

Leadership Project Options: Choose one of the options below for your leadership project

Option 1: Implement a Professional Development Experience

Select this option to focus on planning a professional development session that highlights a specific aspect of the Endeavor program that you feel will meet the needs of others in your school context. For example, you may wish to share resources that support three-dimensional teaching (DCI, SEP, CCC), NASA resources that support exploration of authentic data, or a lesson you developed for your classroom. Each project is unique to YOUR needs and your colleagues needs. The PD must include some aspect of the Endeavor program and it is strongly encouraged to make use of NASA assets.

Option 2: Prepare and write a practitioner article

Select this option to share your work through preparation of an article suitable for submission to a practitioner journal, such as NSTA's Science and Children or Science Teacher, or NCTM's Mathematics Teacher. Highlight a lesson, pedagogical practice, or specific content area in your writing, following the format required by the publication. The publication process can take time. Therefore, evidence that you prepared and submitted an article will suffice. You may ask your instructors to collaborate. The focus of the article must include connections to Endeavor class(es).

Assignment 3: Proposal Submission Your overall goal is to support STEM integration with your colleagues through the sharing and modeling of classroom activities, and/or philosophy. Select from one of the options above and articulate your plan. The proposal must clearly articulate how your PD will use NASA assets and/ or components of your Endeavor coursework.

Submit a 1/2-page project proposal plan which answers the following questions:

1. What is the title of your leadership project?
2. Which option did you choose and why did you select the option/topic?
3. Who is your proposed audience? Which teachers will you serve with your PD and activities? What grades, subjects, and how many students do they teach?
4. How will your project demonstrate integration of STEM in the classroom?
5. What outcomes or expectations do you hope to see for your educators?
6. How will you follow up with the teachers in attendance?

Greg Smith Leadership Project Proposal Plan

1. What is the title of your leadership project?

Teaching Earth Science Concepts in a High School Research Experience Program

2. Which option did you choose and why did you select the option/topic?

I chose Option #2 – the preparation and publication of a practitioner article. The reason I chose this option is because I have been wanting to publish a paper about the program I teach for a number of years now, and I would like to “bridge the gap” between my experience as a scientist, exemplified during my Ph.D. years by scientific publications, and my experiences as a high school teacher. Given these goals and my background in Earth and Environmental Sciences, it seems natural to target the *In the Trenches* article published by the National Association of Geoscience Teachers.

3. Who is your proposed audience? Which teachers will you serve with your PD and activities? What grades, subjects, and how many students do they teach?

My intended audience is threefold: 1) 9-12 geoscience teachers, 2) administrators who have been looking for ways to incorporate a high school research program in their schools, and 3) scientific pedagogy researchers at the university level. I would like to target the 9-12 grade high school science teachers by modeling specific ways I teach Earth Science concepts to high school students in ways that their students would find exciting, relevant, and timely. I would like to target the administrators by highlighting the academic successes that my students have seen over the years (I envision including a table of ACT scores and colleges these students have attended over the last 5 years of my teaching). Finally, I think there only exists one scientific publication referencing my program in the literature, and that publication is almost 10 years old and does not include my current high school (the ISR program is taught at 3 Nashville High Schools – mine is the newest addition). I would like to include a publication about the ISR program to bump it up in the literature and attract more audiences to learn about it.

4. How will your project demonstrate integration of STEM in the classroom?

The ISR program works by teaching a series of inquiry-based units in the Freshmen and Sophomore years, which have been developed by scientist educators and designed to incorporate concepts and activities from a diversity of scientific fields. I plan to provide a short overview of a few of these units (Marine Biology, Water Quality, Paleoecological Proxies, and Parasitology) to demonstrate how Earth Science concepts can be taught in each of them at various levels (satisfying the goals of the Publisher) as well as explaining how teachers can incorporate concepts from online databases or satellites to further engage their students.

5. What outcomes or expectations do you hope to see for your educators?

As mentioned above, I hope the article is read by my intended audience and I hope it sparks conversations about how to provide high school students with authentic, inquiry-based lessons that go past the “cookbook” labs developed by testing agencies to satisfy goals on a standardized test.

6. How will you follow up with the teachers in attendance?

I’m not sure if there will be a follow-up with the readers, but I do envision this article serving as a jumping off point for future publications.