

## Teaching Philosophy and Statement

Upon starting to teach and mentor, the perspective guiding my teaching was to teach the way that I would like to be taught. However, as I have garnered more experience my time with students has led me to recognise that while this is a meaningful philosophical position, most of my students will not replicate my path into academia, and so this stance lacks the appropriate nuance and flexibility that their varied backgrounds and interests require. To date, my classroom teaching has been mostly focused on biological frameworks for neuroscience and psychophysiology; deep and complex domains relevant to modern psychology that present students with numerous paths to follow into the next phase of their lives. It is within this space that I recognized that **my educational approach and teaching philosophy ultimately needs to reflect the needs of my students and their aspirations**, rather than the approach envisaged by someone who entered academia i.e., myself. To this end, I incorporate active goals and prior knowledge assessments in early lessons, which allow me to tailor later lessons to my cohort and give students a greater chance to demonstrate their understanding. I have found that when implemented alongside other active learning pedagogies (being mindful of access), I am more able to meet students where they are (recognizing that student grades often do not completely reflect the individual's broader context) and enable them to better engage with content and learn on their terms.

*In the Classroom:* Towards the end of my graduate program, I held an Associate Lecturers position at the University of Technology Sydney, teaching Neuroscience and Medical & Applied Physiology (MAP). In this role, I experienced the length and breadth of higher education, delivering both small and large face to face classes, as well as dealing with administrative duties and requirements. Neuroscience focused on developing students' understanding of the physiological basis of the nervous system by integrating fundamental cellular/molecular concepts of neurochemistry and synaptic transmission with broader systems-level content covering the senses, motor function, memory systems, theories of mental illness. MAP introduced psychophysiology to students and encouraged them to evaluate the connections between human physiology and health outcomes. Both were final year undergraduate courses of approximately 300-350 students from varying programs including biology, engineering, and psychology, and were taught in a lecture and laboratory class format. The Neuroscience laboratory classes combined neuroanatomy sections with theoretical sections to supplement the weekly lectures. While the MAP lab classes were mostly dedicated to a student-led psychophysiology experiment, the purpose of which was to provide instruction in psychophysiological techniques, as well as relevant research methods and designs.

Beyond teaching these classes, and most importantly to my teaching philosophy, I was involved in the Learning.Futures initiative, a university wide teaching update which focused on the practical implementation of flipped learning pedagogies, practice-oriented teaching, and authentic assessments. As part of this initiative, I redesigned the Neuroscience and Medical & Applied Physiology courses by combining traditional teaching modalities with technologically driven and collaborative alternatives, with the aim to deliver a more applicable and engaging learning experience. Across both subjects, I added online pre-semester content (i.e., short informational videos and associated non-assessed quizzes) that covered early topics with which students could prime themselves for the coming semester, and teaching staff could engage to evaluate pre-existing student knowledge. Similarly, I built short online non-assessed pre-lab quizzes that functioned as a content prelude for that week's laboratory and anatomy class. Finally, I switched the format of final exams from one that largely tested the memorization ability of students to a concept driven approach. This updated format required students to integrate their knowledge across multiple domains to answer complex multiple-choice questions and formulate long-form explanations of the neuroscience/physiology underlying real-world processes (e.g., getting hungry and deciding what to eat for lunch), and neurological disorders and their diagnoses (e.g., Parkinson's Disease).

Inside Neuroscience, I expanded the neuroanatomy section by designing two new classes and including anatomy identification flag exams in the course assessment structure. My aim in doing this was to give students more small class and hands on experience that would supplement their lectures. I also converted some early laboratory classes into discussion sections that allowed students to have a facilitated but largely self-directed conversation regarding their topic (e.g., neurodegeneration, and the connectome) for an online digital media project that I introduced. For MAP, I replaced the mid-term exam with a semester long case-study, in which students had to evaluate a patient and provide their rationale for diagnosis, as well as describe additional physiological information that would be useful. This assessment was built to allow students to incrementally complete the work as the semester progressed by actively integrating the weekly content. Overall, my involvement in this initiative not only gave me the opportunity to learn how to design and implement course content that would deliver engaging and applicable learning

experiences, but also to personally engage in reflective teaching. As the initiative carried over multiple years, I was able to use my own self-evaluation and feedback that I received from students to update and further tweak each course in the following semester.

Lastly with respect to the classroom, I previously taught in a continuation program for the medical school at the University of Notre Dame (Australia). This program provided academic support to 1<sup>st</sup> and 2<sup>nd</sup> year graduate medicine students who identified as indigenous Australians. In this program, I taught physiology, pathophysiology and biochemistry content that covered all bodily systems to a coterie of 3 students and engaged in individualized and small-scale graduate level teaching. This experience allowed me to better refine my ability to support students in actively directing their own learning. In addition, this work further cemented my stance in tailoring my approach to meet students' academic needs as the broader context of each of these students was unique, and so were their academic needs. Further, beyond the self-directed approaches, I also found that being available to my students via multiple modes was immensely helpful in encouraging them to be active in their learning and engage with me as their professor.

*Beyond the classroom:* During my training, I have been able to participate in workshops and work directly with learning designers to improve the courses I was teaching, my teaching capabilities, and learn how to leverage active learning and other practice-oriented and authentic teaching pedagogies. Participating in these workshops has helped refine my teaching approach, particularly when it comes to considering individual students' needs and how to align my teaching responsibilities with their goals.

In addition to my formal teaching experiences, I have been fortunate to mentor others during my doctoral and postdoctoral training, and now in my junior faculty role. My mentoring experiences began as a senior graduate student, where alongside my graduate advisor I provided undergraduate Honors research students with technical psychophysiological training (e.g., EEG/ECG data acquisition and processing methods), as well as guidance and feedback regarding the design of their experiments, their scholarly works, and open and ethical collaborative practices. This has continued into my previous postdoctoral position and my now current role, where I have again been involved in training research assistants (RAs) and graduate students in psychophysiological methods. For example, during my time at PSU, as part of my training efforts I built tutorial content that covers all aspects of EEG techniques, including instructional videos that focus on the field standards of data acquisition and experimental set-up (now hosted on my website), and practical exercises targeting data processing methods. Relatedly, I later led a team in the EEGManyPipelines project (a large-scale collaborative project investigating how different analysts approach a given EEG data set and how analysis approaches affect the obtained results) and used this as an opportunity to deliver an interactive learning experience for the two graduate students on the team. During this project, we regularly met to discuss each specific hypothesis we needed to answer, and I actively mentored the students on the possible analytical approaches and how to execute these approaches. In between these meetings, we each executed our chosen approach and then used the following meeting to discuss our thoughts on the process, any troubleshooting needed, and our next steps. Most recently, at McLean I have and continue to mentor several of our post baccalaureate RA's (several of whom have since entered EEG based research labs in their graduate studies), in EEG pre-processing methods, pipelines, and techniques; a mentoring effort that has led to several RA-led published manuscripts with more to come. Moreover, I also actively lead a journal club (of between 4-6 RAs and postdocs) that meets for about 2 hours per week to review existing literature to explore and understand how EEG and its various techniques, pre-processing methods, and pipelines are and can be used in psychology research.

As a final but important note relevant to both mentoring and advancing equity, my experience as a first-generation student has led me to readily learn the institutional infrastructure available to support students. I found that students are rarely aware of institutional services and specific programs that are available and having someone who knows how to access and navigate these services can be invaluable, especially for those who lack generational knowledge. Overall, I truly value and have enjoyed my mentoring experiences to date, and have been pleased to write letters of reference for several of these students and see them pursue graduate studies as well as careers in healthcare, academia, and industry.