Contaminant and Nutrient Cycling in Aquatic and Terrestrial Ecosystems", University of Leeds, Leeds (United Kingdom), Oct 2015

Bhoopesh Mishra, **"**Use of Synchrotron Techniques for Climate Change Research" Colloquium, Physics Department, Illinois Institute of Technology, Chicago, IL, March 2015

Bhoopesh Mishra, "Molecular Scale Transformations of Mercury at Bacteria- and Mineral-Water Interfaces", Seminar, Department of Civil and Environmental Engineering, Northwestern University, Evanston, IL, January 2015

Bhoopesh Mishra, "Why should we study carbon chemistry using X-ray Raman?", Synchrotron Environmental Science – VI, Chicago, Sep. 2014

Bhoopesh Mishra, "Adsorption and Desorption mechanism of metals on bacterial cell envelope" 245th American Chemical Society Meeting, New Orleans, LA, April 2013

Bhoopesh Mishra, "Application of Synchrotron X-ray techniques on Environmental and Biological systems" Department of Plant and Soil Sciences, West Virginia University, Morgantown, WV, Jan 2013

Bhoopesh Mishra, "The Science and Art of XAFS", Stanford Linear Accelerator Center National Laboratory, CA, May 2012

Bhoopesh Mishra, "Are All Bacteria Alike?" Department of Geology, Seminar, Kansas State University, Manhattan, KS, Feb 2012

Bhoopesh Mishra, "A Story of Atoms Around Us – Applications of Synchrotron Radiation in Environmental Science", Colloquium, Department of Physics, Illinois Institute of Technology, Chicago, IL, June 2011

Bhoopesh Mishra, "Molecular Environmental Science – Application of Synchrotron Radiation in Biogeochemistry", Brown Bag Seminar, Argonne National Laboratory, Lemont, IL, June 2011

Bhoopesh Mishra, "A Story of Atoms Around Us – Applications of Synchrotron Radiation in Environmental Science", Department of Biosystems Engineering and Environmental Sciences, University of Tennessee, Knoxville, TN, May 2011

Bhoopesh Mishra, "Application of XAS to Environmental Science – Case Studies and the *NEED* for Multiple Data Set Analysis", NSLS XAFS School, Brookhaven National Laboratory, Long Island, NY, Nov 2010

Bhoopesh Mishra, "Molecular Scale Interactions of Hg during Abiotic and Biotic Processes", User Science Seminar, Advanced Photon Source, Argonne National Laboratory, Lemont, IL, June 2010

Bhoopesh Mishra, "Molecular Scale Interactions of Hg during Microbial and Biotic Processes", Seminar, Department of Geological Sciences, University of Alabama, Tuscaloosa, AL, April 2010

Bhoopesh Mishra, "Using X-ray microscpectroscopy to study metal-microbe-mineral interactions", Division, Seminar, Biosciences Division, Argonne National Laboratory, Lemont, IL, November 2009

Bhoopesh Mishra, "Hg(II) Complexation to Bacterial Surfaces: A Molecular-scale perspective", Division Seminar, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, September 2009

Bhoopesh Mishra, "Role of Bacterial surfaces in Mobility and Bioavailability of Metals", Department Seminar, Department of Environmental Sciences, Rutgers University, New Brunswick, NJ, October 2008

Bhoopesh Mishra, "Bacterial Surface Chemistry - Implications on Metal Transport and Bioavailability", Department Seminar, Department of Geosciences, Princeton University, Princeton, NJ, October 2008

Bhoopesh Mishra, "Metal Adsorption on Microbial Cells - Implications on Metal Transport in Natural Systems", National Synchrotron Light Source Lunch Seminar Series, Brookhaven National Laboratory, Long Island, NY, August 2007

Bhoopesh Mishra, "Understanding Metal-Microbe Interaction Using Molecular Approaches", Department Seminar, Department of Civil Engineering and Geological Sciences, University of Notre Dame, South Bend, IN, June 2006

Bhoopesh Mishra, "A Physicist Explores the Environment", Condensed Matter Seminar, Department of Physics, University of Notre Dame, South Bend, IN, September 2004

Selected Oral Presentations* (18)

**This list does not include co-authored oral presentations, extended abstracts, and poster presentations at National and International conferences.*

Bhoopesh Mishra, "Bio-products for Sustainable Resource Recovery and Contaminant Immobilization" at Biochar Conference, Delaware USA (August 2018)

Bhoopesh Mishra, "Bio-products for Sustainable Resource Recovery and Contaminant Immobilization" at Goldschmidt International Conference, Boston USA (August 2018)

Bhoopesh Mishra*,* Maxim I. Boyanov, Edward J. O'Loughlin, Kenneth M. Kemner*,* **"**Biogeochemical controls on the molecular scale interactions of mercury with microbes**"** Goldschmidt International Conference, Prague, Czech Republic, Aug 2015

Bhoopesh Mishra, Ed J. O'Loughlin, Julie Jastrow, William T. Cooper, Malak Tfaily, Chao Liang,

