

**JEFFREY W. TALLEY, Ph. D., P. E.**

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Dr. Talley is an Associate Professor of Environmental Engineering at the University of Notre Dame who specializes in the environmental processes and treatment of contaminated surface water, groundwater, soil and sediment. Dr. Talley's research areas are *environmental processes and environmental sensor development*. Dr. Talley teaches the following undergraduate and graduate courses: *Introduction to Environmental Engineering and Science, Water Chemistry and Treatment, Hazardous Waste Management and Design, and Physicochemical Processes and Treatment of Pollutants*.

Dr. Talley's environmental processes work is noted for his innovative applications of thermal programmed desorption mass spectrometry for the assessment of the availability of pollutants bound to sediments/soils and his contributions to the development of novel treatment technologies. His research interests include the examination of physicochemical and microbial processes for application to hazardous waste reduction with focus on the phase partitioning of hydrophobic organic compounds (dioxins, PCBs, PAHs, DDT), other tightly bound pollutants (TNT, RDX, HMX), and select inorganic contaminants (Hg, Pb, Cr, and As). Dr. Talley's environmental processes research group works closely with federal research laboratories, industry and consulting firms.

Dr. Talley's environmental sensor development work involves the integration of embedded wireless networks with environmental nodes and novel sensors to form intelligent systems to measure and assess environmental variables. His work on municipal sewer systems (in collaboration with others) has resulted in a new technology to detect, monitor, and control combined sewer overflow (CSO) events (CSONet). Recently, Dr. Talley's research group developed an *E. Coli* sensor, which when linked to the CSONet platform, will serve as an early warning system for pathogen outbreak in recreational waters or in response to bioterrorism attacks. Dr. Talley's environmental sensor development research group works closely with the National Centre for Sensor Research in Dublin, Ireland.

Prior to his appointment at Notre Dame, Dr. Talley spent 20 years in design, consulting and military positions involving more than 100 different hazardous waste sites throughout the U.S. and abroad. In 2003, Dr. Talley was in the Middle East with the U.S. Army Corps of Engineers conducting civil and environmental engineering projects throughout Kuwait and Iraq. Of special significance was his environmental work with Task Force Restore Iraqi Oil (TF RIO), where he assisted in the assessment and remediation recommendations for multiple oil-waste impacted sites in Iraq. Dr. Talley is also a part-time Associate with Malcolm Pirnie Inc., a leading national environmental engineering consulting firm.

## **EXPERIENCE**

2006-Present Associate Professor, Department of Civil Engineering and Geological Sciences,  
University of Notre Dame

2003-2007 Faculty Member, NSF Environmental Molecular Science Institute at Notre Dame

2001-2006 Assistant Professor, Department of Civil Engineering and Geological Sciences,  
University of Notre Dame

1996-2001 Research Environmental Engineer and Biotechnology Research Team Leader,  
Environmental Laboratory, Waterways Experiment Station

1992-1996 Environmental Engineer, Hazardous, Toxic, Radiological Waste Branch,  
Engineering Division, Baltimore District, U.S. Army Corps of Engineers

1981-1992 Engineer Officer (Regular Army), U.S. Army Corps of Engineers

## **EDUCATION**

M.S.S. U.S. Army War College, 2003, Strategic Studies

Ph.D. Carnegie Mellon University, 2000, Civil and Environmental Engineering  
Advisor: Dr. Dick G. Luthy (currently at Stanford University)

M.S.E. The Johns Hopkins University, 1995, Environmental Engineering and Science  
Advisor: Dr. Ed Bouwer

M.L.A. Washington University in St. Louis, 1988, Liberal Arts (History/Philosophy)

M.A. Assumption College, 1985, Religious Studies

B.S. Louisiana State University, 1981, Forestry (Environmental Science)

## **PROFESSIONAL REGISTRATION AND LICENSING**

Professional Engineer (Environmental Engineering), Commonwealth of Virginia (#0402035885)

## **SELECT AWARDS AND RECOGNITION**

2007 Reverend Edmund P. Joyce Award for Excellence in Undergraduate Teaching

2006 Tau Beta Pi National Honorary Engineering Society - University of Notre Dame Chapter

2005 Joint Commendation Medal, Department of Defense

2004 Best Research Award – Presentation (with other collaborators), International Symposium  
on Recent Advances in Pharmacology

2003 Bronze Star Medal (for Civil and Environmental Engineering in Iraq/Kuwait), U.S. Army

2002 ASCE Excellence in Civil Engineering Education Teaching Fellowship

2001 Phi Kappa Phi National Honors Society – Carnegie Mellon University Chapter

2000 SERDP Environmental Research and Development Leadership Award

2000 Best Research Award – Poster (with other collaborators), Gordon Research Conference  
on Environmental Science

1999 SERDP Research Project of the Year for Cleanup (with other collaborators)

1998 Sigma Xi National Honors Research Society – Carnegie Mellon University Chapter

1997 Waterways Experiment Station Long Term Training at Carnegie Mellon University

1996 Engineering News Record Next Generation Research Award

1996 Bronze de Fleury Medal for Leadership in Engineering, U.S. Army Corps of Engineers

1995 Silver Medal for Outstanding Scientific Support, Federal Executive Board

1994 Young Engineer of the Year, Society of American Military Engineers

### **PATENTS (3)**

**Talley, J.W.**, Geary, J., Nijak, G., 2007. In-Situ, Near Real-Time Water Pathogen Detector, United States Provisional Patent Application, filed October, 1, 2007.

**Talley, J. W.**, Larson, S., Wolfe, L. G., Fisher, B., 2007. *Enhanced Apatite for the Remediation of Heavy Metal and Metalloid Pollutants*. United States Provisional Patent Application filed October 1, 2007.

Montestruque, L.; Lemmon, M., **Talley, J.W.**, 2006 (filed May 19, 2005). Distributed Monitoring and Control System (Combined Sewer Overflow Network – CSONet), (Docket No. 74538-012000). EmNet LLC has commercialized CSONet technology.

### **CITATION INDEX: 170**

#### **JOURNAL PUBLICATIONS (32)**

Gbondo-Tugbawa, S., **Talley, J.W.**, Garvey, E., McCain, J., Purkiss, C., Baker, J., Su, T., 2008 (in preparation). Comparison of four sampling techniques from monitoring hydrophobic organic compounds in surface waters. *Environmental Toxicology and Chemistry*.

