Leadership Project Proposal

1. Title of Leadership Project

Using NASA Earth System Data to Support Global Citizenship in NYS Biology

2. Option Selected and Rationale

I have chosen Option 1, implementing a professional development experience. I selected this option because it allows me to design and model a classroom lesson that integrates authentic NASA Earth system data into Biology instruction in a way that is directly usable by my colleagues. With the shift toward developing students as global citizens through our Portrait of a Graduate framework, I see value in using real, global datasets to help students understand how biological systems are connected to environmental change on a larger scale. Sharing a sample lesson allows me to focus on practical classroom application rather than theory alone.

3. Proposed Audience

The proposed audience is the Biology team, consisting of six educators including myself. These teachers teach grades 9 and 10 NYS Regents Biology and are responsible for aligning instruction to the NYSSLS while also supporting schoolwide instructional priorities such as data literacy and global awareness.

4. Integration of STEM

This project demonstrates STEM integration through the use of My NASA Data's Earth System Data Explorer, which allows students to analyze and compare temperature and precipitation data across different regions and time periods. During the professional development session, teachers will engage with a sample Biology lesson in which students interpret real Earth system data and connect observed patterns to biological concepts such as ecosystem productivity, photosynthesis, and organismal stress. As supplementary resources, teachers will also be introduced to NASA Worldview and the NASA Climate Time Machine as visual tools that show how Earth system variables change over time. These resources provide additional entry points for phenomenon based instruction and allow teachers to differentiate between data driven analysis and visual pattern recognition.

5. Intended Outcomes for Educators

Following the professional development session, educators will feel more confident incorporating NASA Earth system data into Biology instruction. Teachers will be able to use global datasets to support student data analysis, connect biological processes to environmental change, and reinforce global citizenship within the Biology curriculum. Educators will also leave with multiple resource options that can be adapted based on student readiness and instructional goals.

6. Follow Up Plan

After the professional development session, I will share the lesson materials digitally and collect brief teacher feedback through a Google form. I will also follow up informally during common

planning time to discuss implementation, answer questions, and support teachers who are interested in piloting or adapting the lesson/material in their own classrooms.