

Audra N. Morse, Ph.D., P.E.
Curriculum Vita

Contact Information

Dept. of Civil and Environmental Engineering	(806) 742-2801 ext 284
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Lubbock, TX 79409-1023	

Education

Ph.D. Civil Engineering	May, 2003	Texas Tech University, Lubbock, TX
M. Environmental Engineering	May, 1999	Texas Tech University, Lubbock, TX
B.S. Environmental Engineering	May, 1999	Texas Tech University, Lubbock, TX

Professional Experience

Associate Professor	2008-present	Department of Civil and Environmental Engineering, Texas Tech University
Assistant Professor	2003-2008	Department of Civil and Environmental Engineering, Texas Tech University
Research Associate	1999-2003	Department of Civil Engineering Texas Tech University
Research Assistant	1998-1999	Department of Civil Engineering Texas Tech University
Student Assistant	1997-1998	Department of Civil Engineering Texas Tech University
Environmental Scientist	1997-1997	Compliance Services Group, Lubbock, Texas

Professional Certifications

Licensed Professional Engineer in Texas, No. 96917

Professional Affiliations

American Society of Civil Engineers, Water Environment Federation, American Water Works Association, American Society for Engineering Educators, Society of Automotive Engineers, Association of Environmental Engineering and Science Professors, American Society for Microbiology

Awards and Achievements

Chancellor's Council Distinguished Teaching Award, Texas Tech University, 2010
Member, TTU Civil and Environmental Engineering Department Academy, Inducted 2010
President's Excellence in Teaching Award, Texas Tech University, 2010
2010 Chi Epsilon Excellence in Teaching Award for the Southwest District
Outstanding Educator, TTU TECHspy Awards, 2009, 2010
2009 Whitacre Excellence in Research Award, Whitacre COE, TTU
2009 ASCE Texas Section - Professional Service to Students Award
Member, Texas Tech University Teaching Academy
ASCE Region 6 Faculty Advisor of the Year, 2007 and 2010
ASCE 2006 ExCEED New Faculty Excellence in Teaching Award
Texas Tech Association of Parents, 2006 Hemphill Wells New Professor Excellence in Teaching Award
Texas Tech Alumni Association's New Faculty Award for 2006, College of Engineering Recipient
Mortar Board Apple Polishing Banquet, 2006

2004 CGS/University Microfilm International Distinguished Dissertation Award, Texas Tech University
College of Engineering, Honors Convocation, 2004, 2006, 2008, 2009, 2010
Second Place in the WEFTEC 2002 Poster Competition
Teach Fellow, TEACH Program—Texas Tech University
Samuel Feltcher Tapman, ASCE National Scholarship
Chi Epsilon, Honors Association
Tau Beta Pi, Honors Association
Golden Key, Honors Association

Invited Speeches

Spring Commencement Speaker, The University of Texas at Tyler, College of Engineering and Computer Science and College of Education and Psychology, May 12, 2007

Research Experience

Research Grants

Morse, A. and Jackson, W. SBIR Novel Self-cleaning Surfaces for Biofouling Prevention Wastewater Lines of Space Systems, Lynntech, 03/12/10-08/31/10, \$8054.50 of \$16,109.
Rainwater, K., Anderson, T., Cleveland, T., Hernandez, A., Jackson, W.A., and Morse, A. City of Lubbock Canyon Lakes Water Reuse Project, EPA/ City of Lubbock, Alan Plummer and Associates, 01/25/10-12/31/10, \$9617 of \$57,700
Jackson, W.A., Morse, A. and Song, L. A Sustained Water Treatment System for Long Term Space Habitation, NASA, 01/01/10-09/30/10, \$23,122 of \$69,436.
Smith, J. Morse, A., Jackson, A., Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2006-2009 \$27590.76 of \$919,692.
Morse, A. City of Lubbock Solids Stream Studies of the Southeast Water Reclamation Plant, 2/19/09-12/19/09, \$15,000.
Morse, A. Transport Spill Containment for Texas Highways, TxDOT, 2008-2009, \$91,324.
Morse, A. and Jackson W.A. RO Membrane Anti-Fouling Effectiveness Test, Lynntech Corporation, 12/8/07-11/30/08, \$12,469.50 of \$24,939.
Eckstein, G., Jeffery, W., Anderson, T. and Morse, A. Center for Water Law and Policy, EPA Star, 6/1/2007-5/31/10, \$96,365 of \$432,300.
Budek, A. and Morse, A. Handling Issues for Lead and Asbestos in Bridge Construction, TxDOT, 01/01/07-12/31/07, \$59,451.40 of \$80,288.
Swift, A., Chapman, J., Rainwater, K., Morse, A., and others. Great Plains Wind Power Test Facility, USDOE, \$178,199 of \$1,484,999.
Smith, J. Morse, A., Jackson, A., Anderson, T., and James, D. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2006-2009 \$27590.76 of \$919,692.
Smith, J., Morse, A., Jackson, A., Anderson, T., and James, D. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2006-2008 \$99,200 of \$992,000.
Morse, A. and Jackson W.A. RO Membrane Anti-Fouling Effectiveness Test, Lynntech Corporation, June 1-June 30, 2006. \$923.50 of \$1,847.
Thompson, D. and Morse, A. Transport Spill Containment for Texas Highways, TxDOT, 2006-2008, \$76220 of \$203,729.
Smith, J., Morse, A., Jackson, A., and Rainwater, K. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2005-2006 (Year 5), \$168,210 of \$1,869,000.
Morse, A. Recycling of Biofilm to Reduce Organic Carbon Limitations of the Early Planetary Base Wastewater, Texas Space Grant Consortium, New Investigator Program, 2005-2006, \$10,000.

