

VITAE for Jeanette Thurston

EDUCATION

- Ph.D. 2001, Soil, Water and Environmental Science & Microbiology, University of Arizona.
M.S 1997, Environmental Science, University of Arizona.
B.S. 1995, Microbiology (major) Chemistry (minor), University of Arizona.

WORK HISTORY

- 2019-Present Director, Food Science Institute, Kansas State University
2015-2019 Science Program Officer (GS-15), Office of the Director, USDA, NIFA, Washington D.C.
2009-2015 National Program Leader Food Safety, Institute of Food Safety and Nutrition, USDA, NIFA, Washington D.C.
2004-2009 Adjunct Assistant Professor of the Department of Civil Engineering, Duke University.
2001- 2009 Research Microbiologist, USDA, ARS, Lincoln, NE.
2001-2009 University of Nebraska Adjunct Assistant Professor of the Departments of Agronomy and Biological Sciences, Lincoln, NE.
1997-2001 Research Assistant/Associate, Soil, Water and Environmental Science Department, University of Arizona.
1996-1997 Parasitology Lab Supervisor, CLS Laboratory, Rancho Cordova, CA.
1995-1996 Research Assistant, Department of Soil and Water Science, University of Arizona.

HONORS AND AWARDS

- USDA-NIFA Director's Award for Advancing Science, 2019
USDA Research, Education, and Economics (REE) Mission Area Undersecretary's Award, 2018
USDA-NIFA Outstanding Performance Award, 2011, 2015, 2016, 2017, 2018
USDA-NIFA Superior Performance Award, 2009, 2010, 2012
USDA-ARS Superior Performance Award, 2003, 2006, 2007, 2008.
Nomination for USDA-ARS Early Career Research Scientist Award, 2006 & 2007.
USDA-ARS Outstanding Performance Award, 2004 & 2005.
National Research Council Postdoctoral Fellowship, 2001. (Declined).
National Security Education Program Graduate Fellowship, 1998-2000.

PUBLICATIONS

INVITED BOOK CHAPTERS

- Dowd, Scot E., Hiroshi Ishizaki, and **Jeanette A. Thurston-Enriquez**. 2007. Microarrays: Design and use for agricultural and environmental applications. *In*: Manual of Environmental Microbiology. Eds Christon Hurst *et al.* 3rd Ed. Pp. 663-675. ASM Press, Washington D.C.
- Enriquez, C. and **J. Thurston-Enriquez**. 2006. Adenoviruses. *In*: Waterborne Pathogens: Manual of water supply practices. 2nd ed. Pp. 253-258. American Water Works Association, Denver, CO.

Dowd, S. E, **Thurston-Enriquez, J.** and Brashears, M. 2004. Environmental reservoirs and transmission of foodborne pathogens. *In: Pre-Harvest and Post-Harvest Food Safety: Contemporary Issues and Future Directions.* Pp. 161-172. Blackwell Publishing, Ames, IA.

Thurston-Enriquez, J. A. 2003. Pathogens in water. *In: The Encyclopedia of Water Science.* B. A. Stewart and T. Howell (ed.). Pp. 645-649. Marcel Dekker, Inc., New York, NY.

Thurston-Enriquez, J. A. 2002. Viral Disinfection. *In: Encyclopedia of Environmental Microbiology.* Gabriel Bitton (ed.). Vol. 6: Pp. 3260-3268. John Wiley and Sons Inc., New York, NY.

SCIENTIFIC PUBLICATIONS

Tricarico, J., Slimko, M., Graves, W., Eve, M., and **J. Thurston.** 2019. Elevating dairy research and extension through partnership: Outcomes from the United States Department of Agriculture and National Dairy Council collaborative meeting to develop a coordination roadmap. *J. Dairy Sci.* <https://doi.org/10.3168/jds.2019-16579>.

