School of Sciences
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30 December 2021

School of Biological, Environmental, and Earth Sciences
The University of Southern Mississippi
Hattiesburg, MS 39406

Dear Dr. Kuehn and Members of the Search Committee:

I am writing to apply for the position of Assistant Teaching Professor of Biological Sciences at the University of Southern Mississippi. I have a PhD in Biology and am currently an Assistant Professor in the Biology Program at the University of Louisiana Monroe, a position I have held since August 2017. I would be available to start on 1 August 2022 (or in Summer 2022 if needed).

I am applying for this position because I want to dedicate my full career to undergraduate teaching and advising. I have chosen to leave a tenure-track position that has been very good to me solely because of career goal fit: the research requirement of a tenure-track graduate faculty position does not allow me to focus on improving science education and undergraduate student success. My specific goal is to help improve retention of undergraduates in science- and health-related fields through teaching, academic advising, and, as time allows, pedagogy research on effective teaching. My broad mission is to enhance science literacy in the Deep South and support students from traditionally underrepresented backgrounds. I grew up in Alabama and have deep ties to the Southeast. I have been in Louisiana for 10 years at two great but very different institutions: the flagship university in the state capital city (LSU) and a regional university in a high-poverty area of the state (ULM). My experiences here have focused my vision for the type of academic community I want to be part of: a public university in the Deep South that is not the flagship, actively serves a diverse undergraduate student body, and has research activity in the sciences. The University of Southern Mississippi checks all of these specific boxes.

I believe my teaching interests and experience would make me a great fit for this position. At ULM, I teach 12 contact hours each semester, and since Fall 2017 I have taught a total of 12 different regular courses, from freshman to graduate level. I have developed all new materials for all courses, except the lab for Principles of Biology II. In designing my courses, I incorporate activities to make lectures engaging, such as using clicker-style polling, which also serves as an informal assessment tool, as well as videos, case studies, and small-group discussion. During my first semester, I was one of the first instructors at ULM to trial the free phone app Poll Everywhere as an alternative to proprietary clickers. Based on my positive feedback, other faculty have begun using the app in their courses, and the university has adopted a site-wide license, enabling additional features and LMS (Moodle) integration. From a Summer 2018 workshop on scientific teaching at LSU, I learned the importance of incorporating teaching methods that have been supported by empirical research as effective in enhancing student learning.

Two of the most relevant courses I have taught are Principles of Biology II and Plant & Animal Form & Function, a sophomore-level course with dissection labs that prepares students for advanced courses in comparative anatomy or plant physiology. I have also taught courses in ecology, evolution, systematics, computational biology, and science policy. I have a growing interest in health-related courses, which began when I was a master's student at The University of Alabama and taught A&P labs for four semesters. The teaching duties of this position are attractive to me because I would be teaching courses that either are designed to engage students' interest to enhance retention in the major (Principles of Biology) or are directly relevant to many students' career goals (A&P). Though I do not have formal experience teaching physiology, I feel that with preparation, I could effectively teach advanced

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physiology courses at the undergraduate level. I would also be happy to teach other courses where needed.

One quality of ULM that is shared by USM is an exceptionally diverse student population. At ULM, I have learned to better engage and support students from underrepresented groups through culturally responsive teaching, where I choose readings and design assignments that allow students to make personal connections with the material (e.g., watching a video of of Scott Edwards, a Black evolutionary biologist and ornithologist at Harvard) and better see the relevance of the content to their goals or to the world they live in (e.g., applying evolution concepts to the SARS-CoV-2 virus). One assignment I've modified that has been well received by students in Evolution has students choose a current evolutionary biologist from the DiversifyEEB database (which "highlight[s] ecologists and evolutionary biologists who are women and/or underrepresented minorities") and create an infographic about their chosen scientist: education background, current position and research. I have noticed that students tend to choose scientists who they can identify with – race, gender, disability, first-generation student. Student feedback suggests teaching improvement, but there is still much to learn, and I would look forward to continuing to develop my effectiveness as an educator at a university like USM that values diversity.

I also have experience in academic advising of biology majors at ULM, approximately 10-15 students each semester. We have a dedicated pre-health advisor, but the GPA requirement for pre-health advising means that I have continued advising many students who aspire to medical school, vet school, dental school, etc., but do not have a competitive GPA. This is in addition to students with other career goals. I have quickly learned a lot about advising-related issues that are outside of my own personal academic experience, such as the MCAT and medical school admissions, post-baccalaureate programs, and helping students interested in health fields hone their career vision (e.g., medical school vs. nursing vs. medical lab technician) – all especially critical for students with health-related interests but lacking a competitive GPA or a full understanding of the rigors of a medical school curriculum. Advising is gratifying, and I feel my own career path has made me a more effective advisor.

Finally, I am excited about this position because of location. I do science communication on my own time but mention it here to demonstrate how I value community involvement. My interest in science communication extends beyond biology and includes severe/tropical weather, flooding and the history of the Mississippi Delta region, and NASA. On invitation, I have attended three NASA Social events at the nearby Stennis Space Center – events developed to increase public awareness of research at NASA facilities by encouraging social media-based outreach. In addition, Hattiesburg's location in the Pine Belt makes it an excellent base for science communication about longleaf pine ecosystems (De Soto National Forest). Should time permit, I am also interested in potential involvement in educational programs through the Lake Thoreau Environmental Center at USM, which would build on my background in outreach with the LSU Museum of Natural Science and the ULM Museum of Natural History.

I would be very happy to discuss this position further. I have attached my CV, teaching philosophy, course and peer evaluations, teaching portfolio, and information for references, and I can provide transcripts, proof of COVID-19 vaccination and booster, and other information upon request.

Sincerely,

Catherine E. Newman