- Morse, A., Pharmaceuticals and Personal Care Products in two unique scenarios in the El Paso Water Utilities, El Paso, TX, 2003-2004, \$15,000.
- Smith, J., Jackson, A., Morse, A., Rainwater, K., Anderson, T., and Wiesner, T. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2003-2004 (Year 4), \$111,750 of \$2,235,000.
- Morse, A. and Jackson, A. Fate of a Representative Pharmaceutical in the Environment, Texas Water Resources Institute, 2002-2003, \$5,000.
- Morse, A. and Jackson, A. Treatment of Perchlorate Contaminated Water Using Advanced Membrane Reactors, Texas Tech University, Water Resources Center, 2001-2002, \$12,000.
- Participated. Jackson, A., Rainwater, K., Morse, A., Muirhead, D., and Anderson, T. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2002-2003 (Year 3), \$459,164.
- Participated. Jackson, A., Jayawickrama, P., Fedler, C., Darwish, M., and Borrelli, J. Use of Alternative Water Sources in Construction Applications. TxDOT. 2001-2003, \$155,345.
- Participated. Jackson, A., Rainwater, K., and Urban, L. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications. NASA, 2001-2002, (Year 2), \$400,000.

Publications

Peer Reviewed (*Corresponding author)

- Landes, N. Jackson, W. A., Morse, A. 2011. Membrane-Aerated Biofilm Reactor, *Water Environment Research*, 83(2), 128-139.
- Carr, D.L.*, Morse, A.N., Zak, J.C. and Anderson, T.A. 2010. Biological Degradation of Common Pharmaceuticals and Personal Care Products in Soils with High Water Content. *Water, Air and Soil Pollution*, DOI 10.1007/s11270-010-0573-z
- Carr, D.L. *, Morse, A.N., Zak, J.C. and Anderson, T.A. 2010. Microbially mediated degradation of common pharmaceuticals and personal care products in soil under aerobic and anaerobic conditions, *Water, Air and Soil Pollution*, DOI 10.1007/s11270-010-0558-y.
- Karnjanapiboonwong, A*, A.N. Morse, J.D. Maul, and T.A. Anderson. 2010. Sorption of estrogens, triclosan, and caffeine in a sandy loam and a silt loam soil. *Journal of Soils and Sediments* 10(7): 1300-1307.
- Karnjanapiboonwong, A.*, J.G.Suski, A.A.Shah, Q.Cai , A.N. Morse, T.A. Anderson. 2010. Occurrence of PPCPs at a wastewater treatment plant and in soil and groundwater at a land application site. *Water, Air, and Soil Pollution* (In press).
- Karnjanapiboonwong, A*, J.E. Cañas, W.A. Jackson, J.D. Maul, A.N. Morse, and T.A. Anderson. 2010. Uptake of 17 α -ethynylestradiol and triclosan in pinto bean, *Phaseolus vulgaris*. *Ecotoxicology and Environmental Safety*.
- Jackson, W*. Andrew, Morse, A., McLamore, E., Wiesner, T., and Xia, S. 2009. Nitrification–Denitrification Biological Treatment of a High-Nitrogen Waste Stream for Water-Reuse Applications. *Water Environment Research*. 81(4):423-431.
- Wells, M.J.M.*, Pellegrin, M.-L., Morse, A., Bell, K. and Fono, L.J. 2009. Emerging Pollutants, *Water Environment Research*, 80(10): 2026-257.
- Ruiz, N., Jackson, W.A., and Morse, A*. 2008. Ammonium-nitrogen Loading Rates in a Microporous Hollow-fiber Membrane, *Habitation - An International Journal for Human Support Research*, 11(4): 203-208.
- Morse, A.*, Khatri, S., and Jackson, W.A. 2008. Treatment Efficiency and Stoichiometry of a High Strength Graywater, *Water Environment Research*, 79(13):2557-2563.
- Low, D.*, Morse, A., and Jackson, A. 2008. Determining the Effect of Usage and Biota Upon Oxygen Flux Across Tubular Silicone Membranes. *SAE 2007 Transactions Journal of Aerospace*, 2007-01-3092.

- Landes, N*, Jackson, W.A., and Morse, A. 2008. Evaluation of a Microgravity Compatible Membrane Bioreactor for Simultaneous Nitrification/Denitrification. *SAE 2007 Transactions Journal of Aerospace*, 2007-01-3094.
- Kvanli, D.M., Marisetty, S., Anderson, T.A., Jackson, W.A., and Morse, A.N.* 2008. Monitoring Estrogen Compounds in Wastewater Recycling Systems, *Water, Air, and Soil Pollution*, 188: 31-40.
- Diaz, T., Jackson, W.A., and Morse, A.* 2007. Alleviating Carbon Limitations of the Early Planetary Base Wastestream, *SAE 2006 Transactions Journal of Aerospace*, March: 518-523.
- Wells, M.J.M.* , Fono, L.J., Pellegrin, M.-L., and Morse, A. 2007. Emerging Pollutants, *Water Environment Research*, 79(10): 2192-2209.
- Vairavan, B., Jackson, W.A., Green, C., and Morse, A.* 2007. Identifying the Growth Limiting Physiochemical Parameter for GIVES Grown in Biologically Treated Wastewater, *Air, Water and Soil Pollution*, 184: 5-15.
- Padhye, L, Jackson, W.A., and Morse, A.* 2007. Kinetics for a Membrane reactor Reducing Perchlorate, *Water Environment Research*, 79(2): 140-146.
- McLamore, E.* , Morse, A., and Jackson, W.A. 2007. Bench-Scale Feed Tank Reactions in a Urine-Containing Wastestream, *Habitation - An International Journal for Human Support Research*, 11(3).
- McLamore, E., Jackson, W.A., and Morse, A.* 2007. Abiotic Transport in a Membrane Aerated Bioreactor, *Journal of Membrane Science*, 298(1-2): 110-116.
- Morse, A.* and Jackson, A. 2004. Fate of Amoxicillin in Two Water Reclamation Systems, *Water, Air and Soil Pollution*, 157 (1-4): 117-132.
- Morse, A.* and Jackson, A. 2004. Antibiotic Resistance in Three Water Reclamation Systems, *Water, Air and Soil Pollution*, 159 (1):277-289.
- Koney, P. and Morse, A*. The Effect of Analgesics on the Antibiotic Resistance of Ammonia-Oxidizing Organisms, *Journal of Environmental Engineering and Science*, In press.
- Dhanapal, L.P* . and Morse, A. Effects of Analgesics and their Derivatives on Antibiotic Resistance of Environmental Microbes, *Water Science and Technology: Water Supply*, accepted.

