

Jourdan E. Lakes

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Education

PhD in Chemistry: University of Kentucky – Lexington, KY, United States	Ongoing Current GPA 3.6
B.S. in Marine Science, Minor in Chemistry: Coastal Carolina University - Conway, SC, United States Awarded a \$13,500 scholarship per year. Awarded admission into CCU's Honors College.	2016 GPA 3.7

Bachelor's Experience

“Development of a [2]-Catenane Synthetic Method and a Student Beliefs Survey for a Hybrid Organometallic Course.” This project is presented as both a Senior Thesis and as an oral presentation in April 2016 during the *Celebration of Inquiry* at Coastal Carolina University.

Coastal Carolina University, laboratory of Dr. Kevin McWilliams, 2014 – 2016

*“Impacts of Limb Autotomy on molting success in the flat-back mud crab, *Eurypanopeus depressus*, parasitized with the castrating barnacle, *Loxothylacus panopaei*.”*

Coastal Carolina University, laboratory of Dr. Erin Burge, 2015

Work Experience

Graduate Student/Researcher

August 2018 – Present

University of Kentucky – Lexington, KY

Designed and developed projects in regards to the gut microbiota's effect on psychiatric conditions relating to chronic nicotine abuse. This involves, at present, investigating various bacterial products under the effects of nicotine and observing those products subsequent effects on immune cell signaling in the context of the gut-brain axis.

Quality Control Analyst

September 2016 – June 2018

Catalent Pharma Solutions – Winchester, KY

Charged with the testing of various pharmaceuticals to determine whether or not they were made correctly, and are therefore safe to distribute to patients across the globe. Acting subject matter expert (SME) of one of the projects, which requires efficient scheduling and leadership of a team of analysts in order to meet deadlines without compromising product quality. The testing required includes solution preparation, which utilizes volumetrics, vacuum filtration, sonication, and pH correction. It also includes sample preparation/analysis, which utilizes (analytical) techniques such as centrifugation, dilution, and various types of filtration. This type of testing also includes the usage of analytical instruments such as: GC-FID, HPLC, UV-vis, ¹H NMR, and dissolution apparatus.

Business Manager's Assistant

May 2016 – August 2016

OC Medical Tustin – Tustin, CA

While working this summer job, I was tasked with the creation and upkeep of SOPs for all laboratory procedures done at the clinic, and all procedures for the inputting and updating of patient information. I was also in charge of various legal tasks for the protection of the acting physician, such as, the recording and filing of all legal paperwork, and the documentation of all medications brought in and prescribed out of the clinic.

Student Researcher

January 2015 – May 2016

Coastal Carolina University - Conway, SC

Multi-step synthesis of a macrocycle using a Cu(1)-complex and diyne linker. Executed experimental design techniques and separation techniques, tested samples for correct formation of the macrocycle and diyne linker via ¹H NMR, compiled and analyzed test information, and improved synthesis processes to increase efficiency and product yield.

Laboratory Assistant

August 2014 – May 2016

Coastal Carolina University - Conway, SC

In charge of maintenance, setup, cleanup, and breakdown of three laboratories. Utilized an extensive knowledge of laboratory equipment for the preparation of field trips/lab setups for seven types of lab classes. Abilities to fix broken equipment, e.g. YSI, pH meter (portable and bench-top), turbidity meter, DO meter, refractometer.

Veterinary Technician Assistant

August 2012 - March 2013

Sheabel Pet Care Center - Lexington, KY

Assisted in all veterinary needs for the technicians. Duties performed: prepare vaccines, gentle restraint of pet for administering vaccines, clean kennels, exercise/physical therapy, pre-op prep, and gathering of stain samples (cells, bacteria). Assist in identification of parasites or abnormal cells.

Fellowships/Grants

NIDA T32 DA016176 Pre-doctoral Fellowship

July 2018 – June 2021

Renewed for a second year of funding July 2019.

Renewed for a third year of funding July 2020.

Awards

Outstanding Performance on the Oral Qualifying Exam

December 2020 – University of Kentucky, Chemistry Department

Conferences/Talks

Society for Neuroscience (SfN) 2019

October 2019 – Chicago, IL

Poster – *“The effect of nicotine on gut-brain axis communication via immune cell signaling through pro-inflammatory cytokine production”*

Substance Use Research Day (SURD) 2019

March 2019 – University of Kentucky, Lexington, KY

Talk/Presentation – *“Intestinal permeability and gut-bacterial dysbiosis as a factor in chronic nicotine abuse”*

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Scholarly Service & Committee Memberships

TODD Symposium 2019

November 2019 – University of Kentucky, Lexington, KY

Planning Committee – My role on the planning committee was to assist the chair in her duties, help design and distribute advertising and the registration/submission website, and host one of the key note speakers during their time on campus.

Peer-Reviewed Publications

Lakes, J.E., Richards, C.I., Flythe, M.D. (2019). Inhibition of *Bacteroidetes* and *Firmicutes* by select phytochemicals. *Anaerobe*. 102145.

Neupane, K.R., McCorkle, R., Kopper, T.J., **Lakes, J.**, Aryal, S.P., Abdullah, M., Snell, A.A., Gensel, J.C., Kolesar, J., Richards, C.I. (2020). Macrophage engineered vesicles for therapeutic delivery and bidirectional reprogramming of immune cell polarization. *ACS Omega*. [Submitted].