

Kendra Kaiser
Teaching Statement

*Every day, the sun; and after, sunset, Night and her stars.
Ever the wind blow; ever the grass grows.
Every day, men and women, conversing, beholding, and beholden.
The scholar is he of all men whom this spectacle most engages.
He must settle its value in his mind.
What is nature to him?
Ralph Waldo Emerson,
"The American Scholar"*

As an educator of environmental sciences, I hope to cultivate a classroom that peaks students' curiosity in how natural systems function. A well-organized course is an important first step to creating a positive learning environment where students can depend on me to provide clear learning objectives, a progression of material that will enable them to develop a holistic understanding of environmental science, its relations to other disciplines, and our everyday lives.

In order to do gain training in college teaching I have participated in the Duke Certificate in College Teaching program, and have learned about methods to improve learning and retention. One method to create an inclusive environment and provide students multiple avenues to succeed is to incorporate course content that suits a diversity of learning styles. Many students in the Landscape Hydrology course I was the TA for had trouble understanding the relationships between the energy and water balances. To help students critically evaluate and synthesize these concepts I created a new assignment where students download publicly available data, calculate evapotranspiration, and answer conceptual questions about the material. Two years later, myself and another student were awarded a Data Expeditions award from the Information Initiative at Duke to improve the assignment and introduce students to coding and large datasets. In this updated version of the assignment, we weighted the components in such a way that students could do well on the assignment with thorough answers to the conceptual questions, even if they struggled with the computational parts.

This experience highlighted the time commitment involved in creating an assignment of this depth, and ways to improve upon the assignment further. During office hours students worked on their assignments at a shared table, and I noticed they were able to work through many small coding issues by talking to their peers. In the future I will facilitate these collaborative interactions by introducing the coding program during the lecture, and have the students work together through the initial learning curve. I will also incorporate various in-class activities that will allow students to discuss course material and grapple with hard concepts with their peers while having me available to clarify points of contention. This would help students determine where their knowledge gaps are while gaining repertoire with their peers, whom they can collaboratively learn with.

An undergraduate research project, and the mentoring I received during those formative years, propelled me into my graduate research. Creating similar opportunities for undergraduates is very important to me. The skills gained from developing an idea, testing it, and evaluating it are invaluable and highly applicable in a variety of settings. In addition to undergraduate research

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projects, semester long projects within courses is a great way to introduce students to the same process. If I incorporate projects in my courses I will design them to have multiple submissions throughout the semester, allowing students to learn from their mistakes along the way and improve their work before being graded.

As a member of the Duke River Center, we gather for weekly “chalk talks”. One person presents an idea, or data analysis that they are working on for about half of the seminar time. This leaves the remaining time for everyone to ask questions and provide feedback, which we have all found to be quite valuable. I would like to teach a small seminar class with a similar design, where students can gain valuable presentation skills in a low stress environment, while receiving feedback and additional ideas from each other. Ideally this would be a mixture of upper level undergraduates and graduate students, this vertical integration gives graduate students valuable teaching experience, and can also introduce undergraduates to the type of research projects that graduate students do.

Effective teaching is paramount to a successful undergraduate education, but doing so requires reflection and self-evaluation of teaching practices. I look forward to working with a community of peers that support the development and continued assessment of my teaching. Engaging in the scholarship of teaching will allow me to learn from my peers, while simultaneously contributing to pedagogy in higher education. My interest in teaching also extends to encouraging graduate students to seek opportunities to improve their teaching effectiveness, such as guest lecturing and helping mentor undergraduates.