

DOMAIN 2: Mentoring and Advising	
Name: Patrick Chappell	Affiliation: Oregon State University College of Veterinary Medicine, Dept. of Biomedical Sciences
1. Name the mentoring and/or advising role(s) or activity(ies) you've chosen to highlight:	
I mentor graduate and undergraduate students in my lab, guiding them through independent study projects toward a programmatic thesis defense. I will highlight portions of this mentoring role.	
2. Your role(s): Describe your role(s) and specifically what you contribute.	
As the Principal Investigator of a (occasionally) federally-funded laboratory, it is incumbent upon me to contribute to the training of the next generation of biomedical researchers and teachers.	
3. Mentees and amount of contact: Describe types, levels and numbers of mentees; amount of contact you have with them.	
Several programs on campus require a research component, and I have mentored ~50 students in various capacities, including 12 independent study students, 7 Honors College students, 7 Bioresource Research students, 15 work-study students, and 4 graduate students, 3 of whom have received their advanced degrees. I firmly believe that each laboratory functions best as a team of equally invested participants, so all trainees regardless of experience level or tenure in the lab attend weekly meetings, at which they are required to give an oral presentation on a topical research article of their choice. Depending on upcoming deadlines for abstract submission, etc., and also dependent on class schedule, I interact with each trainee from 4-8 hours/week.	
4. Goals and learning objectives: List goals and <u>learning objectives</u> of program and/or individual mentees. If these are extensive, provide just a few illustrative examples.	
<p>Since students come to my lab via several programs, there are no uniform learning objectives imposed. My learning objectives for each student include:</p> <ol style="list-style-type: none"> 1. The ability to read, comprehend, and analyze scientific papers; 2. The ability to perform "boilerplate" molecular biological techniques, such as real-time qPCR, western blotting, DNA/RNA quantification, electrophoresis, etc.; 3. The ability to perform appropriate statistical analyses on datasets generated experimentally. <p>Additionally, a major goal is to encourage students to become independent thinkers- to ask questions about what they already know and how they came to know it, and to be imaginative in constructing hypotheses.</p> <p>Lastly, I strive to make my mentees comfortable with failure, which comprises a large majority of effort in molecular biology- I allow students to try and to fail, since failure and the subsequent analysis of underlying processes are crucial to actual learning.</p>	
5. Methods: Describe the methods used for instruction, how these align with objectives, and rationale for choices.	
Students arriving in the lab possess widely variable levels of experience, understanding, and motivation, so an individualized approach is used, tailored according to the student's needs and capacities. Mentoring in laboratory techniques largely relies on demonstration and practice, combined with an ongoing narrative of why each step of a procedure is done and how the result may be interpreted. Further, students' data from projects are discussed at lab meetings with other students, so that everyone can contribute suggestions and learn from the iterative process. Since one demonstrated technique for learning is teaching, I allow my senior students to instruct newer arrivals- this aids not only in the solidification of understanding of the senior students, but the novices are often more comfortable around their peers, as interactions with faculty can often be intimidating or overwhelming for students.	
6. Rationale: Describe why and how you chose the mentoring & advising method(s) you use.	
<p><u>I have found that abstract didactic discussion of biology alone is insufficient; similarly labs in classes often fail to communicate to students practical application. The combination of experiential learning with explanation and discussion has proven most successful.</u></p>	

Commented [SAH1]: This section allows applicants the opportunity to demonstrate a scholarly approach – in this case to their mentoring methods. Beyond personal experience, the applicant might briefly discuss any formal or informal mentoring training, books or publications that influenced him/her, lessons learned from other scholars/scientists, etc.

7. Results and impact: Describe evidence of mentee ratings for mentoring, learning outcomes, career trajectories, impact on educational programs, and/or mentoring awards.

For mentoring, learning outcome success is measured predominantly by successful completion of a program, including a thesis/dissertation defense, and subsequent career trajectories. Thus far, these include:

- Two MS students: currently in PhD or MD/PhD programs
- Two undergraduates currently in senior postdoctoral positions
- Four undergraduates have completed medical school and are in residency,
- Six undergraduates currently in advanced training (MD, PhD, or DVM).

I have received the "Top Prof" recognition twice from the Mortar Board, for excellence in mentoring and teaching.

Commented [SAH2]: Good. This provides a nice summary showing that mentorees have been successful in that they have a continued positive trajectory. The names of mentorees and current or subsequent positions should be included in the CV section of the promotion packet.

8. Reflective critique: Describe your reflections, what went well and plans for improvement.

While I find this individualized mentoring method to be successful, it requires a large time commitment on everyone's part. This becomes difficult during quarters when I have a heavy teaching load, and students class commitments often conflict with time in the laboratory. Additionally, it is often difficult for students to begin work on a project examining a very particular component of reproductive neuroendocrinology when their understanding of material at a conceptual level is thin. This can sometimes lead to students becoming overwhelmed by the amount of information required to know to fully grasp their project. I have found that peer mentoring (see above) helps in this regard; as well as disseminating information on consensus models of cell biology in smaller chunks over a broader span of time. While students may not grasp the entirety of our laboratory's work upon arrival, through repeated trials and accompanying discussions, many of the students complete work in my laboratory with a greater understanding of our specific projects and physiology and molecular biology in general, irrespective of the success of their individual work.

Commented [SAH3]: Good. Demonstrates that the applicant is reflective and has been experimenting with practices that lead to improvement.

9. Dissemination: If applicable, describe how your efforts have been recognized by others externally through peer review, dissemination, use by others, or mentoring awards nationally.

N/A