

**Faculty Interview with Prof. \_\_\_\_\_ (Anonymized for privacy)**

**Teaching Philosophy**

“I am trying to affect [students’] worldview... The world follows a set of rules. That’s both limiting and empowering. We can calculate things. We can estimate things. And you really want people to carry that through their life.” My faculty interview was useful to me for providing some re-affirmation that teaching astronomy has value and meaning to students who may have interests and life goals that are not related to anything beyond the Earth. Convincing students that a science class way outside of their major has relevance is a particular challenge to me. The interview gave me some guidance and framework to address this problem.

\_\_\_\_’s teaching methodology consists of three parts: knowing the subject, preparing appropriately for class and engaging students in the class. It is worth noting how little he expounded on knowledge and preparation because these come very easily to \_\_\_\_\_. For Introductory Astronomy 1101, where we focused most of the discussion, the content of the class is not a struggle. Similarly, the McKeachie’s Teaching Tips emphasizes that Bloom’s Taxonomy is built on a foundation of content and Lee Shulman’s “Taking Learning Seriously” essay emphasizes that facts do matter (as long as they fit into deeper learning). However, given the usual deluge of content in college classes, these authors did not feel the need to hammer out the importance of knowledge. In a similar vein, \_\_\_\_\_ also has a natural inclination for organization and preparation ahead of time that he did not need to volunteer much explanation for.

**Engagement**

In contrast to knowledge and preparation, what \_\_\_\_\_ *did* discuss extensively was his opinion on engaging students. This may be because he views student engagement to be a much more challenging. He offered a variety of ways he tries to engage students – giving the class relevance, putting topical concepts in context and asking the right questions to name a few. Some were the same as in McKeachie’s Teaching Tips such as projecting your own motivation and giving them feedback to help with their learning process. One not in the ALS 6015 class readings that \_\_\_\_\_ emphasized was the idea that students can be engaged when they are challenged. For him learning happens when there is some struggle to understand a new concept. It reminds me of what Luke Kellor, an Ithaca College professor and collaborator of \_\_\_\_\_ said, you have to expect to work out your mind just like you expect to work out your muscles in sports.

\_\_\_\_\_ and I discussed the value and drawbacks of using think-pair-share questions as an engagement tool. As suggested emphatically in our class, a good teaching statement gives the reasoning as to why clickers are used and does not just say, “I use clickers.” As with my own philosophy statement, \_\_\_\_\_ uses the iClickers because they are a valuable feedback technique and enables students to check their own understanding. I also pressed Prof. \_\_\_\_\_ to give some of the disadvantages to clickers and for him it was a loss of continuity of a class. If possible, it is nice to have a story arc followed through from beginning to end that ties together knowledge and learning goals. This was also one of the difficulties in our group teaching

assignment. The learning goals can be disrupted without careful planning of how think-pair-share and group activities will enhance and not distract from the story arc.

### **The Relevance of Astronomy**

Our discussion on making Astronomy 1101 relevant to students was of the most value to me. I had become resigned to confessing to students that nothing they learn about in astronomy, especially when more distant than a light year, will really affect their day-to-day lives in any significant way. \_\_\_\_, on the other hand, emphasized that astronomy is an area where scientists have made great progress in understanding by asking the right questions about how the world works. By modeling how to approach a scientific problem, we can prepare students to question and understand the world around them. There is a lot of false information propagated by politicians and institutes with an agenda that spread misinformation and then self-reference their own studies. Thinking like a scientist can be valuable in understanding what is misinformation and what is real information.

Another important learning goal is that we can emphasize in Astronomy class is to evaluate the result of a calculation. If they use density and gravity to calculate a human weight of twenty tons – does it make sense? How can we use our knowledge of the world to check our calculations to see if there is incorrect physics or incorrect math? These common sense checks can be valuable in any kind of workplace.

Another way Prof. \_\_\_\_\_ emphasized the value of astronomy is it gives a sense of scale: “Our planet is limited... just run the numbers through.” Although environmental science may be a more important class for students to study climate and humans effects on climate, astronomy gives us a sense of place in the Universe. Our search for life on other planets and understanding of how we got here can help instill a sense of altruism in a selfish world.

### **Challenges**

One thing \_\_\_\_ gained from end-of-term evaluations was they way he administered practice and real tests. Originally, he gave practice tests for students to use as a study guide. The questions on the practice tests were all different from what was on the real test, so students used the practice test as a guide on what material to leave out of their study plans – they admitted this on the evaluations. He changed this practice and put some actual tests questions (with permutations of numbers and ordering) to make the practice tests more motivational to students. This simple change was a valuable tool to encourage students to learn. It was one way to convert students’ motivations from McKeachie’s discussion of “performance goals” where they strategically study to do better on the test to “mastery goals” where they try to achieve course goals and concepts.

### **Balance and Service**

Teaching, research and service all take time. Prof. \_\_\_\_\_ remembers some of his students telling him that they do not envy his job when they look at all the work it requires. However, for him, being a professor does not feel like work. He does not

count the number of hours spent because he enjoys what he does and has also made sure that his interests were aligned with the department's before accepting the job.

\_\_\_'s service at Cornell is numerous. What he says about all these activities is that they are thankless. For him, service begins as a duty that he has to do for the department and field. However, as he got into service, he found that it gave him satisfaction to see how the department could improve and be better than it is now.

### **Teaching Portfolio**

Much like how David Way suggested keeping a teaching journal and McKeachie's teaching tips on keeping a portfolio, \_\_\_ found it useful to make notes on his classes in reflection. Every time he has a class, he writes directly into the slide notes how it went. He does this so that he can see these notes in preparing for the same lecture: what worked and what did not both in terms of the student feedback and his own self-evaluation.