Mahalingam Balasubramanian, Robert Gordon, Kenneth M Kemner **"**Using X-ray Raman to Study Soil Carbon Biogeochemistry" 16th International Conference on X-ray Absorption Fine Structure, Karlsruhe, Germany, Aug 2015

Bhoopesh Mishra*,* Maxim I. Boyanov, Edward J. O'Loughlin, Kenneth M. Kemner*,* **"**Reduction of Hg^{II} by Mn^{II}**"** Goldschmidt International Conference, Sacramento, CA, June 2014

Bhoopesh Mishra, Ed J. O'Loughlin, Julie Jastrow, Mahalingam Balasubramanian, Kenneth M Kemner **"**Non-resonant inelastic X-ray scattering to analyze carbon chemistry in unaltered samples" 245th American Chemical Society Meeting, New Orleans, LA, April 2013

Bhoopesh Mishra*,* Maxim I. Boyanov, Edward J. O'Loughlin, Kenneth M. Kemner*,* **"**Reduction of Hg^{II} by Fe^{II} sorbed to minerals**"** 245th American Chemical Society Meeting, New Orleans, LA, April 2013

Bhoopesh Mishra, "Abiotic Redox Transformations of Mercury", 244rth American Chemical Society Meeting, Philadelphia, PA, Aug 2012

Bhoopesh Mishra, "Ligand Effects on Mercury reduction by Magnetite", Goldschmidt International Conference, Montreal, Canada, July 2012

Bhoopesh Mishra, "Binding of Hg^{II} to high affinity sites on bacteria inhibits reduction to Hg^{0} by mixed $Fe^{II/III}$ phases", 242nd American Chemical Society Meeting, Denver, CO, Aug 2011

Bhoopesh Mishra, "Role of sulfhydryls on bacterial cell walls in the biosorption of mercury", 10th International Conference on Mercury as Global Pollutant, Halifax, Canada, July 2011

Bhoopesh Mishra, "Binding of Hg^{II} to high affinity sites on bacteria inhibits reduction to Hg^{0} by mixed $Fe^{II/III}$ phases", 10th International Conference on Mercury as Global Pollutant, Halifax, Canada, July 2011

Bhoopesh Mishra, Jeremy Fein, Nathan Yee, Terry Beveridge, Satish Myneni, "Hg Adsorption and Speciation on Bacterial Surfaces", Goldschmidt International Conference, Knoxville, TN, June 2010

Bhoopesh Mishra, Michael Hay, Satish C.B. Myneni, "Al Coordination and Speciation on Hydrated Mineral Surfaces", Goldschmidt 2008, Vancouver, Canada, July 2008

Bhoopesh Mishra, Jeremy B. Fein, Shelly D. Kelly, Maxim Boyanov, Kenneth M. Kemner, Bruce A. Bunker, "Metal Adsorption Mechanism on Bacterial Cell Walls – Using Cd as a Model", 233rd American Chemical Society Meeting, Chicago, IL, March 2007

Bhoopesh Mishra, Elizabeth A. Haack, Patricia A. Maurice, Bruce A. Bunker, "Effects of microbial siderophores on Pb speciation and adsorption: Combining EXAFS analysis, thermodynamic modeling, and Quantum Chemistry Calculations", Synchrotron Environmental Science (III), Brookhaven National Laboratory, Long Island, NY, September 2005

Bhoopesh Mishra, Elizabeth A. Haack, Patricia A. Maurice, Bruce A. Bunker, " Pb speciation in the presence of siderophores: An example of the importance of molecular approaches in

environmental biogeochemistry", 230th American Chemical Society Meeting, Washington D.C, August 2005

Bhoopesh Mishra, Elizabeth A. Haack, Patricia A. Maurice, Bruce A. Bunker, "Effect of siderophores on Pb adsorption to kaolinite", 229th American Chemical Society Meeting, San Diego, CA, March 2005

Professional Memberships

Asia Oceania Geosciences Society
European Geosciences Union
American Geophysical Union
American Chemical Society
Mineralogical Society of America
XAFS International Society
Sigma Xi

Media Highlight / Popular Press

R&D Magazine editor's pick and Brookhaven Research Highlight, "*An elegant cycle*" science highlight and exclusive interview based on *Nature Geoscience,* **2***,* 625-629 (2009) article. (Nov 2010)
https://www.bnl.gov/newsroom/news.php?a=22123

News article in Phys.org and Argonne News Highlight "*Argonne scientist works to contain mercury, protect fish*" (June 2012). A science highlight and exclusive interview based on *Environmental Science and Technology*, **45**, 9597-9603 (2011)
http://www.anl.gov/articles/x-ray-technology-spotlights-new-way-contain-mercury-contamination-protect-fish

News article in Phys.org and Argonne News Highlight "Study in 'Science' finds missing piece of biogeochemical puzzle in aquifers" (May 2014). A science highlight based on *Science*, **344** (6187), 1039-1042 (2014)
http://www.anl.gov/articles/study-science-finds-missing-piece-biogeochemical-puzzle-aquifers