Trtanj, J., Jantarasami, L, Brunkard, J., Collier, T., Jakobs, J., Lipp, E., McLellan, S., Moore, S., Pearle, H., Ravenscroft, J. Sengco, M., and **J. Thurston.** 2016. *Ch. 6: Climate Impacts on Water-Related Illness. The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. U.S. Global Change Research Program,* Washington, DC, 157–188. <http://dx.doi.org/10.7930/J0R49NQX>

L. Ziska, A. Crimmins, A. Auclair, S. DeGrasse, J.F. Garofalo, A.S. Khan, I. Loladze, A.A.Pérez de León, A. Showler, **J. Thurston,** and I. Walls. 2016. *Chapter 7: Food safety, nutrition, and distribution. The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. U.S. Global Change Research Program,* pp. 189-216. <http://dx.doi.org/10.7930/J0R49NQX>

Linden, Karl G., **J. Thurston,** and A. Eischeid. 2014. Enhanced Disinfection of Adenoviruses with UV irradiation. *WasteReuse Research Foundation Report: WRRF-06-011 (peer reviewed).*

Gold, A.J, D. Parker, R. M Waskom, ...**J. Thurston,** et al. 2013. Advancing water resource management in agricultural, rural, and urbanizing watersheds: Why land-grant universities matter. *J. Soil Water Conserv.* **68: 337-348.**

*Kim, M, J. Mcghee, S. Lee and **Jeanette Thurston.** 2011. Comparative prediction schemes using conventional and advanced statistical analysis to predict microbial water quality in runoff from manured fields. *J. Environ. Sci. Health, Part A.* **46: 1-9.**

*Eischeid, Ann, **Jeanette Thurston** and Karl Linden. 2011. UV Disinfection of Adenovirus: Current State of the Research and Future Directions. *Crit. Rev. Environ. Sci. Technol.* **41:1-22.**

Black, S., **J. A. Thurston,** and C. Gerba. 2009. Determination of Ct values for chlorine of

resistant enteroviruses. *J. Envir. Sci. Health, Part A*. **44:336-339**.

Petri, Brian, Linden, Karl, **Thurston, Jeanette**. 2009. UV Reactor Challenges with Adenovirus: A comparison of adenovirus and MS2 inactivation in low pressure and medium pressure UV reactors. *In: Proceedings of the Water Environment Federation, Disinfection* **346-349**.

Dowd, S. E. and **J. A. Thurston-Enriquez**. 2008. Evaluation and guidelines for use of polymerase chain reaction-computer database homology comparison (PCR-CDHC) for detection and species determination of human pathogenic microsporidia. *Af. J. Microbiol. Res.* **2: 1-7**.

Linden, K.G., **Thurston, J.**, Schaefer, R., and Malley, J.P. 2007. Enhanced UV inactivation of adenoviruses under polychromatic UV lamps. *Applied and Environmental Microbiology* **73: 7571-7574**.

Jain, Shubhra, Brown, Jess C., Salverson, Andrew T., Atapattu, Kaumudi P., Wade, Tavy, Pryor, Marsha A., Linden, Karl G., **Thurston-Enriquez, Jeanette**. 2007. Use of Ozone, UV, and Advanced Oxidation Processes for Reclaimed Water Treatment, Disinfection, and Microcontaminant Destruction. *In: Proceedings of the Water Environment Federation, Compounds of Emerging Concern*, **68-85**.

Berry, E. D., B. L. Woodbury, J. A. Nienaber, R. A. Eisenberg, **J. A. Thurston**, and J. E. Wells. 2007. Incidence and persistence of zoonotic bacterial and protozoan pathogens in a beef cattle feedlot runoff control-vegetative treatment system. *Journal of Environmental Quality*. **36: 1873-1882**.

Thurston, J., K. Linden, and A. Salverson. Adenovirus occurrence in wastewater and their reduction by reclaimed water treatment technologies. 2007. *In: 2007 Joint World Congress of the International Ozone Association and International Ultraviolet Association Proceedings CD*.

*Kahler, Amy M. and **Jeanette A. Thurston-Enriquez**. 2007. Human pathogenic microsporidia detection in agricultural samples: method development and assessment. *Parasitology Research* **100:529-538**.

Thurston-Enriquez, Jeanette A., Haas, Charles N., Jacangelo, Joseph, and Gerba, Charles P. 2005. Inactivation of enteric adenovirus and feline calicivirus by ozone. *Water Research* **39:3650-3656**.

Thurston-Enriquez, J. A., J. E. Gilley, and B. Eghball. 2005. Microbial quality of runoff from no-till agricultural plots treated with livestock manure. *Journal of Water and Health* **3: 157-171**.

