

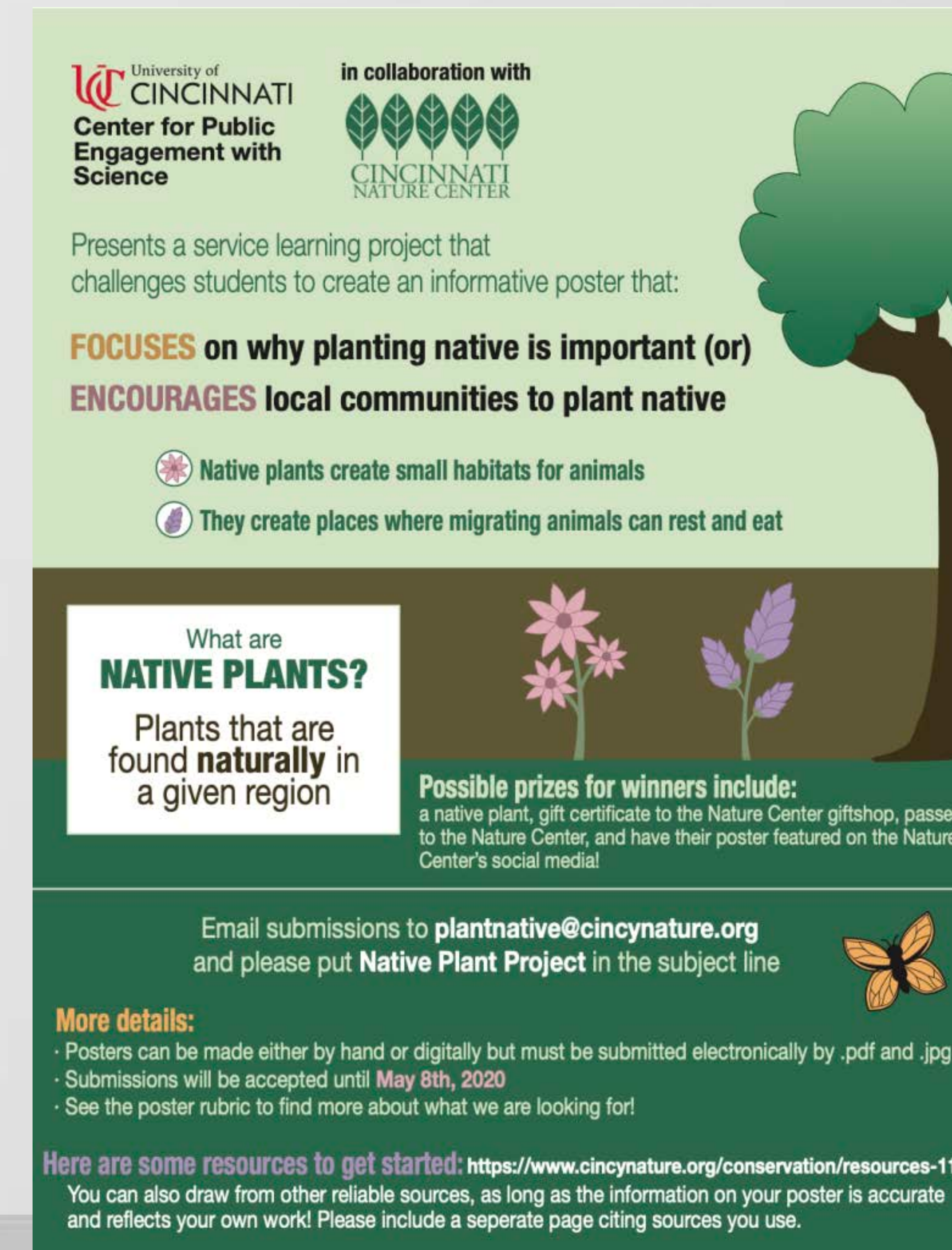
Introduction

Science librarians are often engaging patrons and the public with topics in science communication. We promote citizen science initiatives, host events such as Wikipedia edit-a-thons and curate displays communicating scientific subjects to broad audiences. In spring 2020, I completed a graduate course titled Public Engagement with Science. The course was taught by the co-directors of the University of Cincinnati Center for Public Engagement with Science. The final project for this course was a public engagement group project in partnership with a local community institution. This poster discusses the Center for Public Engagement, the philosophy of public engagement that guided the project, and the development, deployment, and assessment of a public engagement with science project to help fellow science librarians improve the quality of their public engagement endeavors.