Peer Reviewed Conference Proceedings and Platform Presentations

- Morse, A., Jackson, W.A., Loko, F., Peterson, K., Wilson, D., Faith, K. 2010. Evaluation of Alternative Urine Pre-Treatment Strategies, 40th International Conference on Environmental Systems (ICES), Barcelona, Spain, July.
- Fontenot, D., Talkmitt, S., Morse, A., Marcy, B., Chandler, J. and Stennet, B. 2009. Providing an Engineering Design Model for Secondary Teachers, 39th ASEE/IEEE Frontiers in Education Conference, San Antonio, TX, October.
- Jackson, A., Morse, A., Landes, N. and Low, D. 2009. An Optimum Biological Reactor Configuration for Water Recycling in Space, to be presented at the 39th International Conference on Environmental Systems (ICES), Savannah, GA, July.
- Morse, A. 2009. Application of the ExCEED Teaching Model to Improve Graduate Teaching in Environmental Engineering Courses, ASEE Annual Conference, Austin, TX, June.
- Landes, N., Jackson, A., Morse, A. 2008. The Analysis of a Modified Membrane-Aerated Biofilm Reactor for Space Flight Applications, 37th International Conference on Environmental Systems (ICES), San Francisco, CA.
- Low, D., Jackson, A., Morse, A., Mosley, T., and T. Reid. 2008 Selenium Coating of Water Distribution Tubing to Inhibit Biofilm Formation. 37th International Conference on Environmental Systems (ICES), San Francisco, CA.
- Low, D., Morse, A., and Jackson, A. 2007. Determining the Effect of Usage and Biota Upon Oxygen Flux Across Tubular Silicone Membranes. 36th International Conference on Environmental Systems (ICES), Chicago, IL.

- Landes, N., Jackson, W.A., and Morse, A. 2007. Evaluation of a Microgravity Compatible Membrane Bioreactor for Simultaneous Nitrification/Denitrification. 36th International Conference on Environmental Systems (ICES), Chicago, IL.
- Ruiz, M.N., Jackson, W.A., and Morse, A.* 2007. Transport Processes within a Hollow Fiber Membrane Reactor: Mass Transfer and Hydrodynamics. 36th International Conference on Environmental Systems (ICES), Chicago, IL.
- Morse, A., Jackson, W.A., and Ramsey, R.H. 2007. A Hybrid Class Containing Microbiology and Environmental Engineering at Texas Tech University, ASEE Annual Conference, Honolulu, HI, June 24-27.
- Diaz, T., Jackson, W.A., and Morse, A. 2006. Alleviating Carbon Limitations of the Early Planetary Base Wastestream. Paper 2006-01-2887. International Conference on Environmental Systems (ICES), Norfolk, VA, SAE.
- Vairavan, B., Jackson, W.A., Green, C., and Morse, A.N. 2005. Chive Growth in Biologically Treated Early Planetary Base Wastewater. Paper 2005-01-2822. International Conference on Environmental Systems (ICES), Rome, Italy, SAE.
- Jackson, W.A. and Morse, A. 2005. Optimum Loading Rates and Design Limitations of Biological Reactors for Long-Term Space Habitation Waste Streams, Paper 2005-01-2979. International Conference on Environmental Systems (ICES), Rome, Italy, SAE.
- Jackson, W. A., Morse, A. N., et al. 2004. Effect of Recycle Ratio on the Performance of Biological Water Recovery System, Paper 2004-01-2468. International Conference on Environmental Systems (ICES), Colorado Springs, Colorado, SAE.
- Jackson, A., Morse, A., Ho, T., and Collins, G. 2004. Optimization and Biochemical Characterization of Biological Reactors for Long-Term Space Habitation Waste Streams, 34th International Conference on Environmental Systems (ICES), Doubletree Hotel, Colorado Springs, Colorado, July 19-22.
- Morse, A., Kaparathi, S., and Jackson, A. 2004. Biological Treatment of Urine-Humidity Condensate Waste Stream, 34th International Conference on Environmental Systems (ICES), Doubletree Hotel, Colorado Springs, Colorado, July 19-22.
- McLamore, E., Morse, A., and Jackson, A. 2004. Incorporation of a Membrane-Aerated Bioreactor in a Water Recovery System, 34th International Conference on Environmental Systems (ICES), Doubletree Hotel, Colorado Springs, Colorado, July 19-22.
- Wiesner, T., Xia, S., Jackson, A., and Morse, A. 2004. Modeling a Biological Closed Loop Water Recycling System for Prolonged Manned Space Flight, 34th International Conference on Environmental Systems (ICES), Doubletree Hotel, Colorado Springs, Colorado, July 19-22.
- Morse, A., Jackson, A., Rainwater, K., and Pickering, K. 2003. Nitrification using a Membrane-Aerated Biological Reactor, 33rd International Conference on Environmental Systems (ICES), Bayshore Resort & Marina, Vancouver, B.C., Canada, July 7-10.
- Begeer, A.L.S., Jackson, A., and Morse, A. 2003. Biologically Treated Wastewater for NFT Plant Production in Space, 33rd International Conference on Environmental Systems (ICES), Bayshore Resort & Marina, Vancouver, B.C., Canada, July 7-10.
- Muirhead, D., Rector, T., Collins, G., Keister, H., Morse, A., Jackson, A., and Pickering, K. 2003. Performance of a Small-Scale Advanced Life Support Water Recovery System, 33rd International Conference on Environmental Systems (ICES), Bayshore Resort & Marina, Vancouver, B.C., Canada, July 7-10.

