Mentoring is a primary method for scientists to contribute to society and directly affect the lives of many others. In a mentoring relationship, someone with experience in a particular field (e.g., science) passes on information and skills that help the other person improve their own personal and professional growth. I believe that mentoring is crucial to the success of the next generation of scientists and allows an individual scientist’s effects to be maximized by enabling others to reach their full potential and mentor others.

To be effective, a mentor should possess several qualities. A mentor should strive to help the mentee not only reach their goals, but exceed them if possible. If a mentor is successful, then a mentee will be empowered to maximize their potential in their chosen endeavor. An effective mentor provides enough support to enable the mentee to boost the confidence of the mentee so that they believe in themselves and their abilities. However, a mentor should also challenge a mentee by asking questions to encourage the mentee to objectively think about their strengths and weaknesses and develop skills of self-reflection to enable them to succeed in life. Mentors should also be able to recognize their own shortcomings and use self-reflection to understand the causes for these difficulties and then be able to brainstorm ways to prevent others from foundering at these potential obstacles.

Throughout my adult life, mentors have profoundly influenced my experiences and development both professionally and personally. For example, I began graduate school one week after completing my undergraduate degree. I was young and had made minimal use of my undergraduate advisor during my bachelor’s program. Although I had participated in undergraduate research during my last year, I was still extremely inexperienced with understanding how to design and implement my own research project in a graduate program. When starting my masters program, I selected an advisor based on my selected study system and not on our compatibility as mentor-mentee. Later in my degree program, I realized that I needed additional mentoring to truly succeed in graduate research. When applying for a Ph.D. program, I sought an advisor who I believed would be an exceptional mentor first with similar interests to mine and then developed my plan of research under her expert guidance. This has resulted in a much more fulfilling and rewarding experience in graduate school for me. I hope to serve as such a mentor to students working in my lab after I obtain a full-time position at a post-secondary institution.

When I began teaching full-time at the high school level, I was assigned a mentor. A county-trained mentor was required to support each new teacher. However, although my official mentor was a nice person and technically qualified (from the county’s point-of-view) to act as my mentor, he was exceedingly busy and also did not have a science background (he taught social studies at my school). I did not find this selection of mentor to be helpful to me during my first year. Fortunately, I experienced the mentorship of my unofficial mentor, the science teacher in the adjoining classroom. Unlike my official mentor, this person was not paid to be my mentor, nor was she particularly expected to take extra time to support me. However, she graciously provided me with access to all of her files, allowed me to shadow her during labs before I performed the same labs, and helped me understand the intricacies of ordering supplies and maintaining a chemical stockroom. In return, I gratefully helped her with all clean-ups from labs and provided her with many typewritten sets of notes and assessments to replace her handwritten copies. If it had not been for the support of my unofficial mentor, I would not have experienced the successful first year that I had teaching.

After my first year as a teacher, I decided to complete the mentor training process when I became eligible so that I could pass on my ever-increasing knowledge and skills in science education. I was excited to finally have an opportunity to serve as an official mentor several years later and did my best to ensure that I was available to my mentee when needed but was not overbearing. I assisted her both inside and outside of the classroom by helping her complete required paperwork as well as observing her classes and discussing ideas to improve her classroom management and presentation of curriculum.
Upon returning to graduate school to begin my current degree program, I was determined to be a good mentor for other students. I have sought many opportunities to act as a mentor to undergraduates during the past few years. For example, I have mentored five undergraduate students who have assisted me with my research. I also taught one of these students when she was in high school; I found it very rewarding to continue to play a role in her academic and professional development. Although many of the tasks (e.g., insect rearing and maintenance) performed by my undergraduate assistants could be tedious, I also included them in my data collection efforts when possible and actively engaged them in discussion about the scientific process and how my research fits with the existing body of scientific knowledge. I also explained how I developed my research plans and the various steps I had taken academically and professionally in my career. I think these conversations helped them to understand the different paths that one could take during graduate school and post-undergraduate experiences.

In addition to undergraduates, I recently mentored a high school student performing research in the University of Florida’s Student Science Training Program. I helped this student design a research project during the summer and also provided the insects necessary for her study. During her project, we spoke frequently about any problems she was encountering and the best methods to use for her data analysis. Both this high school student and the undergraduates I have mentored have expressed a new interest in performing research as a result of my mentorship and their current research experiences.

I was also presented with a unique opportunity this year to co-teach a course incorporating undergraduate research in the classroom. With my advisor and two others from her lab, I worked with 25 undergraduates by assisting them in completing data collection for a large research project in our lab. As part of this course, I also led several discussions involving the nature of science and the methods used in science and scientific research. I also analyzed our focus group data for this course and the students overwhelming reported positive outcomes for their participation in the course and the ability to have researchers at various academic levels (i.e., professor, post-graduate, doctoral student, undergraduate student) as mentors. My current undergraduate mentee was a participant in this course.

I also serve as a mentor to students in my community. I have continued to assist classroom teachers by providing suggestions and insects for laboratory activities and other hands-on experiments. Since beginning my doctoral program, I have participated in numerous outreach events, including serving as a counselor for my department’s week-long entomology day camp for middle school students. I also volunteer as a science fair judge for several schools. During these events, I serve as a mentor when I discuss students’ projects with them and help them think of additional aspects of their projects as well as discuss their future goals. I also mentor Cub Scouts while I serve as a leader in my local unit. Through this position, I expose elementary-aged boys to science and nature which allows me to use my teaching skills as well as cultivate their interest and excitement in being outdoors and learning about the natural world.

After graduation, I would like to obtain a position as a professor at an institution where I can use both my teaching and research skills to mentor others. Some of the most rewarding moments I have experienced as an adult have come when several of my former high school students visited me after starting college and told me that they chose to pursue a science major due to their time in my class. I look forward to influencing the next generation of researchers and students and helping them reach their academic goals and become productive members of society.