Community Partner - Cincinnati Nature Center

The AAAS framework of public engagement was the guiding philosophy from project ideation, to development, and execution. In order to make the engagement project **intentional** and **meaningful**, our group visited the Cincinnati Nature Center to learn about their mission, current projects, regular events, and goals for a public engagement project. This is an important step when working with a community partner, especially if it is a new project or partnership. Through the site visit and needs assessment, we learned we needed to align the project with the Nature Center's mission, which focuses on educating the community and preserving the local ecology. We also learned that they wanted to intentionally engage the local community immediately near the Nature Center.

Figure 1 - Promotional Flyer



Key Takeaways

To improve the quality of science engagement projects, librarians should aim to

- Use the AAAS framework for public engagement to guide the development of the project.
- Partner with local stakeholders, such as Centers for Public Engagement or local institutions like museums, nature centers, or zoos.
- Make a deliberate effort to learn about the community partner's needs, goals, and ongoing activities.
- Embed a mechanism for mutual learning.
- Create project goals and an assessment plan.

University of Cincinnati

Center for Public Engagement with Science

The Center for Public Engagement with Science works to

- **Increase engagement with science** by connecting the university to community partners and the public.
- **Improve quality of science engagement** by promoting dialogue among and benefit for all stakeholders.
- **Innovate forms of science engagement** by drawing on philosophy and other humanities, natural and social sciences, and science education.

Project Development

The project we created was a **poster contest** focusing on why planting native is important or encouraging local communities to plant native. This contest aligned directly with the Nature Center's mission of educating the community and preserving the local ecology, and was distributed to local public school systems in the surrounding area. By intentionally targeting the local school systems, we were supporting the goals of the Nature Center to engage their local community. This project was deployed in April, 2020, during the early stages of the ongoing coronavirus pandemic. At this time, local educators were struggling to quickly convert their classes to an online format to accommodate quarantine and lockdown measures. Part of the motivation for the poster contest was to create a project that teachers could easily deploy in their classrooms.

Figure 2 - Example Submissions



Philosophy of Public Engagement with Science

- **The Deficit Model** - Research has shown a very strong effect of an ingrained idea of the “deficit model” of scientific communication, which assumes the public is missing knowledge that an expert scientist will provide (Dudo & Besley, 2016). The Deficit Model attributes public skepticism or hostility towards science and technology to a lack of understanding caused by a lack of information.
- **AAAS Framework** – The American Association for the Advancement of Science (AAAS) defines Public engagement with science as **intentional, meaningful** interactions that provide opportunities for **mutual learning** between scientists and the public. Mutual learning refers not just to the acquisition of knowledge, but also to increased familiarity with a breadth of perspectives, frames, and worldviews.

Deficit Model

AAAS Framework

Project Elements and Assessment

The decision to create a poster contest was informed by the AAAS framework's emphasis on mutual learning. This is one of the key steps to moving beyond the deficit model in engagement activities. By having students create posters, they are able to learn about local ecology but also use their voice to teach and communicate the concepts. The creative nature of the poster format allowed student's to communicate their perspectives, frames, and views alongside the ecological information. In order to help empower local educators and make the project easily adoptable in classroom settings, our group aligned the project to the state's learning standards for the K-12 science education curriculum.

The combination of multiple elements formed the assessment plan for this project. These include, defining goals for the project and an evaluation of the goals after the project, the creation of a feedback form that was shared with educators, a grading rubric to standardize the assessment of poster submissions, and social media engagement metrics.

References

Dudo, A., Besley, J. (2016) Scientists' Prioritization of Communication Objectives for Public Engagement. PLOS ONE 11(2). <https://doi.org/10.1371/journal.pone.0148867>

Storksdieck, M., Stylinski, C., & Bailey, D. (2016). Typology for Public Engagement with Science: A Conceptual Framework for Public Engagement Involving Scientists.

Resources

AAAS Public Engagement Website – <https://www.aaas.org/focus-areas/public-engagement>

UC Center for Public Engagement – <https://ucengagingscience.org/>

Cincinnati Nature Center – <https://www.cincynature.org/>

Poster Contest Announcement – <https://ucengagingscience.org/2020/04/21/poster-contest-for-the-cincinnati-nature-center/>

Poster Contest Winners Announcement – <https://ucengagingscience.org/2020/08/14/mission-grow-cincinnati-contest-winners/>

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