Reports

- Thompson, D.B., Morse, A.N., Acker, J. 2009. Analysis of the Occurrence and Statistics of Hazardous Materials Spill Incidents Along Texas Highways and Suggestions for Mitigation of Transport-Related Spills to Receiving Waters, Center for Multidisciplinary Research in Transportation, Texas Tech University, Research Report 0-5200-1.
- Morse, A., Jackson, A., Landes, N., Wilson, D., Peterson, K., Loko, F., Faith, K. 2009. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and

- Terrestrial Applications, Urine Pre-Treatment and Evaluation of A Biological Reactor for Simultaneous Nitrification-Denitrification, NASA (Year 7).
- Morse, A., Jackson, W., and Faith, K. 2008. Integrated Gen I Testing: Evaluation of Water Quality Benefits and Reduced RO Cost, Lynntech.
- Morse, A., Crawley, N., Low, D., Grieco, J., James, D. and Jackson, W.A. 2008. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA (Year 6).
- Morse, A., Newhouse, C., and Taylor, J. 2008. Handling Issues for Lead and Asbestos in Bridge Construction Center for Multidisciplinary Research in Transportation, Texas Tech University, Research Report 0-5884-1.
- Morse, A., Jackson, A., Rainwater, K., Anderson, T., and James, D. 2007. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2005-2006 (Year 5).
- Morse, A. 2007. Recycling of Biofilm to Reduce Organic Carbon Limitations of the Early Planetary Base Wastewater, Texas Space Grant Consortium, February.
- Jayawickrama, P., Jackson, A., Fedler, C., Morse, A., and Rajagopalan, S. 2005. Use of Alternative Water Sources, Center for Multidisciplinary Research in Transportation, Texas Tech University, Research Report 0-4412-1.
- Morse, A., Jackson, A., Rainwater, K., Anderson, T., and Weisner, T. 2005. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2003-2005 (Year 4).
- Morse, A., Jackson, A., Rainwater, K., Anderson, T., Weisner, T., McLamore, E., Collins, G. Kvanli, D., and Ho, T. 2003. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2002-2003 (Year 3).
- Morse, A. and Jackson, A. 2003. Fate of a Representative Pharmaceutical in the Environment, Texas Water Resources Institute.
- Jackson, A., Rainwater, K., Morse, A., Muirhead, D., and Rector, T. 2002. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2001-2002 (Year 2).
- Jackson, A., Rainwater, K., Morse, A., Muirhead, D., and Rector, T. 2001. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, NASA, 2000-2001 (Year 1).
- Morse, A., Jackson, A., Nash, P., and Senadheera, S. 2001. Environmental Characterization of Traditional Construction and Maintenance Materials, Center for Multidisciplinary Research in Transportation, Texas Tech University, Research Report 4974-1.
- Morse, A. and Ramsey, R.H. 1999. Investigation of a Wind Erosion Event at the Pantex Plant, Amarillo National Resource Center for Plutonium, Amarillo, Texas.

Conference Proceedings and Platform Presentations

- Karnjanapiboonwong, A., Morse, A.N., Anderson, T.A. March 2010. Uptake of 17α -ethynylestradiol and triclosan into plants. Abstract accepted for the American Chemical Society (ACS) Spring Meeting, San Francisco, California.
- Carr, D.L., Morse, A.N. and Anderson, T.A. 2009. Biotransformation of micropollutants in sandy loam soil. *SC-SETAC Annual Spring Meeting*.
- Carr, D.L., Morse, A.N. and Anderson T.A. 2009. Biotransformation of estrogens and synthetic pharmaceuticals and personal care products in a sandy loam soil. *SETAC North America Annual Meeting*.
- Landes, N., Morse, A., Jackson, W.A. and Long, K. 2009. Simultaneous nitrification and denitrification of a nitrogen dominant waste in a membrane-aerated biofilm reactor. Podium Presentation. Biofilm processes: fundamentals to applications. International Water Association. Davis, California.

