

Capstone Teaching Demonstration – Peer Feedback Form

Instructor Name: Kevin Tao

Observer Name: Alyssa Pybus

Course: BMED 3600 Cellular and Molecular Physiology

Topic: CRISPR

Date and time: October 16, 2020 – 11:00 am – 11:50 am

Class type: Synchronous through Bluejeans, asynchronous recording

LEARNING GOALS AND ASSESSMENT

Does the instructor provide specific, clear learning objectives? Does the instructor then teach towards these objectives? Has the instructor gathered evidence of student learning?

- What is CRISPR and what are the parts to the CRISPR Cas system?
- What are the benefits of using CRISPR over previous ways to modify DNA?
- What is the mechanism of how CRISPR modifies genes?
- What are biomedical uses with CRISPR?
- Moving forward, how should we utilize and think about CRISPR?

Formative assessment: In-class problems and a practice quiz for homework.

Summative assessment: Two to three quiz questions.

You included a learning objectives slides clearly laying out the questions you'll be answering throughout the lecture. I like putting the objectives in this format (questions to think about and eventually answer), and it's good practice to reference them again as you cover each topic. You did a good job of explaining each learning objective to provide a good foundation for the students on what exactly they're supposed to be learning in the class.

INSTRUCTIONAL STRATEGIES

Do the chosen instructional strategies seem to support the learning objectives and assessment? Are there areas where slides, handouts, explanations, student interaction, etc. could be improved?

Your use of interactive activities greatly supported student learning. As a fellow TA in this class, I know the students really enjoy interactive content and don't get a lot of class-wide activities. The word cloud for "What does CRISPR mean to you?" was a fun way to begin a discussion on a topic that all BME students have heard of but few know details about, as it has many ethical controversies and wide interest. "Designer babies," "ethics," and "the future" were good conversation starters about controversies within the field.

You used a combination of voicing questions out loud for bold students to answer and class-wide polling to encourage full participation. You picked the right times to use each, having simple questions and answers over voice and thoughtful activities class wide. In the future, I would encourage you to include even more opportunities for class-wide participation, particularly when calling back to learning objectives. The students really appreciate seeing the types of questions they'd be expected to answer on homework or quizzes being introduced for the first time in class, so they can check their own understanding against the class standards. It also allows you to see whether the students are truly learning the material you're trying to teach.

Capstone Teaching Demonstration – Peer Feedback Form

I liked that you incorporated a bit of a history on CRISPR, since to me I feel like it always helps students connect the course material with a real-world story to remember it. This includes the very recent history when Dr. Doudna and Dr. Charpentier won the Nobel prize for this work.

I felt like you covered many topics that were not included within the stated learning objectives (history, origin of CRISPR/Cas system, different types of DNA repair). I assume that there were sections that you wanted to cover in class but don't necessarily intend to test on. If that is the case, I think it's important to be somewhat explicit about it.

The chosen instructional strategies certainly support the learning objectives.

CLASSROOM CLIMATE

Does the instructor create a positive learning environment in which all students are comfortable participating?

As a woman in science I appreciated that you highlighted the story about Dr. Doudna and Dr. Charpentier winning the Nobel prize, the first women duo to receive this honor, and commented on how this speaks to increased diversity in the field. I think this can make women in the class feel included and inspired.

You said at some point "if I'm going too fast, please let me know and I'll slow down." I think the students are generally reluctant to interrupt in front of everyone and admit when they feel the class is moving too quickly, so a better method to ensure everyone is still following along is to include more interactive questions to test comprehension of important concepts. This also gives the students a brief pause to think over what they've learned without the fear of missing whatever content is still being covered.

PRESENTATION

Do the structure, pace, transitions, visual aids, and verbal/nonverbal communication support learning?

You used your slides very effectively. You had a lot of very helpful images. There were a few text-heavy slides for important concepts, but I felt they were used in appropriate circumstances that require students to take notes and remember the material.

I enjoyed your analogy of using CRISPR and making pizzas. This helped the students understand the concept of CRISPR and gave them a good way to remember it.

One area for improvement may be your transition from one topic to another. As the topics are aligned with the learning objectives, once you wrap up one topic it can be helpful to the students to use a summary slide addressing what they've learned and giving the students a chance to ask questions. This could also be a good place to ask a summary check on learning question.

You are a very effective communicator. You explained concepts very clearly using easy to understand language. I think the students came away very appreciative of this, and I know they speak highly of you in course surveys and in my own office hours!

Capstone Teaching Demonstration – Peer Feedback Form

Prioritized Feedback

1. What do you think was the one most effective aspect of the teaching demonstration?

Your communication skills are spot on. You do a great job of simplifying complex concepts with enthusiasm and expertise, which I know the students appreciate. You picked really interesting and important content to cover in this class and the students got a lot out of this presentation. The slides were well put together and you were successful at engaging the class. This lecture was very impressive to see from an undergraduate!

2. What do you think is the most important consideration for the presenter's future teaching?

My biggest recommendation for you is to incorporate even more interactive content and specifically tailor that content to the course learning objectives. I found it useful in my earlier lecture to create at least one interactive exercise per major learning objective, and I received a lot of positive feedback from the students on this.