

NSF Careers: Strategies for Planning Broader Impacts with Educational Outreach Activities

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Overview:

This presentation will discuss effective strategies for planning educational outreach activities with formal school settings and informal educational settings.

Types of broader impacts:

1. Content knowledge for teachers
2. Curriculum materials for students
3. Educational experiences for the general public
4. Educational experiences for youth

Formal school settings: Public schools, charter schools, private schools.

Informal education settings: Science and other museums, nature centers, environmental education centers, state parks, zoos, after school programs.

Formal school settings:

Content knowledge for teachers and/or curriculum materials for students:

1. *Does the content align to the:*
Next Generation Science Standards - <http://www.nextgenscience.org/next-generation-science-standards>
Framework for K-12 Science Education: Practices, Cross-cutting Concepts, and Core Ideas (National Research Council, 2012) -
http://www.nap.edu/catalog.php?record_id=13165#

Major new focus on engineering, technology, and applications of science.

2. *Does the content align to PA state standards?*
Check the PA Standards Aligned System - <http://www.pdesas.org/> and <http://www.pdesas.org/Standard/Views>
If high school, is it covered on the Keystone Exam?
PA is a *Race to the Top* state. The existing standards will change in the next couple of years to align to the Next Generation Science Standards.

3. *Does the content align to the local school district's curriculum?*
This is important.
4. *Talk to the Assistant Superintendent of Curriculum and Instruction (or Director of Education) if you wish to involve a local school district and get a letter of support for commitment.*
Lehigh has excellent relations with BASD and ASD.
BASD: Dr. Jack Silva (jsilva@beth.k12.pa.us)
ASD: Dr. Russ Mayo (mayor@allentownsd.org)
5. *Will the learning activities involve equipment?*
Budget for this. Schools have no money in their budgets for this.
6. *Will professional development for teachers be needed?*
Who is the target audience?

All grade level teachers in a district?

Budget for substitute costs to allow release time. Schools have no money in their budgets for this.

Teachers willing to come to a summer institute?

Budget for stipends to attend.

How will you get the word out to multiple school districts?

Lehigh currently does not have a central dissemination mechanism.

Angela Nicole Scott is Director of LU academic outreach.

There are some academic outreach initiatives at Lehigh – for example – CHOICES – Society of Women Engineering; Science Learning Adventures – Dr. Gary DeLeo,

Consider partnering with other organizations that provide teacher professional development and has this infrastructure established. (Colonial Intermediate Units 20 and 21; DaVinci Center, Wildlands Conservancy, Lehigh Gap Nature Center).

7. *Will learning activities involve well-designed curriculum materials?*
Consider budgeting for graduation students from the Teaching, Learning, and Technology program for instructional design work if you expect quality learning material development.

See <http://www.ei.lehigh.edu/eli> for an example of such well-designed curriculum materials supported with grant funding. (Nationally recognized curriculum learning materials)

8. *Is it the curriculum a one-shot deal or is this sustainable with embedded supports?*

Avoid one-shot deals or anything that cannot be sustainable. This does not reflect well on you or Lehigh.

Informal education settings:

Educational experiences for the general public and for youth

One-shot enrichment days at the facility: Public programs, home school groups.

Exhibits: These can be indoor and outdoor learning experiences.

Home schoolers: Davinci Center has such a program

After school clubs: Lehigh Gap Nature Center

Summer programs/camps: Wildlands Conservancy, DaVinci Center, Lehigh Gap Nature Center

Lehigh has excellent relations with:

Wildlands Conservancy:

Maureen Ruhe

Director of Environmental Education

mruhe@wildlandspa.org

610-969-4397; x136

DaVinci Center:

David Smith

Director of Teacher Professional Development

484-664-1002 x111

dsmith@davinci-center.org

Lehigh Gap Nature Center:

Dan Kunkle

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