Doctoral Dissertation Advisor/Mentoring Award Personal Statement
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Introduction: It is an honor to be nominated for a Doctoral Dissertation Advisor/Mentoring Award. Accolades of this type, or any type, have never motivated me. If anything, they make me anxious. What compels me to accept this nomination are the 24 empty bottles of champagne sitting on top of the bookcases in my office. Each bottle represents the culmination of a doctoral journey, and while most look similar from a distance, they could not be more unique. Close inspection shows that each was signed by a newly minted Doctor of Philosophy, and includes the hand-written date of the defense, the prefix "Dr." in front of the candidate's name for the first time, and a quote or statement that the candidate is moved to share to capture this chapter of their lives. I call on these bottles often, but especially in two scenarios. One, when meeting with prospective or current Ph.D. candidates to quickly, and visually, capture a collection (beginning in 2006) of transformative human experiences. The second scenario? When I need inspiration. Swiveling my chair and taking stock reminds me why I do what I do.

Human aspects and lab culture first: Especially junior Ph.D. students ask me, in our first few interactions, about expectations for research publications, hours spent per week in the laboratory, and other quantifiable metrics that are often correlated with Ph.D. success. My response is to first reflect on the diversity of life ups and downs, outside of UF, experienced by any one of the doctoral students I have worked with during their Ph.D. dissertation. As the discussion continues, it becomes clear that while "papers and presentations" are important, so are emotional growth, self-discovery, developing confidence, perseverance, and becoming an independent thinker and problem solver. It is also true that if a student focuses on these aspects, scientific growth and associated "products" usually follow!

Success, broadly defined, is leveraged by an environment well-matched to an individual doctoral student. Over my two decades at UF, a human-first approach has produced a research group culture of inclusivity, diversity, integrity, professionalism, and mutual respect that is now perpetuated by the entire team (that is currently 7 graduate and 4 undergraduate researchers). Of our Ph.D. graduates since 2006, or the 8 in the last five years, 50% have been female. The most recent 8 originate from 6 different countries (Brazil, China, Colombia, Iran, Taiwan, and the US). Time and time again I hear from students that the group atmosphere is as central to their success as the specific science that engages them. Many of our research group meetings include discussions of human aspects, my embarrassing personal anecdotes as well, with plenty of science too.

One of the toughest challenges I face in my role is recognizing, learning about, and then responding to a rapidly evolving graduate student population. While many of the tenets of our research group remain constant from year to year, students are facing unprecedented challenges and environmental/political/societal pressures while pursuing their degrees. The pandemic exacerbated them. An international student in our laboratory, unable to return home for reasons out of our control, carried on her research even as she lost two family members to COVID-19 overseas in fall 2020. While this is just one of many examples, how can I demand this student satisfy conventional Ph.D. "product" metrics while grieving from a distance? From a mentor perspective, this scenario cannot be addressed by any special training I have received or wisdom that I have. My approach is to be observant, a patient listener, and an empathetic and flexible advisor. I also am continuing to learn whether it is my career experience or my personal experiences that are most appropriate to employ to guide a student in crisis.

Science and "products" next: Most doctoral students appreciate how hard it is to obtain a Ph.D. Experiments, while well-conceived, usually fail before they succeed, and initial hypotheses are generally refuted. The scientific method is a masterful ego destroyer. Graduate students in our lab are free to explore, create, and grow through independent, but not isolated, research projects. The projects fit within a scientific philosophy or vision that unifies our collective research efforts, and in most cases, two or more graduate students are working on projects similar enough that they can share specific strategies, tactics, and even crazy ideas. If I were smart enough to be able to propose day-to-day experiments for doctoral students, the science (for better or worse) might reach some natural conclusion more rapidly. Fortunately for the students, and science, they lead the charge. The benefits to this approach include a) early "ownership" of a project, b) rapid development of student independence and creativity, and c) opportunities for serendipitous discoveries to be made and embraced. Many of our most interesting findings have come this way.

Doctoral students in our lab are not working in a vacuum. My discussions with students come in various settings including weekly research group meetings, collaborative meetings, individual meetings, random interactions, research reports, social events, and electronic communication (including the group's Slack page). Vital to laboratory culture, and graduate student development as leaders, teachers, and mentors, are the undergraduate (27 to date) and international student visiting (14 to date) researchers that join them in the laboratory. Our current team of 4 undergraduates is working alongside 3 different doctoral students, in what are typically multi-year research experiences. Our research collaborations with laboratories in UF's Departments of Pharmacology & Therapeutics, Materials Science & Engineering, and Biomedical Engineering require frequent meetings and provide opportunities for graduate students to participate in multi-disciplinary teams and learn new scientific languages.

For doctoral students, research-related "products" from our lab include peer-reviewed publications, conference presentations, patents, and awards. For the last 20+ years I have staunchly encouraged, promoted, and supported graduate students to secure the "products" that are critical discriminators at the time of application for post-UF employment. The mission includes joining the group's annual pilgrimage to the Florida Annual Meeting and Exposition (FAME), where graduate and undergraduates advertise their work through posters and presentations. In the last five years, graduate students from our lab have collectively given 75 presentations at conferences and published 21 peer-reviewed works.

Independent thinkers and doers beyond UF: The foundational mentorship and training experiences of doctoral students in our laboratory equips them for diverse, interesting, and impactful careers beyond UF. Their successes confirm that the development of graduate students as good communicators, independent and creative thinkers, and team players is perhaps most important to future employers. Of the 24 Ph.D. students, 11 have pursued postdoctoral appointments (e.g., Harvard Medical School, Michigan, Scripps, Stanford, UCSB, etc.). Among those not currently engaged in postdoctoral studies, 7 have careers in higher education (2 lecturers and 5 tenure-track faculty), 12 have industrial positions (e.g., Adesis, Alcon, Ascendis, Ashland, BASF, Boeing, Cambridge Isotope Laboratories, Dow, Intel, Thermo Fisher, etc.), and one works for the government (Director of Operations at the US Air Force Drug Testing Laboratory).

Final thoughts: Advising and mentoring doctoral students have been the most rewarding aspects of my profession. The thought that I have contributed usefully to not only the careers, but the lives, of humans while doing what I love is the source of endless humility, satisfaction, and pride. While I am never fishing for accolades, I must confess that just a few here and there are sufficient to sustain me for years. This nomination already goes a long way.