Thurston-Enriquez, Jeanette A., Haas, Charles N., Jacangelo, Joseph, and Gerba, Charles P. 2005. Inactivation of enteric adenovirus and feline calicivirus by chlorine dioxide. *Applied and Environmental Microbiology* **71: 3100-3105**.

Thurston-Enriquez, J. and T. Moorman. 2004. Impacts of pathogens on water quality. *In: Workshop Report: Pathogens in the Environment*. Kansas State University Press, Kansas, MO. Pp. 39-43.

Henry, C. and **Thurston-Enriquez, J. A.** 2003. Impact of a constructed low water stream crossing, an innovative BMP, on microbial water quality of a rangeland pasture stream. ***American Society for Agricultural Engineers Annual Meeting Paper #032313.***

Thurston-Enriquez, J. A., Haas, C. N., Jacangelo, J., and Gerba, C. P. 2003. Chlorine inactivation of adenovirus type 40 and feline calicivirus. ***Applied and Environmental Microbiology.* 69: 3979-3985.**

Thurston-Enriquez, J. A., Haas, C. N., Jacangelo, J., Riley, K., and Gerba, C. P. 2003. Inactivation of feline calicivirus and adenovirus type 40 by ultraviolet radiation. ***Applied and Environmental Microbiology* 69: 577-582.**

Thurston-Enriquez, J.A., Watt, P. M., Dowd, S. E., Enriquez, R., Pepper, I. L., and Gerba, C. P. 2002. Detection of protozoan parasites and microsporidia in irrigation waters used for food production. ***Journal of Food Protection.* 65: 378-382.**

Thurston-Enriquez, J. A. 2002. A solution at the source? Defining and solving manure-borne pathogen transmission from animal feeding operations. ***Wat. Cond. Purific.* 44: 76-79.**

Thurston, J. A., Gerba, C. P., Foster, K. E., Karpiscak, M. M. 2001. Fate of indicator microorganisms, *Giardia* and *Cryptosporidium* in two constructed wetlands. ***Water Research* 35: 1547-1551.**

Thurston, J. A. 2001. Occurrence of Human Pathogenic Microsporidia in Irrigation Water and Ultraviolet Light and Chlorine Inactivation of Enteric Adenovirus Type 40 and Feline Calicivirus. 137 pp. **University of Arizona Ph. D. Dissertation.**

Thurston, J., Haas, C., and Gerba, C. 2000. Chlorine and monochloramine disinfection of calicivirus. *In: Arizona Water Pollution Control Association 73rd Annual Conference Proceedings.* CD.

Gerba, C.P., **Thurston, J. A.**, Falabi, J. A., Watt, P. M. and Karpiscak, M. M. 1999. Optimization of artificial wetland design for removal of indicator microorganisms and pathogenic protozoa. ***Water Science and Technology* 40: 363-368.**

Dowd, S.E., **Thurston, J. A.**, Gerba, C. P., and Pepper, I. L. 1999. Development of improved methods for detection and species determination of human pathogenic microsporidia in water. *In: American Water Works Association Water Quality Technology Conference and Exhibition Proceedings.* CD.

Karpiscak, M. M., Gerba, C. P., Watt, P. M., **Thurston, J.**, Falabi, J. and Foster, K. E. 1998. Microbial removal from constructed wetlands for wastewater quality improvements and habitat. *In: Arizona Water Pollution Control Association 1998 Annual Conference Proceedings.* CD.

Thurston, JA. Fate of Pathogenic and Indicator Microorganisms in Two Subsurface Multispecies Constructed Wetlands. 96 pp. **University of Arizona M.S. Thesis.**

