

Sheridan Brewer

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Education

The University of Tennessee Knoxville

Bachelor of Science in Biology,
Honors Microbiology Major and Neuroscience Minor

*Thesis: Isolation and Characterization of Anaerobic Microbial
Communities from Hydraulic Fracturing Fluids*

GPA: 3.65/4.00

May 2016

San Jose, Costa Rica

University of Tennessee-Universidad Internacional de las Américas
Intermediate Spanish 221 and 222 credits

July 2013

Lewis County High School

GPA: 4.0

May 2011

Honors

Dean's List

- Summa Cum Laude
- Magna Cum Laude
- Cum Laude

Fall 2012, Fall 2014
Fall 2011, Spring 2014, Fall 2015
Fall 2011

Volunteer Scholarship

*Recognizes high achieving students with an exemplary academic record upon
entry to the university*

Summer 2011

Chancellor's Honors Program of UT

*Students are admitted upon application and entry to the University of Tennessee.
Selected students display high achieving test scores and exceptional involvement.
Accepted students typically encompass the top 10% of the entering freshman class
at UT.*

Fall 2011-present

Valedictorian of Lewis County High School

May 2011

Work Experience

Super D Drugstore/Jones Hometown Pharmacy

Cashier/Rx Tech

- Worked as a Pharmacy Technician by counting pills and filling prescription orders
- Managed pharmacy and merchandise registers
- Organized merchandise inventory and shelving

September 2009-July 2011
Summer/Breaks 2012

Lewis County Nursing and Rehabilitation Center

Certified Feeding Assistant

- Managed scheduled meal times
- Aided in feeding residents
- Helped with various needs of residents

March 2009-January 2010

Leadership

RockyTop Roundtable- Dean of Students Advisory Board

- Selected as part of a small group of students at UT to periodically meet with the Dean of Students to discuss issues among students and how to better the university

August 2015-May 2016

Mortar Board Honors Society at UT

- Considered one of the most prestigious senior honor societies at UT
- Members demonstrate a commitment to academic excellence, leadership, and community service.
- Participated in various community service events and fundraisers

May 2015-present

Alpha Gamma Rho Philanthropy Chair

- Organize the 2nd largest philanthropic fundraiser in the UT Greek community (AGR's Water Wars)
- Plan days of service for the fraternity at volunteer locations around Knoxville

January 2015-January 2016

Honors Council President

- Spearheaded new direction of the student government of the Honors and Scholar's Program
- Led and facilitated meetings between students and honors faculty
- Organized events
- Provided a student voice to honors curriculum changes proposed by the University Honors Committee
- Supervised the Honors Public Relations Committee, Community Service Committee, and the Events Committee

April 2014-April 2015

Welcome Leader for UT

- introduce incoming freshman to the university during the first week on campus

August 2013 and August 2014

FYS peer instructor

- co-facilitated a class to guide freshman on how to succeed at UT first semester

Fall 2013

Representative on CHP Honors Council

- organized, planned and attended events for honors students

Fall 2013-Spring 2014 (*Junior*)
Fall 2012-Spring 2013
(*Sophomore*)

Honors Ambassador

- hosted visiting high school students and facilitated UT CHP events

Spring 2013- present

Alpha Gamma Rho Fraternity

- attended weekly meetings, brotherhood events, and philanthropies

Spring 2013-present

Alpha Epsilon Delta Pre-Health Fraternity

- honors society for pre-health students; attended workshops and lectures to prepare for a medical career

Spring 2012- present

Research Experience

Higher Education Research Experiences (HERE) program at Oak Ridge National Lab (ORNL)-Undergraduates

Undergraduate Research Assistant in Dr. Hazen's Lab

- The HERE program at ORNL provides research opportunities for undergraduate students particularly those in a science, technology, engineering, and mathematics (STEM) education or career by utilizing the unique resources provided by ORNL.
- Isolation and Characterization of Anaerobic Microbial Communities from Hydraulic Fracturing Fluids

August 2015-present

Microbial Enumeration of Coliforms and *Escherichia coli* in Ground Beef Samples from Stores in Knoxville, TN

Honors Project in Dr. David Golden's Lab

Fall 2015

- Goal was to identify and estimate the amount of coliform and *E. coli* contamination in ground beef samples from various stores using different processing methods and storing procedures

