My goal as a mentor is to prepare students for a meaningful and enjoyable future in science. In every aspect of the operations of my research program, I seek to reinforce the ideas that science is a vocation worth pursuing, that we as scientists can make a positive difference in the world, and that our work can help our society be better stewards of the natural world.

Most directly, I strive to help students develop the desire and the means to pose questions which will lead to greater understanding of forest plant communities. Our work is based on the premise that ecology can best be studied in the field, that ecology should be exciting, and that every student has something to teach as well as to learn. Through our work on specific scientific questions together, my students come to be able to enter an ecosystem and analyze its present state, make inferences about its past, and speculate about its future. This ability to understand a forest serves as the basis for students’ careers, whether they be in science, teaching, land management, or policy. I provide students with foundations in ecological theory that they can use anywhere, and in any professional context.

Each of my graduate student colleagues has their own goals and brings unique skills and perspectives to our team. Each of them has thus required a different mentoring approach, but I do use some general techniques. To help illustrate the interconnectedness of ecological systems and to build the team, I always work with my students in the field. Everyone takes part in every aspect of our work. Shared field experiences help build an environment for collaborative learning and provide concrete examples we can reference together. Working and living together in the field also builds trust and understanding.

I try to understand each student’s motivation for undertaking the graduate school journey. I don’t presuppose or judge any particular outcome, but rather seek to help my graduate students develop and walk down the road that becomes revealed to them. Helping each student on their own path has in turn taught me more about science and about life. Mostly I don’t pressure students with arbitrary schedules, but rather encourage them to work on their projects diligently. In addition to their own work (which is appropriate in scope to early-career researchers), I involve my students in my overarching research questions about global forests. This gives students an opportunity to meet and collaborate with a global cadre of researchers and help address very advanced questions in forest ecology. Whatever future path students may wish to take, I emphasize hard work, excellence, and service to science and to society.

One other aspect of my mentoring approach is to keep it real. Ecological research takes place in a world with budgets, procedures, expectations, and deliverables. I use my two decades of experience in engineering and finance on three continents to help students see how they and their work fits in to the larger picture. A refrain that all of my students know is that we operate in a “production environment” and that we measure progress and produce products. I teach my students about the “business of science,” which in some respects is not all that different from the practical aspects of other human endeavors. It is a given that I help students develop their skills in information gathering, in synthesis, in quantitative analysis, and in communication. I also help them develop practical skills for getting things done in the real world: team building, fundraising, project management, budgeting, public relations, managing data, working in the cloud, fixing equipment, and the importance of backing up your work.

And beyond mentoring in ecology, I want to show students how every day can be an opportunity to learn something new. Whether we are in the field, the classroom, or the library, we can always improve our understanding of the world around us, and we can always recognize that a job well done, however difficult, can be its own reward.

Details: http://jamesalutz.com