- Talkmitt, S., Fontenot, D., Morse, A., Stennett, B. 2009. Keeping it Clean and Green, 2009 National Science Teachers Association National Conference on Science Education, New Orleans, LA, March 19-22.
- Landes, N., Jackson, W.A. and Morse, A. 2008. The Potential For Efficient Biological Pre-Treatment Of Exploration Based Waste Streams For, Potable Water Production Using A Membrane Reactor Capable Of Simultaneous Nitrification/Denitrification, COSPAR Conference, Montreal, Canada.
- Morse, A. and Senaheera, S. 2008. Incorporating Sustainability in Civil Engineering at Texas Tech University, ASCE Texas Section Fall Meeting, Dallas, Texas, October 2-3.
- Dhanapal, L. and Morse, A. 2007. Preliminary Study of the Impact of Analgesics and Their Derivates on Antibiotic Resistance, ASCE Texas Section Spring Meeting, Tyler, TX, April 12-13. *Selected Best in Session and Best YP Paper, Spring 2007*
- Low, D., Jackson, W.A., and Morse, A. 2007. Equivalent System Mass Comparison of Biological Wastewater Treatment Systems, Space Exploration Conference, Albuquerque, New Mexico, March.
- Landes, N., Jackson, A., and Morse, A. 2007. The Effects of Biological Water Processor's Gas Streams on a Closed-Loop Atmosphere, Space Exploration Conference, Albuquerque, New Mexico, March.
- Crawley, J., Jackson, A., and Morse, A. 2007. Justification of a Single Stage Carbon Oxidation-Nitrification Reactor for Reverse Osmosis Pretreatment in Water Recovery for a Terrestrial Space Exploration Mission. Space Exploration Conference, Albuquerque, New Mexico, March.
- Morse, A., Khatri, S., and Jackson, W.A. 2006. Loading of an anaerobic packed bed for treatment of a high strength gray water, WEFTEC 2006, Dallas, TX, October 22-25.
- Fontenot, D., Thomason, R., Ramsey, R., and Morse, A.* 2006. Incorporating Environmental Engineering in K-12 Curriculum: a Preliminary Overview, ASCE Texas Section Fall Meeting, San Antonio, Texas, October 12-13.
- Senadheera, S. and Morse, A. 2005. Current Research in Engineering Education—A Civil Engineering Perspective, ASCE Texas Section Fall Meeting, San Antonio, Texas, October 12-13.
- Morse, A., Jackson, W., and Khatri, S. 2006. Stoichiometry of the Transit Mission Wastewater, Earth and Space 2006, South Shore Harbor Resort, Houston, TX, March 5-8.
- Morse, A. and Jackson, W.A. 2006. Treatment of an Early Planetary Base Wastewater using a Dual Nitrification-Denitrification Reactor, Habitation 2006, Rosen Hotel, Orlando, FL, February 5-8.
- Xia, S., Carey, A., Morse, A., Jackson, A., and Wiesner, T. 2004. The Aerated Membrane Reactor (AMR)-A Novel Hollow Fiber Bioreactor for Wastewater Processing during Prolonged Space Flight, Annual Fall Meeting-American Institute of Chemical Engineers. Austin, TX. November 7-12.
- Morse, A., Jackson, A., and McLamore, E. 2004. Dual Nitrification and Denitrification in Biological Membrane Reactor, Habitation 2004, Rosen Hotel, Orlando, Florida, January 4-7.
- McLamore, E., Morse, A., Jackson, A., Rainwater, K., and Muirhead, D. 2004. Development of a Nitrifying Bioreactor for the Treatment of Wastewater In Long-Term Space Applications, Proceedings of the Earth and Space 2004, 9th ASCE Aerospace Division International Conference, South Shore Harbour Resort and Conference Center, League City, Texas, March 8-10.
- Morse, A., Jackson, A., and McLamore, E. 2003. Non Terrestrial Applications, The 2003 Twenty-First Annual Membrane/Separation Technology Planning Conference, Newton, Massachusetts, December 1-3.
- Morse, A., Jackson, A., Rainwater, K., and Pickering, K. 2002. Membrane Aerated Reactors for the Treatment of Simulated Wastewater, WEFTEC 2002, Chicago, Illinois, September 28-October 3.
- Morse, A., Jackson, A., Rainwater, K., and Pickering, K. 2002. Amoxicillin in a Biological Water Recovery System, Proceedings of the 2002 Joint ASCE/EWRI of ASCE International Conference on Environmental Engineering, Niagara Falls, Ontario, Canada, July.

- Morse, A., Jackson, A., and Davio, R. 2001. Environmental Characterization of Traditional Construction and Maintenance Materials, Presented at the Beneficial Use of Recycled Materials in Transportation Applications, Arlington, Virginia, November 13-15, Air and Waste Management Association.
- Muirhead D., Rainwater, K., Jackson, A., Urban, L., Morse, A., Rector, T., and Pickering, K. 2002. Assessment of a Constructed Wetland for Recovery and Beneficial use of Shredded Tires in a Colonia. Proceedings of the 2002 Joint ASCE/EWRI of ASCE International Conference on Environmental Engineering, Niagara Falls, Ontario, Canada, July.

Magazines

- Morse, A. and Andrews, G. 2006. Proposed Changes to High School Curriculum and the Benefits to Engineering Education, Texas Civil Engineer, Winter, 77(1).
- Morse, A. and Wuensche, V. 2006. Engineering Education in the Texas Section—The need for An Advanced Degree, Texas Civil Engineer, Fall, 76(4).

Presentations

Continuing Education Courses

- Morse, A. 2007. The Wastes in Wastewater Treatment and Their Potential for Reuse, Environmental Restoration and Waste Management Short Course, Tuskegee University, September 10.
- Morse, A. 2007. Engineering, Turn it On! ASCE Fall Texas Section Meeting, Fort Worth, TX, October 4.
- Morse, A. 2007. Engineering, Turn it On! ASCE Spring Texas Section Meeting, Tyler, TX, April 12.

*Platform Presentation (Invited**)*

- **Morse, A. 2005. Similarities and Differences of Wastewater Recycling on Earth and In Space, Colorado State University, August.
- **Morse, A., Padhye, L., Jackson, W.A., and Rainwater, K. 2004. Autotrophic Perchlorate Removal in a Membrane Bioreactor. Henry Hunter Lecture Series, Mississippi State University, October 26.
- Vairavan, B., Morse, A., Jackson, W.A., and Green, C. 2004. Hydroponic Chive Growth Using Wastewater, NASA ALS Telecon, July 8.
- Morse, A., Jackson, A., and Kaparathi, S. 2004. Challenges and Benefits of Biologically Treating a Urine-Humidity Condensate Waste Stream, NASA ALS Telecon, February 26.
- **Jackson, W.A. and Morse, A. 2003. Direct Recycling of Wastewater for Terrestrial and Space Applications. Space Life Sciences Training Program. Kennedy Space Center, FL.
- Jackson, A., Rainwater, K., Muirhead, D., Morse, A., and Rector, T. 2003. Development and Evaluation of Biological Reactors for Space Applications. 2003 Bioastronautics Investigators Workshop, Galveston, TX.
- Morse, A., Nash, P. and Davio, R. 2002. A Review of Several States' Environmental Policies for Using Traditional or Recycled Materials in Roadway Construction and Environmental Characteristics of Traditional Materials Used in Texas, Transportation Board Research Board Annual Meeting, Washington D.C., January.

Poster Presentations

- Karnjanapiboonwong, A., Morse, A.N., Anderson, T.A. November 2009. Occurrence of estrogen, triclosan, and caffeine at a wastewater treatment plant and in soil and groundwater at a land application site. Poster for the Society of Environmental Toxicology and Chemistry (SETAC) North America meeting, New Orleans, Louisiana.
- Karnjanapiboonwong, A., Cai, Q., Morse, A.N., Anderson, T.A. November 2008. Sorption of estrogens, caffeine, and triclosan to a sandy loam and a silt loam soil. Poster for the Society of Environmental Toxicology and Chemistry (SETAC) North America meeting, Tampa, Florida.

