

**GUNTHER**

One of the changes that we made over the last three or four years was to flip the classroom in 8.13 and 8.14. Essentially what we found is that we spend a lot of time in class with lectures by the lab staff which in the end seemed to be only moderately useful in really getting the material across. So what we decided to do was to export the lectures in the form of videos to the MITx platform and replace the time that we spent on that previously with in-class exercises and class discussions to really rehearse some of the concepts that were introduced in the lectures in class, which also gives us a much closer communication with the students. And you can find out what it is that really needs to be explored in more depth.

**ROLAND:**

The other thing that we did is move the prep questions for each of the experiments also to that platform. What is important there is that we can give the students instantaneous feedback on whether they got the question right or not, and remove the manuals for the labs onto the same platform to have a lot of that in one place. And I think, as I said, the main benefit is really that we can use the time that we free up in the class for discussions and exercises that are much more effective than the students sitting there and listening to one of us talk.