**Talley, J.W.**, Liu, G., Nichols, S., 2008 (in preparation). Assessing the availability of mercury compounds in contaminated sediments. *Chemosphere*.

Wolfe, L. G., **Talley, J.W.**, 2008 (in preparation). Short-path thermal desorption mass spectrometry quantification of PAHs in soils and sediments. *Environmental Toxicology and Chemistry*.

Geary, J., **Talley, J.W.**, Nijack, G., 2008 (in preparation). Mechanisms and environmental parameters affecting the near real-time biosensing of *Escherichia Coli* in recreational waters. *Environmental Science and Technology*.

Fisher, B., **Talley, J.W.**, 2008 (in preparation). Arsenic availability and treatability using biogenetic templating of fishbone. *Environmental Science and Technology*.

**Talley, J.W.**, Ciu, X., Berveiler, P. 2008 (in preparation). Availability and biotreatment of PAHs in different surface soil matrices at an industrial site. *Environmental Science and Technology*.

**Talley, J.W.**, Wolfe, L.G., Hundal, L. S., Young, K.M. 2008 (in preparation). Biotreatability of 2,4,6-TNT using anaerobically digested biosolids in freshly amended and aged geosorbents. *Environmental Research*.

**Talley, J.W.**, Wolfe, L.G., Young, K.M. 2008 (in preparation). Preliminary Study on Composting of TNT using anaerobically digested biosolids. *Journal of Hazardous Materials*.

**Talley, J.W.**, Wolfe, L.G., Young, K.M. 2008 (in preparation). PAH availability from residual skeet fragments at a former shotgun range. *Environmental Pollution*.

Geary, J., **Talley, J.W.**, Wolfe, L.G., McDonald, S.D., Dobschuetz, J. 2008 (submitted). Fate of munitions constituents in the environment: a review. *Chemosphere*.

Liu, G.J., **Talley, J.W.**, 2007 (in press) Effect of NOM on arsenic adsorption by TiO<sub>2</sub> in simulated AS (III)-contaminated raw waters. *Water Research*.

Liu, G.J., Zhang, X.R., **Talley, J.W.**, Neal, C.R., 2007 (in press). Adsorption of arsenic onto TiO<sub>2</sub> in the presence and absence of NOM, *Journal of Environmental Toxicology and Chemistry*.

- Liu, G.J., Zhang, X.R., McWilliams L., **Talley, J.W.**, Neal, C.R., **2007** (in press). Influence of Ionic Strength, Electrolyte Type, and NOM on As (V) Adsorption onto TiO<sub>2</sub>. *Journal of Environmental Safety Health Assessment*.
- Liu, G.; Zhang, X., **Talley, J.W.**, **2007** (in press). Effect of Cu (II) on natural organic matter removal during drinking water coagulation using aluminum-based coagulants. *Water Environment Research*.
- Young, K. M.; **Talley, J.W.**, Larson, S.L., **2007** (accepted). Assessing the availability of TNT from mineral sorbents and real soils using thermal programmed desorption mass spectrometry. *Environmental Pollution*.
- Seders, L.A., Shea, C.A., Lemmon, M.D., Maurice, P.A., **Talley, J.W.**, **2007**. LakeNet: an integrated sensor network for environmental sensing in lakes. *Environmental Engineering and Science*, 24, No 2, 183-191.
- Ruggaber, T.P.; **Talley, J.W.** **2007**. Using Embedded Sensor Networks to Monitor, Control, and Reduce CSO Events: A Pilot Study. *Environmental Engineering and Science*, 24, No 2, 172-182.
- Pirnie, E. F.; **Talley, J.W.**, Hundal, L. S., **2006**. Abiotic transformation of DDT in aqueous solutions. *Chemosphere*, 65, 1576-1582.
- Pirnie, E. F.; **Talley, J.W.**, Hundal, L. S., **2006**. Transformation of DDT and its metabolites by various abiotic methods. *Journal of Environmental Engineering*, Vol. 132, No. 5, 560-564.
- Ruggaber, T.P.; **Talley, J.W.**, **2006**. Bioremediation using enzymatic processes: a review. *Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management*, Vol 10, Issue 2, 73-85.
- Nicholl, S.; **Talley, J.W.**, **2006**. Development for thermal programmed desorption mass spectrometry for environmental applications. *Chemosphere*, Vol. 63, Issue 1, 132-141.
- Zhang, X.; Echigo, S., Lei, H., Smith, M., Minear, R., **Talley, J. W.**, **2005**. Effects of temperature and chemical treatment on the formation of bromo-organic DBPs from ozonation of raw waters. *Water Research*, 39, 423-435.
- Talley, J.W.**; Ghosh, U., Tucker, S., Furey, J., Luthy, R.G., **2004**. Thermal programmed desorption of PAHs from mineral and organic surfaces. *Environmental Engineering Science*, Vol. 21, No. 6, 647-660.
- Fredrickson, H.; Furey, J., **Talley, J.W.**, Richmond, M., **2004**. Bioavailability of hydrophobic organic contaminants and quality of organic carbon. *Environmental Chemistry Letters*, 2, 77-81.
- Nicholl, S.; **Talley, J. W.**, Silliman, S., **2004**. Model verification of thermal programmed desorption-mass spectrometry for estimation of release energy values for PAHs on mineral sorbents. *Journal of Environmental Chemistry and Toxicology*, Vol. 23, No. 11, 2545-2550.
- Talley, J.W.**; Zhang, X., Waisner, S., Ringelberg, D., Hansen, L., **2004**. Characterization and bioremediation of petroleum hydrocarbon contaminated soil with smear zone at gasoline alley. *Journal of Environmental Engineering*, Vol. 130, No. 11, 1401-1406.
- Talley, J.W.**; Ghosh, U., Tucker, S., G., Furey, J., Luthy, R. G, **2002**. Particle-scale understanding of the bioavailability of PAHs in sediment. *Environmental Science & Technology*, Special Issue in honor of Professor James J. Morgan, 36 (3), 477-483.