- Crawley, J., Jackson, W., and Morse A. 2007. Impact of Biological Pretreatment on RO Performance, Poster. International Conference on Environmental Systems, July 10. 1st Place in Student Poster Competition.
- Landes, N., Crawley, J., Low, D., Jackson, W.A., and Morse, A. 2006. Benefits of Biological Pretreatment in Closed Loop Water Reclamation Systems, Water in Arid and Semiarid Lands: Innovative Approaches and Informed Decision-Making, ICASALS Conference, Lubbock, TX November 15-17.
- Landes, N., Jackson, W.A., and Morse, A. 2006. Evaluation of a Microgravity Compatible Membrane Bioreactor for Simultaneous Nitrification/Denitrification, International Conference on Environmental Systems, Norfolk, VA, July.
- Low, D., Jackson, A., and Morse, A. 2006. Effect of Membrane Aging on Oxygen Transfer Rates for Hollow Fiber Membranes Poster, International Conference on Environmental Systems, Norfolk, VA, July.
- Xia, S., Carey, A., Wiesner, T., Jackson, A., and Morse, A. 2004. Modeling a Biological Closed Loop Water Recycling System for Prolonged Manned Space Flight, Graduate Student Poster Competition, Texas Tech University, April.
- Jackson, A., Rainwater, K., Pickering, K., and Morse, A. 2004. Performance of a Small-Scale Biological and Physical Water Recovery System During a Pseudo Closed-Loop Test, Habitation 2004, Rosen Hotel, Orlando, FL, January 4-7.
- Morse, A., Jackson, A., Rainwater, K., and Pickering, K. 2002. Membrane Aerated Reactors for the Treatment of Simulated Wastewater, WEFTEC 2002, Chicago, IL, September 28-October 3. *Awarded Second Place in the WEFTEC 2002 Poster Symposium.*
- Morse, A., Jackson, A., Rainwater, K. and Pickering, K. 2002. Amoxicillin in a Biological Water Recovery System, Texas Space Grant Consortium, Spring Annual Meeting, Houston, TX, May 16-17.
- Muirhead, D., Rainwater, K., Jackson, A., Urban, A., Morse, A., Rector, T., and Pickering, K. 2002. Assessment of a Constructed Wetland for Recovery and Beneficial Use of Shredded Tires in a Colonia. 2002 Joint ASCE/EWRI of ASCE International Conference on Environmental Engineering, Niagara Falls, Ontario, Canada, July.

Other Presentations

- *Panel Host, "What the Best Teachers Do", 2009, Fifth Annual Jumpstart Program, Teaching, Learning, and Technology Center, TTU, Lubbock, TX, August.
 - *Panel Participant, "How Do We Know They're Learning? Assessment in the STEM Disciplines," 2009, Teaching, Learning, and Technology Center, TTU, Lubbock, TX, February 11.
 - *Panel Participant, "Tech Well! A Practical Discussion About Teaching Effectiveness", 2008, Fourth Annual Jumpstart Program, Teaching, Learning, and Technology Center, TTU, Lubbock, TX, August 13.
- Morse, A. Top Ten Tips to be a Successful Engineering Student, Bridge Program, Lubbock, TX, July 2008.

Teaching Experience

Teaching Philosophy

Engineering classes should teach the basic engineering fundamentals as well as problem solving strategies. Mathematical examples are important tools that may be used to improve the students' understanding of engineering principles and applying them. I believe the classroom should be an interactive environment enabling the students to be engaged in the learning processes. I prefer to write my notes on the board while delivering the notes verbally and asking questions of the students. Quizzes, homework, and projects are diagnostic tools to determine my effectiveness as an instructor as well as the understanding of the students. Lastly, I believe in an open door policy so that students find me approachable. For more information regarding my teaching experience, teaching philosophy and examples of my work, please review my Teaching Portfolio.

Instructor

Semester	Course	No. of students
IS 1100	Freshman Seminar	24
Fall 2010	ENVE 4385/CE 5385 Microbial Applications in Environmental Eng.	21
Fall 2010	ENVE 5305 Environmental Systems Design I	4
Fall 2010	CE 4331 Special Topics (Problem Based Learning Steel Structures)	8
Fall 2010	ENGR 1106 Math Fund. For Engineering Students(taught 8/16-8/20)	21
Spring 2010	ENVE 5306 Environmental Systems Design I(co-taught R.H. Ramsey)	4
Spring 2010	CE 4331 Special Topics (Problem Based Learning Concrete Structures)	7
Spring 2010	ENVE 1100 Environmental Engineering Seminar	21
Spring 2010	CE 3309 Environmental Engineering	47
Fall 2009	ENVE 4385/CE 5385 Microbial Applications in Environmental Eng.	18
Fall 2009	ENVE 5305 Environmental Systems Design I	4
Sum II 2009	ENGR 1315 Introduction to Engineering	28
Spring 2009	ENVE 5306 Environmental Systems Design I(co-taught R.H. Ramsey)	3
Spring 2009	ENVE 1100 Environmental Engineering Seminar	24
Spring 2009	CE 3309 Environmental Engineering	54
Fall 2008	CE 3309 Environmental Engineering	63
Fall 2008	ENVE 4385/CE 5385 Microbial Applications in Environmental Eng.	14
Fall 2008	ENVE 5305 Environmental Systems Design I(co-taught R.H. Ramsey)	3
Spring 2008	ENVE 5306 Environmental Systems Design I(co-taught R.H. Ramsey)	10
Spring 2008	ENVE 1100 Environmental Engineering Seminar	18
Fall 2007	CE 3309 Environmental Engineering	60
Fall 2007	ENVE 4385/CE 5385 Microbial Applications in Environmental Eng.	10
Fall 2007	ENVE 5305 Environmental Systems Design I(co-taught R.H. Ramsey)	11
Spring 2007	CE 3309 Environmental Engineering	50
Spring 2007	ENVE 1100 Environmental Engineering Seminar	11
Fall 2006	CE 3309 Environmental Engineering	66
Fall 2006	ENVE 4385/CE 5385 Microbial Applications in Environmental Eng.	20
Spring 2006	CE 3309 Environmental Engineering	44
Spring 2006	ENVE 5306 Environmental Systems Design II(co-taught R.H. Ramsey)	3
Fall 2005	ENVE 4385/CE 5385 Microbial Applications in Environmental Eng.	12
Fall 2005	ENVE 5305 Environmental Systems Design I(co-taught R.H. Ramsey)	3
Fall 2005	CE 3309 Environmental Engineering	52
Spring 2005	CE 3309 Environmental Engineering	36
Spring 2005	ENVE 5306 Environmental Systems Design II(co-taught R.H. Ramsey)	3
Fall 2004	CE 5333 Special Topics	11
Fall 2004	ENVE 5305 Environmental Systems Design I(co-taught R.H. Ramsey)	3
Spring 2004	CE 5333 Special Topics	7
Spring 2004	ENVE 5306 Environmental Systems Design II(co-taught R.H. Ramsey)	6
Fall 2003	ENVE 4390/CE 5390 Water and Wastewater Measurements	18
Fall 2003	ENVE 5305 Environmental Systems Design I(co-taught R.H. Ramsey)	6
Fall 2001	ENVE/CE 3309 Environmental Engineering	25

