

STATEMENT OF TEACHING PHILOSOPHY

Bekka S. Brodie, PhD

Enthusiasm is contagious! I believe that this statement holds true for my style of teaching. The natural world can captivate us and evoke our innately human inquisitiveness. I seek to facilitate students' advancement of knowledge of the natural world by encouraging reasoned thought, and by including active learning techniques and hands on experience in the field, laboratory, and classroom.

To further students' ability to find answers for questions, I encourage them to ask questions. As the Instructor and Lab Coordinator for Introductory Biology Labs (BIOS 1705 and 1715) at Ohio University and Ohio Dominican University (BIOL 203), and Lead Teaching Assistant for Insect Biology (BISC 317) at Simon Fraser University, I give students the opportunity to think about and ask "out of the box" questions, ultimately resulting in class presentations or social media projects. Throughout the semester, I guide students through individual research projects by encouraging them to read the literature, and enabling them to formulate an original hypothesis, and provide methods to isolate and test their hypothesis. To ensure their success, I check progress and make myself available for questions and discussions related to their topic. In the classroom and laboratory, I challenge the students to be active participants and to take initiative. As a mentor, I take this a step further and empower students by giving them ownership of research projects, encouraging reasoned research design and techniques, and written and oral work, especially in developing logical arguments. In these circumstances, I make suggestions because students can only learn and develop ideas if they are shown how and why modifications need to be made to their natural style to make it clear and compelling.

Students themselves are diverse and, as such, learn through a diversity of methods. After laying a foundation with lecture and literature review, I incorporate visual and audio examples into the class. For example, when teaching about insect flight, I prepared a visual diagram that explains the theories of wing evolution (used in blogs, university level entomology classes at Simon Fraser University and Ohio University) and, filmed high-speed videos, showing insects in flight. Showcasing real examples of the topics discussed in class (insect external specializations, mating rituals, communication pathways, etc.), leaves students with a lasting impression and long-term retention of information. At Ohio University, I wrote a conservation biology lab where, after reading multiple case studies on the topic, students are asked to identify a conservation issue they feel strongly about (ranging from an issue in their community to a global topic). The students then produce a written document identifying: 1) the environmental, social, economic and political issues around the topic, 2) what a successful outcome would look like, and 3) suggested practical solutions that consider the social and economic implications. This is a writing assignment that encourages out of the box thinking and science communication, but students feel invested in their topic and often take it further by posting their topic on the internet (blog) or mailing it to a government official. At Ohio University, I have also amplified the number of dissection labs (nervous system, circulation system, and sensory system) allowing the students to "get their hands dirty" and actively experience learning.

My teaching and mentoring experiences are rooted in the United States, Canada, Fiji Islands, and Romania. In North America, I have been working as the Instructor and Lab coordinator for Introduction Biology Labs (Ohio University; 1 credit; managing approx. 700 students, 24 teaching assistants and 8 lecturers) and Instructor for Introduction Biology (Ohio Dominican University; 4 credits; 25 students), Lead Graduate Teaching Assistant for Insect Biology (Simon Fraser University, 4 credits, 50+ students) for 4 consecutive years and Research mentor for undergraduate research students in a variety of contexts (Simon Fraser University and Ohio University, 1-18 credits, 14 students- all coauthored on peer-reviewed articles), Graduate Teaching Assistant for

Entomology (SUNY Environmental Science and Forestry, 4 credits, 50+ students), and Undergraduate Teaching Assistant for Entomology (SUNY Oneonta, 3 credits, 50+ students). As an educator, I successfully use a combination hands on laboratory assignments, group discussions in class or on social media to elicit student participation, field trips (terrestrial and aquatic insects and collecting techniques), a poster project, and insect collection (30 insects made up of 15+ Orders). In the Fiji Islands (United States Peace Corps) and Romania (Association for Biodiversity Conservation), I served as an environmental educator and mentor to over 100 peers and students. Over the last 10 years I have instructed audiences of varying ages, educational backgrounds and cultures. Through these experiences, I have come to realize that my teaching is fluid; my teaching style is constantly evolving based on the learner's experience, cultural and social norms, and by adapting and incorporating up to date science and active learning technologies.

My commitment to student advancement was rewarded by the Departmental Teaching Award at Simon Fraser University (received in September 2014), nominated by my students for "knowledgeable, competent, and dedicated teaching". The most rewarding part of teaching entomology is watching my students' eyes open wide as they learn about and grow to enjoy insects. In the beginning, many of my students' wear gloves to dissect a locust or hesitate to go after a dragonfly with their insect net, but in no time, all bets are off! ...Gloves are thrown aside, innocent bystanders are trampled to catch "another Order for my collection", and excited outbursts abound, such as (one of my favorites), "WAIT... aphids can photosynthesize!? Tell me more!".