Dr. Terry Hazen's bio-remediation research lab, University of Tennessee Knoxville

Undergraduate Research Assistant

May 2013-present

- Anaerobic chamber usage, Bligh and Dyer PLFA extraction, Miller method DNA extraction, PCR, gel electrophoresis, media preparation, nutrient analysis, Nanodrop, Qubit, proper glassware cleaning and autoclaving techniques
- DNA-PLFA Co-Extraction Method
- Isolating microbes from oil fracking samples

Fall 2013-Fall 2014

Fall 2014-present

Mayo Clinic Jacksonville

Summer Undergraduate Research Fellowship (SURF)

Summer Intern in Dr. Owen Ross's Lab

Summer 2015

- Research focused on researching the genetics of Parkinson's Disease
- Screened over 800 patients' DNA for *RAB39B* gene mutations

University of Tennessee Health Sciences Center- Memphis, TN

Summer Research Scholar in Kurosu Lab

Summer 2014

- establishment of new antibiotic compound Pleuromutilin molecule library
- development of assay method for Tuberculosis drug development and peptidoglycan synthesis enzyme inhibition

Economic Disparities in Health Care Qualitative Research with Dr. Nan Gaylord

- Conducted interviews with uninsured patients
- Volunteered at Vine Health Clinic, a medical facility for impoverished persons

January 2012-April 2012

Publications and Conference Presentations

Brewer, S. S., M. F. Campa, A. G. Amaral, S. M. Techtmann, J. L. Fortney, K. Fitzgerald and T. C. Hazen. 2015. "Isolation and Characterization of Anaerobic Microbial Communities from Hydraulic Fracturing Fluids." *Tennessee Experimental Learning Symposium (TELS)*

Campa, M. F., S. Techtmann, **S. Brewer**, A. Garcia de Matos Amarral, K. Manz, K. Carter, R. Lamandella and T. C. Hazen. 2015. "Flowback Water: A Look into the Subsurface Microbial Community and Intrinsic Bioremediation." *American Society for Microbiology Annual Meeting*

Brewer, S. S., M. F. Campa, S. M. Techtmann, J. L. Fortney and T. C. Hazen. 2015. "Isolation and Characterization of Anaerobic Microbial Communities from Hydraulic Fracturing Fluids." *University of Tennessee Exhibition of Undergraduate Research and Creative Achievement (EURECA)*

Campa, M. F., S. M. Techtmann, **S. Brewer**, A. Garcia de Matos Amaral, J. Wright, N. Ulrich, R. Lamandella and T. C. Hazen. 2015. "Hydraulic Fracturing Flowback Water: A Look into the Subsurface Microbial Community and Intrinsic Bioremediation." *2nd Annual Southeastern Biogeochemistry Symposium*

Brewer S., Techtmann S. M., Mahmoudi N., Niang D., Pfiffner S., Hazen, T. C. (2015). "Co-extraction of DNA and PLFA from Soil Samples." *Journal of Microbiological Methods*.

Brewer S., Techtmann S. M., Mahmoudi N., Niang D., Pfiffner S., Hazen, T. C. (February 2015). "Co-extraction of DNA and PLFA from Soil Samples using Bligh and Dyer PLFA Extraction and Modified Miller DNA Extraction." *Posters at the Tennessee Capitol*. <http://ugresearch.utk.edu/activities/posters-at-the-capitol/posters-at-the-capitol-2015/>

Volunteer Experience

Ronald McDonald House Knoxville

November 2015

- The Ronald McDonald House is a temporary home-away-from-home for families with seriously ill children receiving treatment at nearby hospitals.

Second Harvest Food Bank of East Tennessee

May 2015/October 2015

- Second Harvest Food Bank is the region's largest hunger-relief charity through food delivery systems, food pantries, soup kitchens and others.

Remote Area Medical Clinic Bristol, TN

May 2015

- Temporary medical clinic that provides free services to people in Appalachia

Kindred Nursing and Rehabilitation Facility

Spring 2015

- Assist with bingo for nursing home residents

Clinic Vols

Spring 2012-Fall 2013

- act as a fill in school nurse at elementary public schools