Graduate Advisory Committees

Chair/Co-chair

Updated February 9, 2011

Student's Name	Degree	Completed
Lokesh Padhye	MSCE (t)	August 2004
Eric McLamore	MSCE (t)	August 2004
Srikara Kaparthy	MSCE (t)	Fall 2004
Sowjanya Mukkamala	MSCE (r)	Fall 2004
Sudha Singavarapu	MSCE (r)	Spring 2005
Noel Ruiz	MSCE (t)	August 2005
Bala Subramanian	MSCE (t)	December 2005
Seena Babu	MSCE (r)	December 2005
Divya Pasupuleti	MSCE (t)	May 2006
Sukrut Khatri	MSCE	
Lakshmipriya Dhanapal	MSCE (t)	August 2006
Nick Landes (co-chair)	MSCE (t)	August 2007
Jason Crawley (co-chair)	MSCE (t)	December 2007
Darryl Low	PhD	December 2010
Prapurna Koney	MSCE	December 2007
Poorva Narsapur	MSCE (t)	August 2008
Jedediah Taylor	MSCE (t)	August 2008
Nicholas Landes	PhD	December 2010
Kristin Peterson	MSCE (t)	August 2010
Timothy Kennedy	PhD	
Josh Petryk	MSCE (r)	December 2010
Tony Vercellino	PhD	
Dylan Christenson	MSCE (t)	

Member

Student's Name	Degree	Completed
Jose Canul	M ETM ®	Spring 2004
Deborah Kvanli	MS Envir Tox	
Sangeetha Balakrishnan	MSCE (t)	December 2005
Balaji Rao	MSCE (t)	December 2006
Joseph Grieco	MSME (t)	August 2007
Deborah Carr	PhD	August 2009
Adcharee Karnjanapiboonwong	PhD	August 2010
Sameera Sanka	MSCE	May 2009
Darcy Chase	MS Envir Tox	

Service

Professional Service

Member, ASCE, Committee on Faculty Development, 10/2010-09/2014
 Vice President-Education, Texas Section, ASCE, 10/2010-09/2011
 Vice President-Education Elect, Texas Section, ASCE, 10/2009-09/2010
 Member, TCEQ Pharmaceutical Disposal Advisory Group 12/2009-05/2010
 Mentor, ExCEED Workshop, Flagstaff, AZ 2009
 Deputy Trustee, West Texas Region, Texas American Water Works Association, 05/2009-04/2011
 Member, Transportation Research Board, Committee on Physiochemical and Biological Processes in Soils, 4/15/2009-4/14/2012
 Liaison, Environmental Engineers of the Future Program for CEE Department
 Corresponding Member, ASCE, Committee on Faculty Development, 2007-2010
 Member, WEF Steering Committee for the Municipal Wastewater Treatment Design Committee, 2007-present

Member, WEF Municipal Wastewater Treatment Design Committee, 2005-present
Member, ASCE EWRI Health and Water Quality Committee (previously the Environmental Processes and Technologies Committee), 2006-present
Chairperson, Texas Section ASCE Education Committee, 2005-2008
Assistant Mentor, ExCEED Workshop, Fayetteville, AR 2006; Flagstaff, AZ 2007, Fayetteville, AR 2008
Book Chapter Reviewer, Jones and Bartlett, Environmental Microbiology, 2006
Book Chapter Reviewer, Versar, Inc., Pharmaceuticals in the Environment: Sources and Their Management, 2006
Proposal Reviewer, EPA P3 Student Design Contest, May 2006
Water Conservation and Reuse Session Chair, Water in Arid and Semiarid Lands: Innovative Approaches and Informed Decision-Making, ICASALS Conference, Lubbock, TX November 15-17
Reviewer for *Air, Water and Soil, An International Journal of Environmental Pollution, Environmental Toxicology and Chemistry, ISA Transactions, Water Environment Research, Environmental Science and Toxicology, Desalination, Journal of Environmental Quality*
Development of Integrated Water Recovery and Automated Control Systems Webpage to showcase the work done at TTU by the plant, computer science and biological water processing groups. For more information, please visit www.iwracs.ce.ttu.edu
Paper Reviewer for International Conference on Environmental Systems, April 2004, April 2005, April 2006, April 2007
Proposal Reviewer for 2003 Request for Preliminary Proposals, The Recycled Materials Resource Center, University of New Hampshire, Durham, New Hampshire, May, 2003. Reviewed three preliminary proposals. One that was recommended was selected for funding