- Gadomski, D.; Golden, E., Irvine, R., **Talley, J.W.**, Hundal, L., **2002**. Natural formation of dioxins: a review among four sites. *Organohalogen Compounds*, 59, 263-266.
- Stocking, A.J.; Deeb, R.A., Flores, A.E., Stringfellow, W., **Talley, J. W.**, Brownell, R., Kavanaugh, M., C., **2000**. Bioremediation of MTBE: a review from a practical perspective. *Biodegradation*, 11 (2-3), 187-201.
- Ringelberg, D.; **Talley, J.W.**, Perkins, E., Tuckers, S., Luthy, R.G., Bouwer, E., Fredrickson, H. Succession of phenotypic, genotypic, and metabolic community characteristics during in vitro bioslurry treatment of PAH-contaminated sediments. *Applied and Environmental Microbiology*, **2001**, 67 (4), 1542-1550.
- Ghosh, U.; **Talley, J.W.**, Luthy, R.G. Particle-scale investigation of PAH desorption kinetics and thermodynamics from sediment. *Environmental Science and Technology*, **2001**, 35 (17), 3468-3475.
- Talley, J.W.**; Sleeper, P. Roadblocks to the implementation of biotreatment strategies. *Bioremediation of Surface and Subsurface Contamination, Annals of the New York Academy of Sciences*, **1997**, Vol 829, Issue 1 16-29.

### **BOOKS AND BOOK CHAPTERS (12)**

- Talley, J.W.**, Fisher, B., Hanson, D., **2007**. Treatability of Arsenic Contaminated Groundwater Using Enhanced Apatite Battelle Press, Columbus, OH. (in press).
- Young, K. M.; Hundal, L., Hunn, J., **Talley, J.W.**, **2005**. Composting of 2,4,6-trinitrotoluene with anaerobically digested biosolids. Battelle Press, Columbus, OH.
- Talley, J.W. (Editor)**, **2005**. Bioremediation of Recalcitrant Compounds. CRC-Lewis Press, Boca Raton, FL.
- Talley, J.W.** Chapter 1. Introduction to recalcitrant compounds.
- Fredrickson, H.; Furey, J.S., Talley, J.W. Chapter 2. Toxicological exposure of bound recalcitrant compounds.
- Talley, J.W.** Chapter 3. Roadblocks to the implementation of biotreatment strategies.
- Talley, J.W.** Chapter 4. The Federal integrated biotreatment research consortium (flask to field).
- Prichard, H.; Jones-Meehan, J., Nestler, C., Hansen, L.D., Jones, W., Hind, J., **Talley, J.W.** Chapter 8. Polycyclic aromatic hydrocarbons (PAHs) - improved land treatment with bioaugmentation.
- Talley, J.W.** Chapter 9. Future needs for research and development.
- Wani, A.; Hansen, L., **Talley J. W.**, Waisner, S., Ringelberg, D. **2001**. Treatability study for total petroleum hydrocarbons contamination at gasoline alley. In-Situ Aeration and Aerobic Remediation. Battelle Press, Columbus, OH. Edited by A. Leeson, V.S. Magar. 6(10) 115-122.
- Talley, J. W.**; Felt, D. R., Hansen, L., Spain, J., Pritchard, H., Sewell, G. W., Tiedje, J.M., **2001**. The federal integrated biotreatment research consortium (flask to field). Anaerobic Degradation of chlorinated Solvents. Battelle Press, Columbus, OH. Edited by A. Leeson, V.S. Magar. 6(7) 125-132.

- Nestler, C.; Hansen, L., Ringelberg, D., **Talley, J. W.**, **2001**. Remediation of soil PAH: comparison of biostimulation and bioaugmentation. Ex-Situ Biological Treatment Technologies. Battelle Press, Columbus, OH. Edited by A. Leeson, V.S. Magar. 6(6) 43-50.
- Nestler, C.; Hansen, L., Waisner, S., **Talley, J. W.**, **2001**. Monitoring bioremediation through in-situ soil respiration. Innovative Methods in Support of Bioremediation. Battelle Press, Columbus, OH. Edited by A. Leeson, V.S. Magar. 6(4) 59-66.
- Talley, J. W.**; Ghosh, U., Luthy, R. G., **2001**. Availability and bioslurry treatment of PAHs in contaminated dredged materials. Bioremediation of Energetics, Phenolics, and Polycyclic Aromatic Hydrocarbons. Battelle Press. Columbus, OH. Edited by A. Leeson, V.S. Magar. 6(3) 189-196. sabbatical
- Talley, J.W.**; Hatzinger, P. B, Waisner, S. A., Goldstein, K., Navon, D., Heckleman, C. A, Senick, M., **2000**. Bioremediation of polycyclic aromatic hydrocarbons (PAHs) at the watervliet arsenal. Case Studies in the Remediation of Chlorinated and Recalcitrant Compounds, Battelle Press. Columbus, OH. Edited by G. B. Wickramanayake, A. Arun. 2 (7) 213-220.
- Talley, J. W.**; Goldstein, K. J, Schaar, R. G., Hatzinger, P. B., Chaki, S., Senrick, M., **1999**. Bioremediating PAHs and TPH at watervliet arsenal. Bioreactor and Ex-Situ Biological Treatment Technologies, Battelle Press. Columbus, OH. Edited by A. Leeson, B.C. Alleman. 5(5) 87-95.
- Ringelberg, D.; Perkins, E., Hansen, L., **Talley, J. W.**, Fredrickson, H., **1999**. Relating biodegradation potentials to in-situ microbial community composition. In-Situ Bioremediation of Petroleum Hydrocarbon and Other Organic Compounds, Battelle Press, Columbus, OH. Edited by A. Leeson, B.C. Alleman. 5(3) 545-550.
- Luthy, R.; Ghosh, U., **Talley, J. W.**, Gillette, S., Zare, R., **1999**. Microscale spectroscopic characterization of sequestration of PAHs on sediments. Bioremediation Technologies for Polycyclic Aromatic Hydrocarbon Compounds. Battelle Press. Columbus, OH. Edited by A. Leeson, B.C. Alleman. 5(8) 289-295.

