Teaching Statement

Daniel Gibney

My primary teaching experience includes delivering lectures in graduate and undergraduate level courses on algorithms and complexity theory while acting as a teaching assistant. While obtaining my Masters in Mathematics, I also delivered biweekly lectures on undergraduate mathematics. Currently, in my postdoc position at Georgia Tech, I conduct research group meetings on genome graphs, which has a similar lecture format, although the group is smaller than a regular class, and lecturing responsibility is sometimes shared by group members. In addition to my experience delivering lectures, I also worked closely with my Ph.D. advisor in grading and designing course material and exams for his courses.

In terms of teaching philosophy, I believe it is the instructor’s job to make students engage directly with the material and have them try to solve interesting problems for themselves. Having them read and then try to utilize the new information is the primary way that learning comes about. The purpose of lectures is to highlight the most relevant material for the students to focus on and to answer any questions they might have. I have always striven to make lecture notes that are clear and precise and also guide students to any additional resources that they might find interesting. Exams should be passable for students that have a basic understanding, but also have a few challenging questions to allow the students who understand the material the deepest to differentiate themselves.

I have also mentored several undergraduate and graduate students. While doing this, I guided students in their research by assisting in finding the most appropriate problems to work on, finding papers for them to read for related results, and teaching them to write manuscripts. The undergraduate I mentored while being a Ph.D. student at the University of Central Florida is now a Ph.D. student at the University of Michigan. We had papers accepted to the well-respected European Symposium on Algorithms (ESA) and SOSA@SODA conferences. Following our time working together, he also became a Goldwater Scholarship recipient. Within my last year as a postdoc at Georgia Tech, I have worked with two Ph.D. students on various research projects, contributing to their degrees.

I look forward to teaching undergraduate and graduate courses on algorithms and data structures, advanced programming, software engineering, machine learning, and more. I would also like to develop a curriculum for a new graduate-level course on advanced computational complexity. This course will cover material too complex for undergraduate classes and include recent developments from current research.