Community Service

Poster Judge, T-STEM Best Practices Conference, February 9, 2010
Mentor, Women in Science Endeavors WISE Conference, Science Spectrum, 2008, 2010
Participated in WE CAN TOUR. Talked about civil and environmental engineering. Students constructed a water filter. Approximately ten 12th grade girls. June 9, 2006
Provided Tours of the NASA lab and discussed biological wastewater treatment:
2007 Friendship Jr. High School, May, 30 students
2004 Bridge Program Participants, 27 August 2004, approximately 20 students
Green Valley Farm Kids, June 15, 2004, 6 students
Shake Hands with Your Future, June 16, 2004, 25 junior high to senior high students
Harwell and Jackson Elementary LEGO Robotics Summer Camp, June 18, 2004, 25 students plus 4 teachers
Participated in Science, It's a Girl Thing. Talked about civil and environmental engineering. Students constructed a gum drop dome and a water filter. June 21, 2004, approximately thirteen 5th and 6th grade girls.
Waters Elementary, 2nd Grade, Miss Merryfield's class. Talked about water treatment, water conservation, and water recovery in space. May 21, 2004, students built water filters, Approximately 18 students.
Ropesville Summer Camp, Taught K through 5th Grade (approximately 100 children) about wastewater and water issues in space. July 23, 2003, demonstrated water treatment using ion exchange. Explained the importance of water in space and earth.

University Service

Member, Tenure and Promotion Guidelines for Education and Outreach Committee, 2010-present
Member, Undergraduate Research Task Force, 2010-present
Member, Cash Chair in Wind Energy/Director of the NWRC Search Committee, 2010-2011
Member TLTC Advisory Committee, 2010-2012

TEACH Program Mentor, Ellen Taylor, 2010-2011
Interim Chair, Executive Council, TTU Teaching Academy Spring 2010
Member, Executive Council, TTU Teaching Academy 2008-2011
Member, Faculty Development Leave Committee, 2008-2011
Member, Library Committee 2007-2009
Member, Faculty Ombudsman ad hoc Committee 2007
Faculty Participant, Women in Science and Engineering (WISE), August 2004 to 2006
Faculty Senate, Senator at Large, September 2004 to May 2007
Faculty Senate, Secretary, September 2005 to May 2006
Senate Liaison, Enrollment Management Council, Faculty Senate, 2004 to 2006
Member, Continued Faculty Status and Welfare Committee, Faculty Senate, 2004 to 2006
Member, Bookstore Advisory Committee, September 2004 to 2005
Member, Graduate Faculty, 2003 to present
Test administrator UIL Calculator Contest, Fall 2003 to present
Member, Committee for the Development of K-12 Environmental Engineering Curriculum

Whitacre College of Engineering Service

ConocoPhillips Academic Success Bridge Faculty Coordinator, Spring 2009-present
Member, Whitacre COE ENGR 1315 Committee, Fall 2008-present
Member, Whitacre COE Computing Committee, Fall 2008-present
Reader, Iron Ring Ceremony, Fall 2007, Fall 2009
Member, Associate Dean for Undergraduate Studies Search Committee, Spring 2007
Member, Undergraduate Program Strategic Planning Committee, Spring 2006
Member, Associate Dean for Undergraduate Studies Search Committee, Fall 2004
Member, Grade Appeal Committee, Summer 2004, ME 4351

Department Service

Member, Environmental Search Committee, 2010-2011
Co-Lead Faculty Advisor for CEE Undergraduate Students, Fall 2010-present
Lead the development of 3 new dual-listed laboratory classes for environmental engineering curriculum (ENVE 4107/ENVE 5107, ENVE 4185/CE 5185, ENVE 4191/CE 5191), Summer 2009
Co-lead the development of two service learning courses: Concrete Structure Service Learning Opportunities and Steel Structure Service Learning Opportunities, Fall 2008
Chair, Structures Search Committee, Fall 2008- Spring 2009
FE Review Class, visiting lecturer, Fall 2003 to present
Chair, Committee that developed Suggested Teaching Practices and Other Helpful Hints for Tenure-Track and Adjunct Professors, 2006
Faculty Advisor for CE Undergraduate Students, Fall 2005-present
Participated in Freshman and Transfer Student Orientation, Summer 2004 to present
Curriculum Committee, Spring 2004 to present
Scholarship Committee, Fall 2003 to present
Graduate School Committee, Fall 2003 to 2006
Recruiting/Public Relations, Fall 2003 to present
ASCE Student Chapter Faculty Advisor, Fall 2003 to present
Co-advisor Chi Epsilon Student Chapter, Fall 2008 to present

Public Relations and Recruiting

Manned booth at University Day, United Spirit Arena, each semester, Fall 2003 to present
Manned booth at Major Fair, TTU Library, Spring 2004
Manned booth at South Plains Career Day, September 2003

University Service—Served as Dean Representative for Dissertation Defense

Student	Major	Year
Christopher Sheppard	Plant and Soil Science	2009
James Campbell	Biological Sciences	2006
Jaclyn Canas	Environmental Toxicology	2005
D. Alan Peters	Agronomy	2003

Other Qualifications

Analytical Experience

High pressure liquid chromatography; Ion Chromatography; Flame Atomic Absorption Spectrometry; Graphite Furnace Atomic Absorption Spectrometry; Gas Chromatography/Mass Spectrometry; TOC analyzer; ICP; metal and organic extraction; standard wet chemistry techniques

Workshops

ABET Faculty Workshop on Sustainable Assessment Processes, October 2009

ExCEEEd II Workshop, Flagstaff, AZ 2009

Organizer and Participant, ASCE EWRI Continuing Education Workshop, EDCs and Pharmaceuticals: Treatment Tools and Public Awareness, Presented by Erin Snyder, November 2008.

HERS, Higher Education Resource Services, Workshop, Denver, CO, August, September, October, November, 2008

Practitioner and Faculty Advisor Workshop, ASCE, August 2006

Water Treatment Plants-Theory and Design, 3-day Short Course, The University of Texas at Arlington, May 22-24, 2006

Wastewater Treatment Plants-Theory and Design, 3-day Short Course, The University of Texas at Arlington, May 19-21, 2005

Attended Write Winning Grants Seminar, conducted by Grant Writers' Seminar and Workshops, LLC, April 20, 2004

ExCEEEd Workshop, Fayetteville AK, July 2004