* Graduate students or post-doctoral associate supervised/mentored

GRANTS AND CONTRACTS

- 2007-2008 Linden, Karl and **Jeanette Thurston**. Pilot scale investigation for adenoviruses. Trojan Technologies. \$30,000.
- 2007-2012 Miller, Dan and **Jeanette Thurston**. Environmentally sound manure management for the reduction of health-related microorganisms and odor. USDA-ARS CRIS FUNDS: ~\$1,200,000.
- 2006-2011 Linden, Karl and **Jeanette Thurston**. Enhanced disinfection of adenoviruses with UV irradiation. WateReuse Foundation, \$128,609.
- 2006-2008 **Thurston-Enriquez, Jeanette**. Pathogens in bioaerosols generated by livestock spray irrigation practices. USDA-ARS Research Award \$100,000. (Funds to hire a postdoctoral research associate).
- 2005-2006 **Thurston-Enriquez, Jeanette**, Wienhold, Brian, and Dan Miller. Understanding health-related microbial, odor, and ammonia fate following swine lagoon wastewater application by center pivot irrigation. National Pork Board, \$40,000.
- 2005-2007 Linden, Karl, Andrew Salvesson, Deborah Huffman, and **Jeanette Thurston-Enriquez**. Study of innovative treatments for reclaimed water (WRF-02-009). WateReuse Foundation, \$460,000.
- 2004-2007 **Thurston-Enriquez, Jeanette** and Christopher Henry. Assessment of Livestock Manure Management Systems for the Reduction of Manure-borne Contaminants. Nebraska Department of Environmental Quality, \$80,000.
- 2002-2007 **Thurston-Enriquez, Jeanette**. Occurrence and dissemination of manure-borne zoonotic pathogens. USDA-ARS CRIS, \$744,720.
- 2002-2003 **Thurston-Enriquez, Jeanette** and Christopher Henry. Microbial quality of constructed wetland effluent and perennial stream water impacted by a cattle stream crossing. Nebraska Environmental Trust, \$9,000.
- 2002 **Thurston-Enriquez, Jeanette**. USDA-ARS Summer Intern Award, \$5000. (Funds to hire a student summer intern).

COMMITTEE, PANEL AND TEAM MEMBER ACTIVITIES (most significant)

- 2016-2019 Office of Science Technology and Policy, National Science and Technology Committee, Committee on Science, Subcommittee for Food and Agriculture (Executive Secretary)
- 2016-2019 USDA Agricultural Outlook Forum Committee (NIFA lead)
- 2016-2019 APLU Experiment Station Committee on Organization and Policy (NIFA liaison)
- 2016 GAO panelist for "Pathogen Inactivation Protocols for High Containment Labs" and provided expertise for the report "High Containment laboratories: Improved Oversight of Dangerous Pathogens Needed to Mitigate Risk."
- 2016-2018 NIFA AAAS Fellow Selection Committee
- 2013 NIFA AFRI Water in Agriculture RFA Team (co-lead)
- 2013 ILSI North American Technical Committee on Food Microbiology Roundtable, Washington, DC.
- 2013 Pew Charitable Trust: Foodborne Urinary Tract Infections: Assessing the State of the Science, Expert Panel, Washington, DC.
- 2012-2019 NIFA Strategic Planning Team

- 2012-2015 Partnership for Food Safety Education-Federal Partner Committee
 2012 USDA Antimicrobial Resistance Planning Team, Beltsville, MD.
 2012 Food Safety Panel at the University of Arizona Annual Food Safety Consortium Retreat, Tucson, AZ.
- 2011-2014 National Research Dairy Program-Food Safety Platform Team Member
 2011-2013 USDA REE Water Team (departmental level science priority and coordination)
 2011 VA Tech Univ. Department of Food Science and Technology—Departmental Review Team, Blacksburg, VA.
- 2011 NSF Expert Panel: Microbiome, Washington, DC.
 2010 Environmental Virology Panel Member at the Water and Watersheds Program Workshop, Cornell, NY.
- 2010 Federal Expert Panel at the Produce Safety Workshop, UC Davis.
 2008 Chair of ASM symposium “Bioaerosols in Agricultural Environments”
 2006-2007 CSREES Expert Panel for Pathogen Issues for the Livestock and Poultry Environmental Learning Center Project
- 2006 WaterReuse Foundation Microbiology Panel Research Needs Workshop
 2006 Organizing Committee for WaterReuse Foundation/USDA Workshop on Reclaimed Water Uses in Agriculture, Santa Rosa, CA.
- 2006 American Water Works Association Expert Panel Member: Adenoviruses: State of the Science Workshop, Los Angeles, CA.
- 2005-2009 Professional Advisory Committee for the American Water Works Research Foundation (AWWARF) (Viral disinfection), Denver, CO.
 2005 North Dakota State University Research Review Panel, Dickinson, ND.
- 2002-2009 USDA-ARS Biosafety & Safety Committees, Lincoln, NE.
 2002-2009 Water Quality and Safety Professional Development Group, International Association for Food Protection.
- 2003-2004 USDA-ARS National Program 206 Planning Committee, Washington, D.C. & Atlanta, GA.
- 2002 Merit Review Panelist, 2002 National Security Education Program David L. Boren Graduate Fellowships Competition, Washington, D.C.

