

CURRICULUM VITAE
Tammy H. Boles, Ph.D.
Associate Professor

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Education

- Ph.D. Environmental Sciences – Chemistry Concentration, Tennessee Technological University, 2009
Dissertation: *Detection and Analysis of Amphetamine-Type Stimulants in Wastewater*
- M.S. Chemistry. The University of South Carolina, 1992
Thesis: *Quantitation of Maillard Reaction Products in Tissue Protein*
- B.S. Chemistry. The University of South Carolina, 1989

Professional Experience

- 2019-present Associate Professor, School of Environmental Studies, Tennessee Tech University, Cookeville, TN
- 2013-2019 Assistant Professor, School of Environmental Studies, Tennessee Tech University, Cookeville, TN
- 2004-2012 Coordinator of Programs, School of Interdisciplinary Studies, Tennessee Tech University, Cookeville, TN
- 1994-2004 Research Assistant II, Center for the Management, Utilization, and Protection of Water Resources, Tennessee Tech University, Cookeville, TN
- 1993-1994 Laboratory Manager, Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX
- 1992-1993 Research Assistant, Stillmeadow & Associates, Sugarland, TX

Teaching Experience

ESS 1020: Connections to Environmental and Sustainability Studies
ESS 1100: Introduction to Environmental Studies
ESS 3710: Chemistry and the Environment
ESS 4001: Society and the Environment: Capstone Experience Part 1
ESS 4002: Society and the Environment: Capstone Experience Part 2
ESS 4092: Special Topics: Pharmaceuticals in the Environment
ESS 4093: Special Topics: Environmental Chemistry Research
ESS 4900: Internship Summer
ESS 6970: Special Topics: Environmental Chemistry
ESS 6970: Special Topics: Plastics as Persistent Pollutants
EVSC 6010: Environmental Chemistry
EVSC 7310: Environmental Forensics
CHEM 4991: Introduction to Research
CHEM 4992: Introduction to Research
CHEM 4993: Introduction to Research
CHEM 6900: Directed Studies
CHEM 6970: Advanced Special Topics

Research Interests

Pharmaceuticals and pesticides in wastewater and surface waters by LC-MS/MS
Detection of microplastics in surface water, wastewater, soil, and sludge
Metals in water, soil, and plants by ICP-MS and ICP-OES

Professional Society Memberships

American Chemical Society, Environmental and Toxicology Divisions
Sigma Xi, Scientific Research Society
International Society of Environmental Forensics
Tennessee Academy of Science
Women in Higher Education in Tennessee
American Association of University Women

Oral Presentations

Boles, T.; Reynolds, S.; Mahmoudi, F. Detection of Opioids in Urban Wastewater over a Two-Year Period Using SPE and LC-MS/MS. In *Spring 2019 American Chemical Society National Meeting and Exposition*; 2019.

Reynolds, S.; Boles, T. Detection and Quantification of Various Opioid Compounds in Urban Wastewater by Utilization of Liquid Chromatography-Tandem Mass Spectrometry. In *251st American Chemical Society National Meeting and Exposition*.

Newberry, L.; Boles, T. Demethylation of Methamphetamine by Ultra Violet Tertiary Treatment at Wastewater Treatment Plants. In *251st American Chemical Society National Meeting and Exposition*; 2016.

Newberry, L.; Boles, T. Demethylation of Methamphetamine by Ultra Violet Tertiary Treatment at Wastewater Treatment Plants. In *251st American Chemical Society National Meeting and Exposition*; 2016.

Poster Presentations

Fulmer, M.; Boles, J.; Tammy Boles. Screening Method Development for the Identification of Nontargeted Designer Drugs by GC-MSn and LC-MS/MS. In *255th American Chemical Society National Meeting and Exposition*; 2018.

Parker, W.; Boles, T. Analysis of Wastewater Samples for Attention Deficit Hyperactivity Disorder (ADHD) Medications by Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS). In *255th American Chemical Society National Meeting and Exposition*; 2018.

Fulmer, M.; Loftis, A.; Donegan, J.; Boles, T. Comparison of Oasis WCX and Oasis HLB Sorbents for Polar Organic Chemical Integrative Samplers and for Solid Phase Extraction of Wastewater for Detection and Quantification of Amphetamine-Type Stimulants. In *253rd American Chemical Society National Meeting and Exposition*; 2017.