#### **CONFERENCE ABSTRACTS, PAPERS, AND PROCEEDINGS (27)**

- Fisher, B.D., **Talley, J.W.**, Hanson, D., **2008** (accepted) Treatability of As-Contaminated Groundwater Using a Waste-Product Fishbone, The 6<sup>th</sup> International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, USA, May 19-22, 2008.
- Talley, J.W.**, Cui, X., Wolfe, L., Berveiler, P., **2008** (accepted). Distribution and bioavailability of PAHs found in a contaminated surface soil, The 6<sup>th</sup> International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, USA, May 19-22, 2008.
- McDonald, S., Garvey, E., Fidler, B., **Talley, J.W.**, **2008** (accepted). Underwater dirt: tools to manage contaminated sediments at military sites, Joint Services Environmental Management Conference, Denver, CO, USA, May 5-8, 2008.
- Talley, J.W.**, Cui, X., Berveiler, P., **2007**. Distribution and bioremediation of PAHs among different particle classes found in a contaminated surface soil, International Symposium on Environmental Science and Technology, Beijing, China, November 13-16, 2007.

- Fisher, B. D., **Talley, J.W., 2007.** Hanson, D. Treatability of As-contaminated groundwater using a waste product fishbone. 11<sup>th</sup> Annual Green Chemistry and Engineering Conference, Green Analytical Chemistry – Washington, D.C., USA. June 28, 2007.
- Talley, J.W.,** Fisher, B.D., and Hanson, D. **2007.** “Treatability of As-Contaminated Groundwater: Flux to River Sediment”. 4<sup>th</sup> International Battelle Sediments Conference on Remediation of Contaminated Sediments, Savannah, GA, USA. January 25, 2007.
- Talley, J.W.,** Fisher, B.D., and Brownell, R. **2007.** “Treatability of Metals in Dredged Material Using Phosphate-Induced Stabilization”. 4<sup>th</sup> International Battelle Sediments Conference on Remediation of Contaminated Sediments. Savannah, GA, USA. January 25, 2007.
- Zhang, X., **Talley, J.W.,** Davis, W.E., Conn, D. B., George, J.E., Li, Y., Mitchell, K., **2006.** Comparison of solid phase microextraction and purge trap gas chromatography mass spectrometry for the determination of methyl mercury. Abstracts of Papers of the American Chemical Society 231: 103 – ENVR MAR 26, 2006
- Zhang, X., **Talley, J.W., 2006.** Determination of sub-ppt level methyl mercury in seawater samples. Abstracts of Papers of the American Chemical Society 231: 105 – ENVR MAR 26, 2006
- McStay, F.; **Talley, J.W.,** Shea, C., **2005.** Landfarming as a bioremediation technique for oil contaminated lands in Iraq. Proceedings of the National Association of Environmental Professionals 30<sup>th</sup> Annual Conference.
- Ruggaber, T.P.; **Talley, J.W., 2005.** Detection and control of combined sewer overflow events using embedded sensor network technology. World Water Congress 2005, Impacts of Global Change, World Water and Environmental Resources Congress 2005, Raymond Walton Editor, May 15-19, 2005, Anchorage, Alaska, USA.
- Young, K.M.; **Talley, J.W.,** Larson, S., **2005.** Assessing the availability of 2,4,6-trinitrotoluene from sand and clay minerals using TPD-MS. Proceedings of American Academy of Sciences First International Conference on Environmental Science and Technology.
- Jain, J.C.; Padber, X., Zhang, X., **Talley, J.W., 2004.** Is it safe to consume herbal dietary supplements? International Conference on Advances in Pharmaceuticals, New Delhi, India
- Nicholl, S.; **Talley, J.W., 2004.** Assessing the availability of select hydrophobic organic compounds from geosorbents and sediments using thermal programmed desorption mass spectrometry. 4<sup>th</sup> SETAC World Congress Proceedings.
- Liu, G.; Zhang, X., **Talley, J.W., 2004.** Complexation of copper ions with natural organic matter: its effects on coagulation in drinking water treatment. Abstracts of Papers of the American Chemical Society, 227<sup>th</sup> National Meeting.
- Fredrickson H.L.; Furey J.S., **Talley, J. W. , 2003.** Biological availability of hydrophobic organic contaminants and quality of organic carbon. Abstracts of Papers of the American Chemical Society 225, U911-U912 006-Geoc Part 1, March.
- Talley, J.W.;** Johnson, D., Stevens, J., Fredrickson, H., Larson, S., L., Wade, R., **2002.** Availability, treatability, and toxicity of DDT in river sediment. Key Technologies for Global Prosperity, 3<sup>rd</sup> Specialty Conference on Dredging and Dredged Material Disposal, Stephen Garbaciak, Jr. – Editor, May 5-8, 2002, Orlando, Florida, USA.

- Nicholl, S.; Hundal, L., **Talley, J.W., 2002.** Effects of aging on release energy of polycyclic aromatic hydrocarbon contaminated clays and soils. SETAC 23<sup>rd</sup> Annual Meeting in North America Proceedings.
- Talley, J.W., 2001.** Availability, biotreatment, and toxicity of polycyclic aromatic hydrocarbons in harbor sediments. 17th Annual International Conference on Contaminated Soils, Sediments, and Water Proceedings.
- Talley, J.W.;** and Larson, S., **2000.** Correlations between chemical extractability, bioavailability, and bioaccumulation of PAHs in marine sediments. Sediment & Soil Chemistry Session, Society of Environmental Toxicology and Chemistry Annual Meeting in North America Proceedings.
- Ghosh, U.; Luthy, R.G., Gillette, J.S., Zare, R.N., **Talley, J.W., 2000.** Effect of microscale location and association of PAHs in sediments particles on Biotreatment. Sediment & Soil Chemistry Session, Society of Environmental Toxicology and Chemistry Annual Meeting in North America Proceedings.
- Ghosh U.; Luthy R.G., **Talley J.W.,** Tucker S., Furey J.S., **2000.** Kinetics and thermodynamics of PAH desorption processes from sediment particles. Abstracts of Papers of the American Chemical Society 220, U325-U325 61-Envr Part 1, August.
- Luthy R.G.; Ghosh U., Gillette J.S., Zare R.N., **Talley J.W.,** Tucker S., **2000.** Microscale PAH location and association with organic matter and effects on biotreatment and bioaccumulation. Abstracts of Papers of the American Chemical Society 220: U337-U337 133-Envr Part 1, August.
- Irvine, R.L.; **Talley, J.W., 2000.** In-situ and ex-situ bioremediation: general policies and trends of engineered biotreatment systems. *Korean Solid Waste Engineering Society Autumn Conference Proceedings.*
- Fredrickson, H.; Ringelberg, D., Perkins, E., **Talley, J.W., 2000.** Microbial community composition and activities of ex-situ and in-situ contaminants bioremediation systems. *Proceedings of 9<sup>th</sup> European Congress on Biotechnology.*
- Talley, J.W.;** Furey, J., **1999.** Thermal programmed desorption with direct sampling ion trap mass spectrometry for analysis of soils contaminated with semivolatile organic compounds. *Proceedings of the 47th ASMS Conference on Mass Spectrometry and Allied Topics, 1999.*
- Secker, L.; McManus, A., **Talley, J.W., 1998.** Bioremediating a buffalo brownfield: a comparison of bench-scale biotreatability results to full-scale remediation. *Proceedings of the 30th Mid-Atlantic Industrial and Hazardous Waste Conference.*

