Practicum in STEM Leadership Professional Development Proposal – Billy Green

---

1. What is the title of your mini STEM professional development?

"Science in ***TRANS***ition"

2. Why did you select the topic?

During the first course of the program, "Methods in STEM Education – Secondary" I was so inspired by the Nature of Science assignment. I struggled to choose a topic and then stumbled upon an article titled "Science in Transition" by Sara Reardon. The article summarized the ENIGMI studies which is the largest study of its kind that will provide insight into the medical transitions of transgender people. It was fascinating for me to go through the assignment and connect it to scientific understanding. I began to question, if my colleagues knew of the recent findings in this field and the impact it would have on the learning of people who are of the trans-experience. I became highly interested in how Science Teachers, Science Classrooms, and Science Curriculums introduce the science behind transgenderism.

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?

The proposed audience is a mix of pre- and in- service teachers who are enrolled in a methods course for teaching science at Hunter College, the City University of New York. These teachers were chosen because they teach elementary school and middle school science. There are 25 students enrolled in the course, and they each teach an average of 80 students per day.

4. **What "general" science or mathematics concepts or learning goals will you and your materials address which can potentially replace other classroom activities?**

Science as it is currently taught is not inclusive to gender expansive youth. Sitting in a classroom, especially a science classroom, that validates itself on laws, theories, and evidence, is traumatizing to a gender expansive student. Imagine, your Biology teacher is teaching genetics and states "boys have XY genes and girls have XX genes", while this is scientifically true, current research has linked sexuality to genetic markers. The teacher will rarely teach the later part of the aforementioned statement, and students identities are being attacked by curriculum that is not inclusive.

Goal 1: To learn about the current resources NASA has that support creating diverse and inclusive environments for those who seek a career in space science.

Goal 2: To develop the language that can inform change to promote curriculum and classrooms that are inclusive of the gender identity spectrum.

Goal 3: To obtain teaching strategies that will be inclusive of gender expansive youth and assist others in gaining a better understanding of the complex relationship between science and identity.

5. How and where do you intend to carry out your PD? How long will the session be? When will it be held? Will teachers have access to computers? (Teachers will have access to their computers)

Science In TRANSition: *Creating Spaces for Inclusive Practices in Science Classrooms* *Hunter College, City University of New York*		
Time	Activity	Goal(s) / Learning Outcome(s)
20 minutes	**Introduction** a. Sally Ride Short Reading: https://www.space.com/40916-sally-ride-pride-inspiration-legacy.html	To understand the motivation of the presenter. To understand Sally Ride's legacy and the relevance it plays in elementary science education.
30 minutes	**Activity 1 – NASA Message to Students** a. NASA "It Gets Better" Video: https://youtu.be/yiCYoOjCcNw b. Research Article Review c. 3 – 2 – 1 Discussion	To learn about the options NASA has for youth who identify as gender expansive. To connect the current research involving transgender individuals to our classrooms. To create a space for understanding the beauty of our

		differences.
30 minutes	**Activity 2 – Language Boot Camp** a. The Language of Inclusion https://odeo.hq.nasa.gov/documents/Gender_Trans_Guide.pdf b. *SOGIE the Astronaut, https://15xh2r248z7d286gcz3i6g1q-wpengine.netdna-ssl.com/wp-content/uploads/2018/03/SOGIE-infographic.jpg* c. Musical Conversations	To obtain the language necessary to create inclusive spaces in science classrooms. To introduce a teaching strategy useful in building inclusive settings.
30 minutes	**Activity 4 – Curriculum Scavenger Hunt on the NASA Website** a. Exploring NASA resources for Elementary School Educators: https://www.nasa.gov/stem/foreducators/k-12/index.html b. Group- Share- Out	To navigate through the STEM resources provided on their website. To identify an activity to do as a lesson project.
10 minutes	**Conclusion – Implications for Teaching and Learning**	To discuss the impact of this topic on 21st century Science Teaching. To discuss next steps

6. What outcomes or expectation do you hope to see for your educators?

Please see column three of table above.

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

Students of the course will have to complete an assignment following the 120 minute professional learning experience. The assignment is a “lesson project”. Students will have to use one of the activities they find on the NASA Activities for STEM Educators and create ways to include the intersections of the students they teach (an intersection, for this project is not limited to sexual orientation). These teachers will submit their lessons to me through their classroom GOOGLE GROUP.

In addition, all teachers will be provided with my professional email to reach out for any advice or reflections.