PROFESSIONAL REVIEW ACTIVITIES

- 2017-2018 NASA Roses Program Peer Review Panel
 2013 FDA Center for Produce Safety—Review Panel Member for FDA’s Centers of Excellence
 2013 Health Canada & Genome Alberta—Grant Program Panel Member
 2010 Promotion and Tenure Committee Member for University of Washington
 2007-2011 American Water Works Research Foundation-Grant & Post-Award Review Panel Member

Ad-hoc Reviewer (2009-Present):

Applied and Environmental Microbiology
 Journal of Environmental Science and Health-Part A
 Journal of Animal Science
 Journal of Applied Microbiology
 Journal of Food Safety
 Journal of the Soil Science Society of America
 Journal of Virology
 Journal of Virological Methods

Grants & Research Reports:

INVITED ORAL PRESENTATIONS (most significant)

“NIFA: Advancing Agricultural Research, Education and Extension” at the USDA-National Dairy Council Elevating Dairy Research and Extension Through Partnership Workshop, Beltsville, MD. 2018.

“National Institute for Food and Agriculture: User Inspired Science Transforming Lives” at the American Association for State Colleges and Universities Grants Research Center Funding Competitiveness Conference, Washington, D.C. 2018.

“USDA-NIFA: User Inspired Science Transforming Lives” at the 2017 National Council on Science and the Environment, Washington, D.C. 2017.

“USDA Food Safety Science and Impacts” **Keynote Speaker** at the 2013 China International Food Safety & Quality Conference, Beijing, China. 2013. *(also presented at the Tianjin University of Science and Technology and China Agricultural University in Beijing)*

“National Directions in Agriculture, Water and Food Safety” at the Joint IIT IFSH and UW Food Research Institute Water Quality and Food Safety Symposium, Chicago, IL. 2013.

“An Overview of USDA Food Safety Priorities” at the ILSI North American Technical Committee Roundtable on Food Microbiology, Washington, DC. 2013.

“USDA: Building Stronger Agriculture for Future Generations” **Keynote Speaker** at the Southwest Agriculture Summit, Yuma, AZ. 2011.

“USDA-NIFA Food Safety Programs and Priorities” at the Produce Marketing Association Meeting, Washington, DC. 2011.

“The National Institute of Food and Agriculture: Advancing Food Safety through Research, Education and Extension” at the University of Arizona and Arizona State University, Tucson and Phoenix, AZ. 2011.

“USDA-NIFA Competitive Programs” Grocery Manufacturer’s Association, Washington DC. 2011.

“USDA-NIFA Programs and Priorities” at the NSF Sponsored “Novel Sampling and Sensing Technologies Workshop” Atlanta, GA. 2011.

“Fundamental mechanisms in the extreme UV resistance of adenovirus” at the International Water Association, World Congress, Montreal CA. 2010. Presented by Karl Linden (co-PI).

“Animal Agricultural Impacts on Water Quality” at the International Association of Food Protection, Columbus, OH. 2008.

“Manure-borne microorganisms in agricultural environments” at the Pest Crop Management Workshop and at Montana State University, Bozeman, MT. 2008.

“Adenovirus occurrence in wastewater and reduction by reclaimed water treatment technologies” at the 2007 World Congress on Ozone and Ultraviolet Technologies, Los Angeles, CA. 2007.

“Manure-borne microorganisms in agricultural environments” at the Michigan State University Pathogen Workshop Series, Lansing, MI. 2007.

“Pathogens in manure: Should we be concerned?” National Livestock and Poultry Learning Center National Broadcast, Lincoln, NE. 2006.

“Pathogen concerns for reclaimed water” WateReuse Foundation/USDA Workshop on Reclaimed Water Use in Agricultural Environments, Santa Rosa, CA. 2006.

“Environmentally Transmitted Pathogens” at the Heartland Regional Water Quality Conference (EPA, CSREES, USDA, producers, State-NE, KS, MO, IA- agencies, researchers), Nebraska City, NE. 2006.

“Are pathogens impacting water quality?” at the Heartland Regional Water Quality Conference (EPA, CSREES, USGS, and State Agencies), Overland Park, KS. 2005.

