

1135-H1-1379      **James T Sandefur\*** (sandefur@georgetown.edu). *Flipping a Proof Class using Faculty and Student Videos.*

We discuss a Proof class taught using a combination of short video lectures and short videos of similar students attempting to prove mathematical statements. The class is usually assigned reading and watching short video-lectures, so class time can be primarily spent working on developing proofs in groups. A unique feature of this course is the use of the videos of students attempting to write proofs. By reflecting on the thinking seen in these videos, both through classroom discussion and written assignments, students learn to reflect on their own thinking.

In one early lesson, the class is assigned to watch a video in which a pair of students develop a backwards proof of a statement. Each student then converts this informal proof into an acceptable written proof, forcing the class to focus on the actual writing process. In another lesson, students watch two pairs of students working on a set inclusion problem. Each student then writes a paper comparing the ways each pair of students worked together, how they approached the problem, and their final proof. This has resulted in students learning to be better group members and developing better problem solving skills. The IRB approved videos are available online. (Received September 21, 2017)