Teaching Statement

Teaching Philosophy My most effective teachers successfully instilled in me the passion they brought to their subject. As most learning will happen outside the classroom, I believe my primary goal as a teacher is to inspire my students for self-study. I will do this through thoughtful preparation of course content and its engaging delivery, as well as by striving to connect abstract concepts to tangible applications and demonstrations. I believe it is paramount to maintain a positive yet challenging classroom environment to foster student confidence and to encourage active participation. I look forward to developing an effective teaching style following these guidelines and to honing the craft over time.

Teaching Experience I have had several teaching experiences that have shown me the challenges and gratification of becoming a skilled instructor. As a graduate student at R1 University X, I was a Graduate Student Instructor (GSI) for the Course Name Here. I prepared and taught weekly 1-hour sections to review course material, and I graded quizzes and exams. In my section lectures, I routinely devoted time for class discussion about details in the material that I found fascinating. For example, on one occasion I led my class in reflection of the elegant filtration scheme of a renal nephron, how the nephron shape and osmotic gradients were tightly coordinated to properly retain certain molecules and discard waste. I could see the students genuinely engage in these conversations, and I found this experience highly rewarding. At the end of this semester, I was recognized as a R1 University X Outstanding GSI.

Before graduate school, I taught two sessions of an EXAM prep course for Melisandre, Inc. This Melisandre, Inc provided me training on how to become an engaging instructor. Importantly, it also taught me how to balance maintaining a positive classroom environment while maintaining academic rigor (not “sugarcoating” wrong answers). In addition, I gained experience teaching students from diverse backgrounds pursuing diverse goals.

As an undergraduate, I was a Teaching Assistant for two biomedical engineering lab classes, and I was a grader for the Course Name Here. As a grader, I learned how a well-written exam will test a student’s ability to synthesize the principles learned in the class, rather than their ability to recite information. I am committed to synthesizing these past experiences to become outstanding instructor.

Coursework My training as a biomedical engineer has provided me a strong foundation in biology, mathematics, and engineering, and I am thus prepared to teach all core undergraduate courses in these disciplines. I also envision teaching and developing electives based on my research background and on the needs and wants of the department and students. These could include courses on cell signaling, synthetic biology, systems biology, protein engineering, quantitative and computational methods in biology, and cellular engineering. As these are rapidly evolving topics, these courses will be combinations of lectures and reviews of classic and recent literature. In these courses, I will guide students through projects and assignments that expose them to important skills in conducting modern science. These include literacy in programming, multi - dimensional data analysis, statistical methods, conducting literature reviews, and scientific proposal writing.

Mentoring I have mentored 8 undergraduates and graduate students in the lab, and I have served as a Graduate Assistant mentor for 15 undergraduates over two years of the Margaery Tyrell summer research program at RUX. Through these experiences and through observing my own mentors, I have found that the most effective mentoring style is different for each individual. As in teaching a course, an effective mentor will find ways to motivate and encourage his mentees, but he must also ensure that mistakes are acknowledged and learned from. Thus, I will ensure regular communication and feedback with each mentee, and I will use this to continuously reflect and recalibrate mentorship strategies with each individual. I will also hold annual review meetings with each trainee to discuss overall scientific and personal progress, updated life and career goals, and the best road forward to achieve those goals.

Scientifically, I will ensure that my mentees have access to diverse conceptual and technical training in order to best prepare them for future careers. My lab will have a unifying theme of understanding the cell

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signaling logic controlling cell decisions, providing experimental and intellectual cohesion and allowing lab members to collaborate and learn from each other. Within this larger context, my students will develop aspects of their projects according to their interests and goals (e.g. basic or applied, theoretical or experimental, diverse model systems). This will foster my students’ internal drive and satisfaction, and it will allow me to provide a range of training opportunities to best fit each individual. To maintain my trainees’ awareness of science beyond their projects, I will 1) encourage collaborations with colleagues, 2) host “supergroup” lab meetings to share our mutual ideas with neighboring labs and to identify potential synergies, 3) encourage my students to routinely present and receive feedback on their work. I will also encourage career exploratory activities including summer internships to provide broad exposure to career paths of interest. I believe this overall strategy will best prepare my lab members to pursue their future careers.

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