### **PRESENTATIONS (63)**

- Talley, J.W.,** Cui, X., Berveiler, P. Distribution and bioremediation of PAHs among different particle classes found in a contaminated surface soil, International Symposium on Environmental Science and Technology, Beijing, China, November 14, **2007.** Platform presentation.

Gbondo-Tugbawa, S., **Talley, J.W.,** Garvey, E., McCain, J., Purkiss, C., Baker, J., Su, T.

- Comparison of four sampling techniques from monitoring hydrophobic organic compounds in surface waters. SETAC North America 28<sup>th</sup> Annual Meeting, Session: Sampling and Analytical Determinations in Environmental Matrices, Milwaukee, WI, USA, November 14, **2007**. Platform presentation.
- Talley, J. W.**, Monitoring, Detection, and control of combined sewer overflow events using in-situ distributed embedded sensor networks, University of North Carolina – Chapel Hill, NC, USA, November 12, **2007**. Invited presentation
- Talley, J.W.**, Cui, X., Berveiler, P. Bioremediation of PAHs and petroleum hydrocarbons in surface soils, 14<sup>th</sup> International Petroleum Environmental Conference, Houston, TX, USA, November 8, **2007**. Platform presentation.
- Talley, J. W.**, Monitoring, Detection, and Control Of Combined Sewer Overflows Using Embedded Sensor Networks. 3<sup>rd</sup> International Conference on Environmental Science and Technology, Houston, TX, USA. August 6-9, **2007**. Platform presentation.
- Fisher, B. D., **Talley, J.W.**, Hanson, D. Treatability of As-contaminated groundwater using a waste product fishbone. 11<sup>th</sup> Annual Green Chemistry and Engineering Conference, Green Analytical Chemistry – Washington, D.C., USA. June 28, **2007**. Platform presentation.
- Hanson, D., **Talley, J. W.**, Fisher, B., Treatability of Arsenic-Contaminated Groundwater Using Enhanced Apatite. Joint Services Environmental Management Conference, Columbus, OH, USA.. May 21-24, **2007**. Platform presentation.
- Talley, J. W.**, Fisher, B., Brownell, D, Treatability of Metals in Dredged Materials Using Phosphate-Induced Stabilization, 4<sup>th</sup> International Conference on Remediation of Contaminated Sediments, Savannah, GA, USA. January 24, **2007**. Platform presentation.
- Talley, J. W.**, Fisher, B., Hanson, D, Treatability of Arsenic-Contaminated Groundwater: Source Flux to River Sediments. 4<sup>th</sup> International Conference on Remediation of Contaminated Sediments, Savannah, GA, USA. January 25, **2007**. Platform presentation.
- Talley, J.W.**, Monitoring, Detection, and Control of CSO Events Using Embedded Wireless Networks, Peking University, Beijing, China., September 20, **2006**. Invited lecture.
- Talley, J.W.**, Assessing the Availability of Recalcitrant Pollutants in Soils and Sediments for Remedial Strategies, SETAC Asia, Beijing, China. September 20, **2006**. Platform presentation.
- Liu, G.J., Zhang, X.R., **Talley, J.W.**, Neal, C.R., Adsorption of arsenic onto TiO<sub>2</sub> in the presence and absence of NOM, SETAC Asia Conference, Beijing, China. September 20, **2006**. Platform presentation.
- Talley, J.W.**, Monitoring, Detection, and Control of CSO Events Using Embedded Wireless Networks, Tianjing University, Tianjing, China. September 19, **2006**. Invited lecture
- Zhang, X., **Talley, J.W.**, Davis, W.E., Conn, D. B., George. J.E., Li, Y., Mitchell, K., 2006. Comparison of solid phase microextraction and purge trap gas chromatography mass spectrometry for the determination of methyl mercury. ACS Spring 2006 National Meeting & Exposition, Atlanta, GA, March 29, **2006**. Poster.
- Zhang, X., **Talley, J.W.** Determination of sub-ppt level methyl mercury in seawater samples. ACS Spring 2006 National Meeting & Exposition, Atlanta, GA, March 29, 2006. Poster.

Maurice, P; Lemmon, M., **Talley, J.W.**, Environmental Sensors and Sensor Networks. Princeton University, March 8, **2006**. Platform presentation.

