Preparing for College Teaching in STEM

**Time:** Wednesdays, 10 – 11:30am,

**Schedule:** Feb 24th – May 5th, 2021

**Location:** Online (Zoom)

**Instructor:** Emily Elliott, PhD ([emell@upenn.edu](mailto:emell@upenn.edu))

**Description:** Preparing for College Teaching in STEM is an eleven-week practical course designed to help postdocs at the University of Pennsylvania prepare to teach their first college course, focusing on ways to support a diverse student body. The program will encourage participants to become more thoughtful teachers by engaging with selected readings, creating teaching materials, and working with other participants to develop their teaching. The expectation is that you will come prepared to each of these sessions having done the assigned readings and activities found on Canvas. Each week will include about 2-4 hours of preparation work.

**Goals:** The goals of the course is to prepare participants to teach in higher education and gain the confidence and practical skills to be able to successfully transition into academia or any industry requiring strong pedagogical skill sets.

**Application:** To apply to participate, please fill out this form ([https://forms.gle/75wij1QgiELY9WTg7](https://forms.gle/75wij1QgiELY9WTg7)). Because interest in this course is high and slots are limited, we make an effort to find participants who are fully committed to the course and ready to profit from it. If you are willing and able to put the work in to participate in this course, please complete the following application by **February 8, 2021**. We will make decisions about who we will invite to participate by mid-February. Decisions will primarily be based on interests that align with course goals and on seniority.
Preparing for College Teaching in STEM
Wednesdays, 10-11:30am
Emily Elliott, emell@upenn.edu

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Goals: This course aims to prepare participants to teach their first college course and to go on the job market. Participants will:

1. Create materials that will help them in their teaching and on the market (sample assignments and activities, syllabus, teaching philosophy)
2. Discuss teaching with a group of other instructors as a way of exploring what works and developing concrete teaching practices, with a particular focus on creating an inclusive classroom environment
3. Learn about what the education literature tells us about student learning and a range of effective teaching strategies and techniques

SCHEDULE

February 24th: Introductions and Teaching Goals
To start the course, we will get to know each other and learn about what we each hope to achieve through our teaching. We will identify what goals we have for our students and for ourselves, and how these relate to the variety of goals our students may have. We will also consider the challenges we face in supporting the diversity of students in our classes to achieve these goals. We will return to our goals and challenges throughout the course.

March 3rd: Equitable and Inclusive Teaching Strategies
In this session we will discuss teaching strategies that have been shown to promote equity and inclusion and consider how they may address some of the challenges that we brainstormed in the previous session. Participants will bring in ideas for first day activities to share with each other to get us started thinking about how to set a welcoming tone for our students.

March 10th: Assessing Student Learning- Designing Effective Assessments
In thinking about our teaching goals, what do we want to assess and how do we assess it? In preparation for this session, participants will be asked to write all or part of an assessment. Using these sample assessments, we’ll discuss how they can be used to promote and evaluate the type of thinking and level of understanding that we want from our students.

March 17th: Assessing Student Learning- Feedback and Grading
Once we’ve determined how we want to assess students, we need to determine how to grade their work. We also want to encourage our students to learn from their work and engage with the feedback that we give them. We will write rubrics for our assessments in preparation for this session. We will use these to think about how to grade, how to manage the time that it takes, and how to give effective and empowering feedback.
March 24th: Teaching Large Intro Courses
We’ll start thinking about in-class teaching in what is familiar territory for most STEM educators, the lecture hall. In this session, we will consider the ways in which we can support student learning, based on research into how students learn, particularly in large introductory courses. In this session, we will practice planning for a lecture and think about how to do so efficiently and effectively.

March 31st: Active Learning
Much of the recent STEM education literature has focused on the use of active learning techniques to improve undergraduate education and to promote student retention. Using an observation of an active learning class and some readings about active learning as a jumping off point, we’ll explore techniques that we can use to structure classes so that our students take an active role in their learning.

April 7th: Designing a Course
While we have discussed how to plan for individual lessons and assessments, in this session we will think about how we can approach planning out a series of lessons and assessments, and what we should consider when creating a course. We will also think about ways that we can evaluate whether our approach is effective.

April 14th: Assessing a Course
Now that we have thought about how we want to design a course, we can begin to think about how we will know that we are successful. How will you know if students have achieved your content and non-content goals? How do you use student feedback to make changes? We will also think about how we communicate our findings to others, either for publication or for tenure.

April 21st: Creating a Syllabus
Once we have a course plan, we need to communicate it through our syllabus. In preparation for this session, participants will bring a draft of a syllabus for a class that they will or might teach in the future. We will give each other feedback on our syllabi and begin to think about the tone that we want to set with the syllabus, along with the policies and procedures that we think are important to include.

April 28th: Working With Students One-On-One
Vital teaching happens at the one-on-one level. We will discuss ways to facilitate individual discussions with students and how to handle difficult conversations. We will also consider what an effective mentoring relationship looks like.

May 5th: Teaching Philosophy Statements
As a way to bring our discussions together, participants will draft a teaching philosophy statement, a document that is often requested in academic job applications.