Parker, W.; Moffitt, K.; Loftis, A.; Boles, T. Analysis of Wastewater Samples for Opioids Using Collection by Passive and Grab Sampling and Extraction by Reversed-Phase and Mixed-Mode Sorbents. In *253rd American Chemical Society National Meeting and Exposition*; 2017.

Parker, W.; Boles, T. Effects of Time Delay between Sample Collection and Extraction of Wastewater Samples for Amphetamine and Opioid Analysis. In *251st American Chemical Society National Meeting and Exposition*; 2016.

Butner, M.; Craine, C.; Boles, T. Detection of Amphetamine Type Substances in Sewers Using Polar Organic Chemical Integrative Samplers. In *249th American Chemical Society National Meeting and Exposition*; 2015.

Craine, C.; Butner, M.; Tammy Boles. Detection of Precursors to Methamphetamine in City Sewers Lines. In *249th American Chemical Society National Meeting and Exposition*; 2015.

Publications

Boles, T.H., Douglas, S.B.R., Mahmoudi, F., and DeLafontaine, W.D. (under revision) "Detection of Opioids in Urban Wastewater Over a Two-Year Time Period Using SPE and LC-MS/MS." *Water*

Boles, T.H. & Wells, M.J.M. "Analysis of amphetamine and methamphetamine in municipal wastewater influent and effluent using weak cation-exchange solid-phase extraction (SPE) and

liquid chromatography tandem mass spectrometry (LC-MS/MS)." *Electrophoresis*, 37 (23-24), 2016, 3101-3108.

Boles, T.H. and M.J.M. Wells. "Detection of Methamphetamine in Sewers Using Passive Sampling." *Science of the Total Environment*, 2014, 472, 9-12.

Boles, T.H. and M.J.M. Wells. "Analysis of Amphetamine and Methamphetamine as Emerging Pollutants in Wastewater and Wastewater-impacted Streams." *J. Chromatogr. A*, (2010), 1217 (16), 2561-2568.

Trachtman H; Futterweit S; Maesaka J; Ma C; Valderrama E; Fuchs A; Tarectecan A A; Rao P S; Sturman J A; Boles T H; et al. "Taurine Ameliorates Chronic Streptozocin-Induced Diabetic Nephropathy in Rats." *Am. J. Physiol.* (1995), 269(3 Pt 2), F429-38.

Students Mentored

Faranak Mahmoudi, PhD Environmental Sciences-Chemistry, 2018
Chioma Onwuchekwa, PhD Environmental Sciences-Chemistry, 2022
Oluwasola Ifedayo, PhD Environmental Sciences-Chemistry, current
Sarah Reynolds, MS Chemistry, 2016
Laura Newberry, MS Chemistry, 2016
Madison Talley, MS Chemistry, 2020
Waverly DeLafontaine, MS Chemistry, 2020
Ademola Adeoye, MS Chemistry, current

Service on Student Committees

Brandi Fletcher, MPS Strategic Leadership, 2014
Emmanuel Ogunkunle, MS Chemistry, 2018
Haley White, MS Chemical Engineering, 2019
Lily Pipkin, MS Chemistry, 2021
Clement Aruada, MS Chemistry, 2022
Oluwasola Ifedayo, MS Chemistry, current
Busola Olope, MS Chemistry, current
Jessee Griffith, PSM Environmental Informatics, current
Randi Kalahe Padikoralage, MS Chemistry, current
Kayla Key, PhD Environmental Sciences-Biology, 2019
Cody Godwin, PhD Environmental Sciences-Biology, 2021
Sabrina Buer, PhD Environmental Sciences-Integrated Research, 2022
Lesta Fletcher, PhD Environmental Sciences-Chemistry, 2022
Kenneth Pierce, PhD Environmental Sciences-Agriculture, 2023
Christopher Waters, PhD Environmental Sciences-Biology, current
Richard Pirkle, PhD Environmental Sciences-Biology, current
Ronnie Dunn, PhD Environmental Sciences-Agriculture, current
Catherine Philips, PhD Environmental Sciences-Integrated Research, current
Dushmantha Namal Abeysooriya, PhD Environmental Sciences-Chemistry, current
David Sutton, PhD Environmental Sciences-Integrated Research, current

University and College Committee Service

Institutional Review Board for Human Subjects Committee

Graduate Faculty

Military Affairs Advisory Committee

Building and Grounds Committee

Appalachian Studies Association Annual Conference 2025 Committee

Prior Learning Assessment Committee

Community Organization Service

Rotary International, Rotary Club of Cookeville-Sunset, Member and Past – President