“Constructed wetlands for the reduction of manure-borne fecal indicator and pathogenic microorganisms from dairy cattle wastewater” at the 9th Annual International Conference on Wetland Systems for Water Pollution Control, Avignon, France. 2004.

“Impacts of Pathogens on Water Quality” at the multi-agency (CSREES, USDA-ARS, and USEPA) Environmental Pathogens Meeting, Kansas City, MO. 2004.

“Impact of Animal Agriculture on Microbial Water Quality” at the International Association for Food Protection Conference, New Orleans, LA. 2003.

“Pathogen Reduction by Manure Composting: Issues, Criteria, and Testing” at the American Society for Agronomists Annual Meeting, Denver, CO. 2003.

“Inactivation of Feline Calicivirus and Adenovirus Type 40 by Ultraviolet Radiation” at the Water Environment Federation’s “Disinfection 2002: Health and Safety Achieved Through Disinfection” Conference, St. Petersburg, FL. 2002.

PROFESSIONAL TRAINING

2018 Leadership for a Democratic Society, Federal Executive Institute, OPM, Charlottesville VA (320 hr; Certificate of Mastery)

2017 Accountability for Results, Brookings Institute, Washington DC (8 hr)

2017 Leading Through Influence, Brookings Institute, Washington DC (16 hr)

2015 Lead21

2010 Food Safety Risk Management, Center for Food Safety and Nutrition; Online Course (40 hr).

2009 Introduction to Quantitative Microbial Risk Assessment; ASM (8 hr).

- 2008 Introduction for Quantitative Microbiological Risk Assessment, American Society for Microbiology General Meeting, Northeastern University, Boston, MA (8 hours)
- 2005 Congressional Briefing, The Government Affairs Institute, Georgetown University, Washington, D. C. (40 hours).
- 2004 Seminar for New Managers: Leading People, U. S. Office of Personnel Management, Denver, CO. (80 hours, 3 College Credits).
- 2003 Communicating with Skill for Managers and Supervisors, Rockhurst University, Lincoln, NE. (8 hours).
- 2003 Powerful Communication Skills for Women, Rockhurst University, Omaha, NE. (8 hours).

GRADUATE STUDENT AND POST-DOCTORAL ADVISING

MAJOR ADVISOR

1. Jennifer D. Frohner. M.S. Biological Sciences. Thesis Title: Health-Related Microbiological Aerosols Originating from Spray Irrigation of Cattle Wastewater. University of Nebraska. 2005.
2. Amy D. Kahler. M.S. Biological Sciences. Thesis Title: A Modified Method for the Detection of Human Pathogenic Microsporidia in Agricultural Samples. University of Nebraska. 2005.
3. Derek M. Johnson. M.S. Agronomy. Thesis Title: Bacterial Community Profiling in a Constructed Wetland Receiving Dairy Cattle Wastewater. University of Nebraska. 2007.

GRADUATE COMMITTEES

1. Alaine Knipes. Ph.D. Biological Sciences. Dissertation Title: Community Structure and Dynamics of Monogenea and Trematoda in Three North American Cyprinid Species in the Salt Water Valley Watershed. University of Nebraska. 2010.
2. Anne Eischeid. Ph.D. Environmental Engineering. Dissertation Title: Fundamental Mechanisms in the Extreme UV Resistance of Adenoviruses. Duke University. 2009.

POST-DOCTORAL ADVISING

1. Dr. Minyoung Kim. Topics of Research: Manure-borne contaminant transport through runoff and bioaerosols. USDA-ARS. 2005-2007.

TEACHING

- 2000-2009 Various lectures at the University of Arizona and the University of Nebraska-Lincoln on the following topics: drinking water and wastewater treatment, general microbiology, soil microbiology, enteric pathogens and fecal indicators and their detection in the environment, environmental public health microbiology (water quality), toxicology, and environmental virology. Undergraduate and graduate level courses.
- 2000-2001 Department of Veterinary Science and Microbiology Teaching Assistant. Class: General Microbiology Laboratory. Undergraduate level course.
- 1997-1998 University of Arizona, Department of Soil, Water and Environmental Science Teaching Assistant. Class: Environmental Microbiology Laboratory. Undergraduate and graduate student level course.