- Talley, J.W.** CSOs in South Bend, IN, Isaac Walton League, South Bend, IN, USA, February 15, **2006**. Invited lecture
- Talley, J.W.** Research and Remediation, Malcolm Pirnie (Federal, Industry, Environmental Remediation (FIER) Group, Phoenix, AZ, February 1, **2006**. Invited lecture.
- Talley, J.W.**, P. Maurice, M. Lemmon, Ruggaber, T. Monitoring, controlling, and treating combined sewage overflows using embedded sensor network technology: a new approach. Third Meeting of the Committee on Integrated Observations for Hydrologic and Related Sciences, National Academy of Sciences, Denver, CO, USA. December 2, **2005**. Invited lecture.
- Ruggaber, T., **Talley, J.W.**, Montestruque, L., Henthorn, P. Detection and control of CSO events using embedded sensor network technology. Indiana Water Environment Association 69<sup>th</sup> Annual Conference, Indianapolis, IN, USA November 15, **2005** (Platform presentation).
- Talley, J.W.** Assessment of bioavailability and ecological risks. Managing Uncertainty for Malcolm Pirnie Bioaccumulating Contaminants in Sediments and Surface Waters Seminar, Chicago, IL, USA. October 25, **2005**. Invited lecture.
- Talley, J.W.** Correlating physical availability to bioavailability and treatment for hydrophobic organic compounds in soils and sediments. Society of Industrial Microbiology Annual Meeting – Notre Dame, IN, USA. October 8, **2005**. Invited lecture.
- Talley, J.W.** Environmental Engineering Needs for Defense Sustainability and Base Camp Development. US Army-MIT Defense Sustainability and Base Camp Workshop, Dedham, MA, USA. Sept 21, **2005**. Invited lecture.
- Talley, J.W.**; Nichols, S. Surface complexation modeling and thermal programmed desorption for mercury (Hg) speciation and availability. NSF EMSI Advisory Board Meeting, Notre Dame, IN, USA. August 3, **2005**. Invited lecture.
- Young, K. M.; Hundal, L., Hunn, J., **Talley, J.W.** Composting of 2,4,6-trinitrotoluene with anaerobically digested biosolids. 8th International Symposium on In-Situ and On-Site Bioremediation - Baltimore, MD, USA. June 6-9, **2005**. Platform presentation.
- Ruggaber, T.P.; **Talley, J.W.** Detection and control of combined sewer overflow events using embedded sensor network technology. ASCE World Water and Environmental Resources Congress 2005 - Anchorage, AK, USA May 15-19, **2005**. Platform presentation.
- McStay, F.; **Talley, J.W.**, Shea, C., Landfarming as a bioremediation technique for oil contaminated lands in Iraq. 30<sup>th</sup> Annual Conference, National Association of Environmental Professionals, Alexandria, VA, USA April 16-19, **2005**. Platform presentation.
- Talley, J.W.** Detection, control, and treatment of combined sewer overflow events using wireless embedded sensors. Johnson Controls – Milwaukee, WI, USA. April 11, **2005**, Invited lecture.
- Talley, J.W.** Detection and control of combined sewer overflow events using wireless embedded sensors. Indiana Chapter of ASCE Annual Meeting – Notre Dame, IN, USA. March 23, **2005**, Invited lecture.
- Talley, J.W.**; Young, K.M., Larson, S. Assessing the availability of 2,4,6-trinitrotoluene from sand and clay minerals using TPD-MS. American Academy of Sciences 1<sup>st</sup> International Conference on Environmental Science and Technology - New Orleans, LA, USA. January 23-26, **2005**. Platform presentation.

Lemmon, M.; **Talley, J.W.** Detection and Control of Combined Sewer Events Using Embedded Sensor Technology, Center for Wireless Systems & Applications (CWSA), College of Engineering, Purdue

- University, West Lafayette, Indiana, November 19, **2004**. Platform presentation.
- Talley, J.W.**; Nicholl, S. Assessing the availability of select hydrophobic organic compounds from geosorbents and sediments using thermal programmed desorption mass spectrometry. 4<sup>th</sup> SETAC World Congress - Portland, OR, USA. November 14-18, **2004**. Platform presentation.
- Talley, J.W.**; Lemmon, M., Maurice, P. Detection and Control of Combined Sewer Events Using Embedded Sensor Network Technology, NSF Hydrologic Observatory Meeting, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, November 12, **2004**. Invited lecture.
- Talley, J.W.**; Nicholl, S. Development and application of thermal program mass spectrometry methods to assess the availability of select hydrophobic organic compounds and heavy metals in soils and sediments. Dupont's Sediment and Soils Network Meeting, Wilmington, Delaware, April 29, **2004**. Invited lecture.
- Talley, J.W.** Detection and control of combined sewer events using embedded sensor technology, business innovation symposium. University of Notre Dame, Notre Dame, Indiana, April 20, **2004**. Invited lecture.
- Liu, G.; Zhang, X., **Talley, J.W.** Complexation of copper ions with natural organic matter: its effects on coagulation in drinking water treatment. 227<sup>th</sup> American Chemical Society National Meeting - Anaheim, CA, USA. March 27 - April 1, **2004**. Poster.
- Talley, J.W.**; Zhang, X. Mercury speciation and availability in tidal waters, suspended solids and sediments from the san francisco bay. California Water Policy Council and Federal Ecosystem Directorate (CALFED) Coordination Group Meeting, San Francisco, California, February 24, **2004**. Invited lecture.
- Talley, J.W.** Thermal programmed desorption mass spectrometry: a new approach for assessing the availability of hydrophobic organic pollutants. Symposium on Notre Dame Environmental Education and Research, University of Notre Dame, Notre Dame, Indiana. November 12, **2003**. Invited lecture.
- Young, K.; **Talley, J.W.**, Larson, S.L. Availability and biotreatability of nitroaromatic-impacted soils. 7<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - Orlando, FL, USA. June 2-5, **2003**. Poster.
- Talley, J.W.** Availability, biotreatment, and toxicity of polycyclic aromatic hydrocarbons in harbor sediments. External Reviewers for the Department of Civil Engineering & Geological Sciences University of Notre Dame, Notre Dame, Indiana. March 25, **2002**. Invited lecture.
- Fredrickson H.L.; Furey J.S., **Talley, J.W.** Biological availability of hydrophobic organic contaminants and quality of organic carbon. 225<sup>th</sup> National Meeting of the American Chemical Society - New Orleans, LA, USA. March 23-27, **2003**. Platform presentation.
- Nicholl, S.; Hundal, L., **Talley, J.W.** Effects of aging on release energy of polycyclic aromatic hydrocarbon contaminated clays and soils. Society of Environmental Toxicology and Chemistry 23<sup>rd</sup> Annual Meeting in North America - Salt Lake City, UT, USA. November 15-20, **2002**. Poster.
- Talley, J.W.**; Johnson, D., Larson, S., L., Fredrickson, H., Stevens, J., Wade, R. Availability, treatability, and toxicity of DDT in river sediment. American Society of Civil Engineering 3<sup>rd</sup> Specialty Conference on Dredging and Dredged Material Disposal - Orlando, FL, USA. May 5-8, **2002**. Platform presentation.
- Larson, S. L.; **Talley, J. W.** Physical separation and availability characterization of nitroaromatics in biotreated soils. 3<sup>rd</sup> International Conference on Remediation of Chlorinated and Recalcitrant Compounds - Monterey, CA, USA. May 20-23, **2002**. Platform presentation.
- Talley, J.W.**; Availability, biotreatment, and toxicity of polycyclic aromatic hydrocarbons in harbor sediments. 17<sup>th</sup> Annual International Conference on Contaminated Soils, Sediments,