For me, teaching is not just teaching, everyone is a student and everyone is a teacher. I believe that if I expect my students to learn and improve, there is a reciprocal expectation that I continually reflect on, assess, and strive to improve my teaching strategy and performance. At Ohio University, I have recently incorporated an evaluation for my graduate student teaching assistants to improve my own teaching ability as well as the quality of labs taught and curriculum (i.e. definitive learning objectives, clear procedures, successful experiments, and up-to-date science). I have also collaborated with student mentors at the Biology Advising Resource Room (BARR) and incorporated a form to collect information and assess students' understanding of topics that are most frequently asked about. Armed with this information I can edit material or spend more time in lab on a difficult biology topic. Although there is no "silver bullet", I believe that if we work together (students, teaching assistants, and lecturers) we can identify the most effective combination of teaching modalities and student academic advancement can continually be improved.

Selected Communication and Teaching Honors:

- 2016 CAGS (Canadian Association for Graduate Studies) Distinguished Dissertation Award, Nomination
- 2016 Entomological Society of America Pacific Branch John Henry Comstock Award, Nomination
- 2015 3 Quarks Daily Annual Science writing prize, 3rd Place Semi-finalist for
- 2014 Department of Biology Graduate Teaching Award at Simon Fraser University
- 2014 3 Minute Thesis, 1st Place and People's choice awards (Science Faculty heat) and 3rd Place (University wide heat) at Simon Fraser University
- 2012 & 2013 Nominated for Faculty of Sciences Excellence in Teaching Award at Simon Fraser University (by student nomination and review), Insect Ecology (BISC 317)

Teaching Evaluation Summaries for Insect Biology (SFU) and Introductory Biology (OU):

(Detailed summaries upon request)

- 2017 – 4.34/5
- 2014 – 3.67/4
- 2013 – 3.85/4
- 2012 – 3.93/4
- 2011 – 3.77/4

Excerpts from Undergraduate Student Comments (Ohio University):

“Dr. Brodie is very intelligent and provides detailed explanations about questions with follow up examples.”

“Explaining things in different ways to make sure you understand.”

“She provides good explanations and help during lab time.”

“The course used many helpful figures and all of the information was in the lab manual.”

“The labs were well designed to teach the students what they needed to know in order to pass the class and gain knowledge.”

“This course was very hands-on and interactive.”

Excerpts from Graduate Student Teaching Assistant Comments (Ohio University):

“I feel great after attending last Friday's meeting - It's really great to see the handouts and PowerPoint being organized in the best way than before (entire 3 years previously!).”

“Thank you very much for all the sweet words you offered to me today. It was really helpful and I feel like I have already done much better than last year! It's weird that I am not nervous for this semester at all!

“Thank you for the motivation before my class. It helped me a lot.”

“I cannot think of any more help! Your PowerPoint and the notes under each slide are very helpful. THANKS for making our life easier!”

“Dr. Brodie arrived to every lab meeting 15 minutes early, every time, even though she is in charge of two courses!”

Dr. Brodie explained things well. I always felt prepared to teach.”

“Dr. Brodie creates a platform for team work during TA meetings.”

“Dr. Brodie gave candid feedback which helped me to improve as a TA.”

Excerpts from student comments (Simon Fraser University):

“Bekka you were a great teacher in Insect Biology you made it really easy to learn in lab and went above and beyond to help us grasp the subject material. I also appreciate all the extra time you put in to help us out with our poster presentations.”

“Bekka was an amazing teacher for Insect Biology! Bekka always took time out of her schedule to help students and ensured that the lab material was well understood. In addition, Bekka was very passionate about what she taught and created a positive learning environment in lab. Thank you Bekka for making Insect Biology such an incredible course!”

“Thank you Bekka for all you did for us in Insect Biology. You would always answer all questions and would ensure that the students understood thoroughly, (often helping us through tedious, long and complex keying of obscure insect species), your attitude in this regard was highly conducive to not only learning the prescribed material but a desire to understand the material more deeply than required. Seeing you love what you do, in addition to the advice you gave me, steered me in the right direction for what I want to do as a career which will undoubtedly have positive ramifications throughout my life. Above all, you were enthusiastic and charismatic which made learning infinitely more enjoyable.”

“Bekka was one of the best TAs I have had at university. I found her lab to be something to look forward to every week. She would take the time to answer your questions and make sure you understood the concepts. Not only is she very knowledgeable and approachable, which makes it a lot easier for the students to learn, but she is passionate about what she does. I would definitely recommend Bekka to anyone that has the opportunity to learn from her. Thanks Bekka!”

“The purpose of a TA or supervisor, above educational guidance, is to inspire their students with interest and excitement about their education. The reason I enjoyed working with Bekka so much is because of her ability to excel in this regard. It was always obvious that Bekka was passionate about her area of expertise, which motivated many students—myself included—to perform their best.”

As a supervisor for my undergraduate research, Bekka was continually improving my ability to perform science. She taught me how to develop a hypothesis and target it effectively with a thorough and unbiased experimental design. While allowing me to be an independent scientist when I felt comfortable doing so, I was not short of her guidance and support when I needed it. Honest with her feedback, she provided much in the way of constructive criticisms, which have helped move my career forward.”

Bekka was very approachable and helpful as a TA, and she knew the course material like the back of her hand. Able to gauge an appropriate level of guidance, she optimized the amount of learning while minimizing the amount of frustration that students experienced. Thanks, Bekka, for starting off my scientific career with such a bang!”