Careers in Weed Science

Jacob Barney: Associate Professor of Invasive Plant Ecology at Virginia Tech

Primary duties

My position is roughly broken down to 75% research and 25% teaching, though these do not actually reflect effort across these domains. I teach two courses every fall (Biological Invasion & Weeds That Shape Our World) and usually a graduate seminar every spring on invasive species science and policy. I also mentor graduate students, undergraduate researchers, and postdocs. The remainder of my time is spent on the research side, which includes writing proposals, executing experiments, analyzing data, writing papers, making presentations, and many other forms of outreach. My graduate students conduct the vast majority of the actual research with my oversight, while I am always working to identify additional funding to support more projects mostly from federal sources (eg, USDA, NSF). I also regularly interact with stakeholders across the state and nation on weedy and invasive species issues.

What do you love about your job?

I like most aspects of my job honestly, but there are probably two that stand out: working with students and the freedom to pursue my (ever changing) interests. I really love being able to work with students, both in the classroom and doing research. Students are always bringing fresh ideas and excitement and helping them work towards their professional goals is really rewarding. My students have gone on to work in a wide variety of positions following grad school, which has been fun to watch them progress through their burgeoning careers. I also love the freedom of pursuing any interesting idea, so long as you can get it funded of course! I have worked with a broad range of invasive plants across diverse ecosystems. We have worked in agroecosystems, forests, coal mines, roadsides, etc. Most important and exciting is developing new collaborations with smart folks to work on fun projects. The collaborative landscape at Virginia Tech, and likely many other places, is rich and has resulted in working on a wide diversity of projects, from epigenetics, species distribution models, chemodiversity profiles of root exudates, to rapid evolution of invasive plants.

Education

B.S. 2000 University of Kentucky

M.S.2003 Cornell University

Ph.D. 2007 Cornell University

Involvement in Professional Societies

Northeastern Weed Science Society

Current President

Weed Science Society of America

Ecological Society of America

Find Jacob on Twitter @jnbarney or email him at jnbarney@vt.edu

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Imparting wisdom

I would tell my grad student self to spend more time learning to code and keeping up with more advanced statistics. In my field of ecology, the complexity of analyses have seemingly advanced at an exponential scale. Additionally, R is now the statistical standard bearer and I never taught myself to code. While you are busy in grad school, it is likely your best opportunity to develop new skills that will pay dividends your whole career.

Be patient. This is often WAY more difficult to put into practice, and certainly was for me. The job market ebbs and flows, and there is often not the position you want available when you are ready. My students often find themselves applying to loads of jobs, many of which unfortunately never even provide any correspondence, which can be frustrating especially after working for years on your degree. Some of us know exactly what we want to do, that was certainly the case for me, but I always encourage students to target that job, but also have an open mind. Sometimes an unexpected job can lead to a rewarding career that maybe wasn't on your radar. Start looking for positions early, apply to positions that interest you, and most importantly be patient. Don't give up. That job is out there, it just may take some time.

Lastly, I would say to just enjoy your time as a grad student! I had some of the best times of my life as a grad student, and relish what I learned and the friendships I made. Take advantage of this unique opportunity when your professional responsibilities are relatively low to learn new things, expand your exposure to new topics and techniques, go to as many meetings as you can, and have fun!