- and Water - Amherst, MA, USA. October 22-25, **2001**. Platform presentation.
- Talley, J.W.** Availability, biotreatment, and toxicity of polycyclic aromatic hydrocarbons in harbor sediments. 1<sup>st</sup> International Conference on Remediation of Contaminated Sediments - Venice, ITALY. October 10-12, **2001**. Platform presentation.
- Wani, A.; Hansen, L., **Talley J. W.**, Waisner, S., Ringelberg, D. Treatability study for total petroleum hydrocarbons contamination at gasoline alley. 6<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. June 4-7, **2001**. Platform presentation.
- Talley, J. W.**; Felt, D. R., Hansen, L., Spain, J., Pritchard, H., Sewell, G. W., Tiedje, J.M. The federal integrated biotreatment research consortium (flask to field). 6<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. June 4-7, **2001**. Platform presentation.
- Nestler, C.; Hansen, L., Ringelberg, D., **Talley, J. W.** Remediation of soil PAH: comparison of biostimulation and bioaugmentation. 6<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. June 4-7, **2001**. Platform presentation.
- Nestler, C.; Hansen, L., Waisner, S., **Talley, J. W.** Monitoring bioremediation through in-situ soil respiration. 6<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. June 4-7, **2001**. Platform presentation.
- Talley, J. W.**; Ghosh, U., Luthy, R. G. Availability and bioslurry treatment of PAHs in contaminated dredged materials. 6<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. June 4-7, **2001**. Platform presentation.
- Talley, J.W.**; Hatzinger, P. B, Waisner, S. A., Goldstein, K., Navon, D., Heckleman, C. A, and Senick, M. Bioremediation of polycyclic aromatic hydrocarbons (PAHs) at the Watervliet Arsenal. 2<sup>nd</sup> International Conference on Remediation of Chlorinated and Recalcitrant Compounds - Monterey, CA, USA. May 22-25, **2000**. Platform presentation.
- Irvine, R.L.; **Talley, J.W.** In-situ and ex-situ bioremediation: general policies and trends of engineered biotreatment systems. Korean Solid Waste Engineering Society, Autumn Conference, Gyemyung University - Taegu, KOREA. November 16-17, **2000**. Platform presentation.
- Ghosh, U.; Luthy, R.G., Gillette, J.S., Zare, R.N., **Talley, J.W.** Effect of microscale location and association of PAHs in sediments particles on Biotreatment. Sediment & Soil Chemistry Session, Society of Environmental Toxicology and Chemistry Annual Meeting in North America - Nashville, TN, USA. November 12-16, **2000**. Platform presentation.
- Ghosh U.; Luthy R.G., **Talley J.W.**, Tucker S., Furey J.S., Kinetics and thermodynamics of PAH desorption processes from sediment particles. 220<sup>th</sup> National Meeting of the American Chemical Society – Washington DC, USA. August 20-24, **2000**. Platform presentation.
- Luthy R.G.; Ghosh U., Gillette J.S., Zare R.N., **Talley J.W.**, Tucker S. Microscale PAH location and association with organic matter and effects on biotreatment and bioaccumulation. 220<sup>th</sup> National Meeting of the American Chemical Society – Washington DC, USA. August 20-24, **2000**. Platform presentation.

Larson, S.; **Talley, J.W.** Correlations between chemical extractability, bioavailability, and bioaccumulation of PAHs in marine sediments. Sediment & Soil Chemistry Session, Society of Environmental Toxicology and Chemistry Annual Meeting in North America Proceedings - Nashville, TN USA November 12-16, **2000**. Platform presentation.

- Talley, J. W.;**Goldstein, K. J, Schaar, R. G., Hatzinger, P. B., Chaki, S., Senrick, M. Bioremediating PAHs and TPH at watervliet arsenal. 5<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. April 19-22, **1999**. Platform presentation.
- Ringelberg, D.; Perkins, E., Hansen, L., **Talley, J. W.**, Fredrickson, H. Relating biodegradation potentials to in-situ microbial community composition. 5<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. April 19-22, **1999**. Platform presentation.
- Luthy, R.; Ghosh, U., **Talley, J. W.**, Gillette, S., Zare, R. Microscale spectroscopic characterization of sequestration of PAHs on sediments. 5<sup>th</sup> International In Situ and On-Site Bioremediation Symposium - San Diego, CA, USA. April 19-22, **1999**. Platform presentation.
- Fredrickson, H.; Ringelberg, D., Perkins, E., **Talley, J.W.** Microbial community composition and activities of ex-situ and in-situ contaminants bioremediation systems. 9<sup>th</sup> European Congress on Biotechnology – Brussels, BELGIUM July 11-15, **1999**. Platform presentation.
- Secker, L.; McManus, A., **Talley, J.W.** Bioremediating a buffalo brownfield: a comparison of bench-scale biotreatability results to full-scale remediation. 30th Mid-Atlantic Industrial and Hazardous Waste Conference - Philadelphia, PA USA July 12-15, **1998**. Platform presentation.
- Furey, J.; **Talley, J.W.** Thermal programmed desorption with direct sampling ion trap mass spectrometry for analysis of soils contaminated with semivolatile organic compounds. 47th ASMS Conference on Mass Spectrometry and Allied Topics - Dallas, Texas USA June 12-17, **1999**. Poster.

### **SELECT PROFESSIONAL ACTIVITIES**

- Board of Visitors for the Army Research Office's Biennial Review of the Environmental Division (2007)
- Notre Dame Millennium Development Initiative Task Force (service project to Africa) (2007-present)
- Brigadier General (Engineer), US Army Reserves, CDR, 926<sup>th</sup> Engineer Brigade, Montgomery, AL (2007-Present)
- Massman Search Committee, Department of Civil Engineering and Geological Sciences, University of Notre Dame (2006-present)
- Chair, Environmental Engineering Faculty Search Committee, Department of Civil Engineering and Geological Sciences, University of Notre Dame (2006-2007)
- Reviewer for US Civilian Research and Development Foundation (CRDF) (2006-2007)
- Editorial Board, *Research Journal of Chemistry and the Environment* (2005-Present)
- Steering Committee for Water Security, Water Environmental Federation (2005-2007)
- Chair, Session 07-02 (Assessment and Remediation), First International Conference on Environmental Science and Technology, January 23-26, 2005, New Orleans, LA
- Co-Chair, Joint Task Committee on Hazardous Waste Treatment, Environmental & Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE) (2004 - 2007)
- Faculty Senate, University of Notre Dame (2004 - 2007)
- College of Engineering Council, University of Notre Dame (2004 - 2007)
- Council of Colonels, Engineer Regiment, U.S. Army (2004 - 2007)

