

Proposal:

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Name of Workshop: 5E Lesson Planning in the Biology Classroom (I need a better name, but this is what I have in mind)

Attendees: This is TBD- But here is what I am thinking to recruit participants: In college I was part of the Robert Noyce Scholarship program and I have been very active in mentoring students in the program since I graduated (usually in the form of hosting student visitors in my classroom for a week each year). My college advisor recently reached out and asked if I could spend some time talking to the current scholars on Zoom (he didn't necessarily say what I should talk about but wanted me to at some point connect to them). I would in fact like to invite these preservice teachers (12 undergrad students from SUNY Oneonta). I am also part of several professional networks that I would like to extend the invitation to (Greentree Foundation Teacher Ecology Program, Columbia University Summer Research Program for Science Teachers, and the NYS Living Environment Teachers Facebook Group). Finally, I could ask my principal how I might contact other biology teachers in my district. This would extend the invitation to an unknown number of teachers from various schools in New York City, Long Island, and NYS. I plan on sending out a Google Form so that I can get a better idea of who might participate. My goal is to recruit at least 20 participants.

Rationale: I selected this topic because I want to be able to provide workshop that is based on participation and collaboration. Something as simple as discussing the 5Es can really inspire teachers to think about lesson planning in different ways. Furthermore, I would like to share with teachers the 5E unit that I developed for Methods of STEM Education.

Vision of Workshop:

For each of the 5Es, I would like to provide a brief description of what it means / what it could look like in a lesson. I would like to generate several brainstorming prompts for teachers to work on in breakout rooms.

Example 1

1. "Engage" mini lesson lead by me- Use of phenomena, creating interest, generating curiosity, asking questions, etc.
2. Participation Prompt 1- I could SHOW a phenomenon and ask teachers in groups how they could use this phenomenon to teach a biological concept (this is similar to something that we did in Methods of STEM).
3. Participation Prompt 2- I could GIVE teachers a topic and ask them to brainstorm possible phenomena.

Example 2:

1. "Explore" mini lesson led by me- Using authentic data, diagrams, lab experiences, investigation and research, etc.
2. Participation Prompt: Your students are beginning to learn about gene expression. As an engagement piece in the previous lesson, students watched a video clip about identical twins that were separated at birth and generated questions about the slight differences in their appearances. Now, students will further **EXPLORE** the idea of gene expression. **TASK:** *Brainstorm ways in which you can get students to explore gene expression and build their own understanding without necessarily 'telling' them what gene expression is.*



NASA and Endeavor Content: My 5E lesson utilizes many NASA resources. While I do not have all of my “5Es” planned out, I will certainly look for NASA resources to share for each. 5E lesson planning was something that I was not knowledgeable about before Endeavor, but it has been a fundamental part of my coursework (In terms of what I’ve learned and what I’ve been asked to produce/submit).

Obstacles: Planning and timing. I imagine that the workshop will be 1 hour long. Since I really want this to be an interactive experience, I want to make sure that I fully prepare teachers with each “mini lesson” so that breakout rooms are productive.