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

2. Does the content align to PA state standards?
   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 (mayo@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](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
Director
dkunkle@ptd.net
(610) 760-8889