Scholarship Committee, National Society of Professional Engineers (NSPE),  
Indiana Chapter (2004- 2005)  
Reviewer for *Waste Management* journal (2004 - present)  
Reviewer for *Journal of Environmental Engineering* (2003 - present)  
Reviewer for *Environmental Engineering and Science* (2003 - present)  
Reviewer for *Biodegradation* (2003 - present)  
Reviewer for *Environmental Science and Technology* journal (2002 - present)  
Peer Review Panelist, EPA's National Center for Environmental Research (2003- 2004)  
Bachelor of Science in Civil Engineering Curriculum Committee, Department of Civil  
Engineering and Geological Sciences, University of Notre Dame (2003 - 2004)  
Special Undergraduate Curriculum Committee (addition of biology/biochemistry),  
College of Engineering, University of Notre Dame (2001 - 2002)  
Chair, Seminar Committee, Department of Civil Engineering and Geological Sciences,  
University of Notre Dame (2001 - 2002)

### **PROFESSIONAL MEMEBERSHIP**

Academy of Hazardous Materials Managers  
American Academy of Environmental Engineers  
American Association for the Advancement of Science  
American Chemical Society  
American Society of Civil Engineers  
American Society for Microbiology  
American Society for Engineering Education  
American Water Works Association  
Association of Environmental Engineering and Science Professors  
Society of Environmental Toxicology and Chemistry  
Society of American Military Engineers  
Tau Beta Pi National Honorary Engineering Society  
The Honor Society of Phi Kappa Phi  
The Honor Society of Sigma Xi  
The Army Engineer Association

### **CURRENT COLLABORATIVE RESEARCH EFFORTS**

“*Escherichia Coli* Sensor Development and Demonstration for South Bend, IN,” City of South  
Bend, **\$36K, J.W. Talley**, PI (Notre Dame), 2008.

“Network Sensing in Build and Natural Environments: Full Scale Metropolitan Deployment,”  
Naval Surface Warfare Center/Defense Threat Reduction Agency (DTRA), **\$2200K, J.W.  
Talley**, PI (Notre Dame), P.J. Antsaklis (Notre Dame), M. Haenggi (Notre Dame), M.  
Lemmon (Notre Dame), P. Bauer (Notre Dame), T. Kijewski-Correa (Notre Dame), N.  
Laneman (Notre Dame), 2008-2010.

“Automated In-Line Sonification Treatment of CSO Water Using Embedded Sensor Network

Technology,” Indiana 21<sup>st</sup> Century, **\$1000K**, L. Montestruque (EmNet Inc.), M. Lemmon (Notre Dame), **J.W. Talley**, (Notre Dame), W. Chappell (Purdue), S. Bagchi (Purdue), 2007-2009.

“Network Sensing in Build and Natural Environments,” Naval Surface Warfare Center/Defense Threat Reduction Agency (DTRA), **\$1751K**, **J.W. Talley**, PI (Notre Dame), P.J. Antsaklis (Notre Dame), M. Haenggi (Notre Dame), M. Lemmon (Notre Dame), P. Bauer (Notre Dame), T. Kijewski-Correa (Notre Dame), N. Laneman (Notre Dame), 2007-2009.

“Detection and Control of Combined Sewer Overflow Events Using Embedded Sensor Network Technology,” Indiana 21<sup>st</sup> Century, **\$1000K**, **J.W. Talley**, PI (Notre Dame), M. Lemmon (Notre Dame), P. Maurice (Notre Dame), L. Ketchum (Notre Dame), W. Chappell (Purdue), S. Bagchi (Purdue), S. Girman (Greeley and Hansen), L. Montestruque (EmNet Inc.), 2004-2008.

### **PREVIOUS RESEARCHER SUPERVISED**

#### **Post-Doctorate Research Fellows/Associates**

Dr. Xiangru Zhang (2003-2006) Assistant Professor, Hong Kong University of Science and Technology, Hong Kong, China.

Dr. Lakhwinder Hundal (2001-2002) Research Soil Scientist, Research and Development Department, Metropolitan Water Reclamation of Greater Chicago.

### **PH.D. DISSERTATIONS AND M.S. THESES DIRECTED**

Dr. Guojing Liu, NSF (EMSI) Fellowship “Removal of Arsenic from Ground Water Using Coupled TiO<sub>2</sub>-Photocatalysis Coagulation: The Role of Natural Organic Matter,” Doctorate of Philosophy (Environmental Engineering)

Mr. Tim Ruggaber (2006), “Detection and Control of Combined Sewer Overflow Events Using Embedded Sensor Network Technology and the Use of Enzymatic Processes for Combined Wastewater Treatment,” Master of Science in Environmental Engineering.

Dr.. Kara M. Young (2006), “The Effects of Aging on the Binding and Availability of Nitroaromatic Compounds in Soils,” Doctorate of Philosophy (Environmental Engineering).

Ms Sara Nicholl (2004), “Availability of PAH-Impacted Geosorbents,” Master of Science in Environmental Engineering.

Ms. Erica F. Pirnie (2003), “Chemical Reduction of DDT and Its Metabolites in Aqueous Solutions,” Master of Science in Environmental Engineering.

### **CURRENT RESEARCH GROUP**

Dr. Guojing Liu, Post-doctorate Fellow

- Environmental Processes

MAJ Joe Geary (Ph.D. student), U.S. Army Fellowship

- Integrated Biosensor for Pathogens Early Warning System

Mr. Brian Fisher (Ph.D. student)

- Arsenic Stabilization Using Enhanced Apatite (Fishbone)

Mr. Xiaofei Cui (Ph.D. student)

- Sonification in-line treatment of CSO/Wastewater

Mr. Larry Wolfe (Ph.D. student)

- Thermal Programmed Desorption and the Availability of HOCs

Ms. Carrie Rodak (Ph.D. student)

- Integrated Chemical Sensor for DNAPL

Ms. Kate L. Gilliam (Ph.D. student)

- Chemical Sensing of Pathogens in Marine Environments