

Today we would like to introduce to you what science outreach is and why it is a great way to build up your research skill set. We will show you how to organize an event by providing an example. We've included numerous resources to help you get started.



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## Objectives

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- Explain why science outreach can be a part of your professional development plans
- Share STEM outreach opportunities at your institution
- Introduce how to organize an outreach event

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## Today's Workshop

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- Introduction
  - Dr. Jessica Perez
  - What is science outreach?
  - Why you should get involved?
- Activity
  - ENVISION team, Matt Milner lead
  - Example outreach activity: Solar Oven
- Workshop evaluation

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# STEM outreach takes many forms

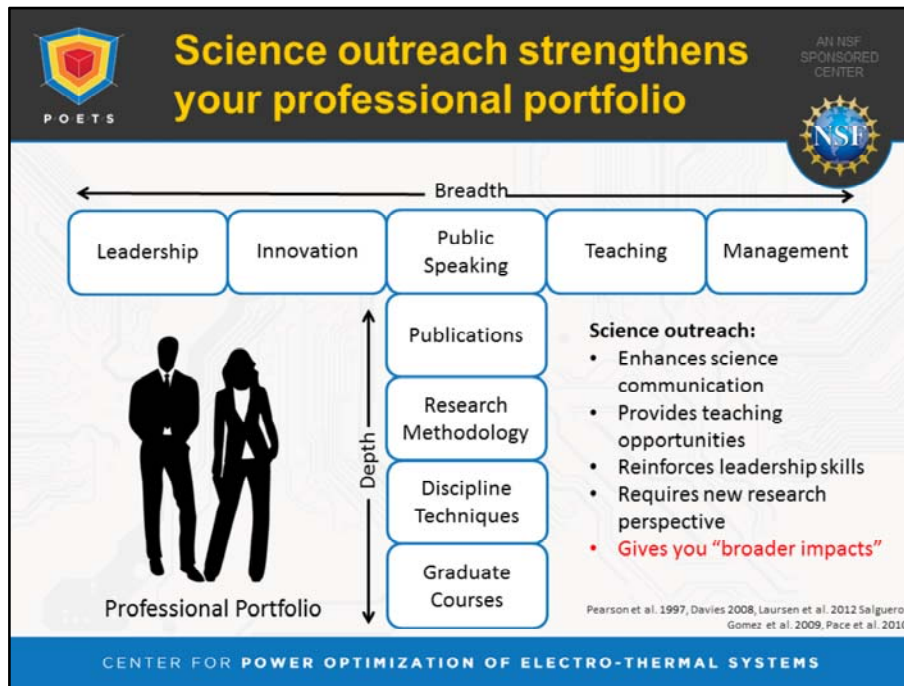
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<p>Teaching a scientific concept</p>	<p>Presenting your research</p>	<p>Writing a science blog</p>	<p>Working with high school teachers</p>
<p>Organizing summer science camps</p>	<p>Tutoring</p>	<p>Integrating research in the arts</p>	<p>Mentoring undergraduate</p>

<http://clipart-library.com>

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Just as in research you have to be T-shaped (depth and how breadth , connect to other projects/schools)

Additionally, as a professional you need to be T-shaped

POETS wants to help you develop as a scientific leader regardless if you want to go into academia, industry, start a business, etc. All these skills are essential to your profession portfolio

Science outreach and scientific communication in general fill in important gaps in your resume if you were not able to obtain these skills during your graduate school experience. Establishing a record of science communication early in career can support successful grant application with funding agencies, such as the NSF, that value "broader impacts" including whether research promotes learning, broadens dissemination and benefits society (Messinger et. al. 2009).

Communicating effectively with the general public requires scientists to understand the perspective of their audience and frame their message in relevant ways (Groffman et al. 2010), a practice that will also improve communication with other scientists (Baron 2010b).

The NSF CAREER is a career development award designed to help junior faculty lay the foundation not only as outstanding researchers but also as educators demonstrating commitment to teaching, learning, and dissemination of knowledge.



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## NSF CAREER Award

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CAREER Solicitation (17-537), released in Jan. 2017

- Introductory paragraphs emphasize the **integration of education and proposed research and the reciprocal relationship between the two.**
- A new paragraph states that for certain disciplines and career interests, activities such as entrepreneurship, industry partnerships, or policy may enhance research and education plans. (Our advice: Consult with a cognizant program officer.)
- Additional emphasis given to **strategies for assessing impact/effectiveness of research and education plans.**
- New examples of **educational activities provided.** (Per NSF: These examples are not intended to be prescriptive; they are provided to spark innovation and creativity.)

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Although the sample size is small. Similar trends have been found for other outreach activities like “Shadow a Scientist” or creating “YouTube video about research.”

Pearson G, Pringle SM, Thomas JN. Scientists and the public understanding of science, *Public Understanding of Science* , 1997, vol. 6 (pg. 279-289)

Davies SR.. Constructing communication: Talking to scientists about talking to the public, *Science Communication* , 2008, vol. 29 (pg. 413-434)

Laursen S, Thiry H, Liston C. The impact of a university-based school science outreach program on graduate student participants’ career paths and professional socialization, *Journal of Higher Education Outreach and Engagement* , 2012, vol. 16 (pg. 47-78)

Salguero-Gomez R, Whiteside MD, Talbot JM, Laurance WF. After “eco” comes “service”, *Frontiers in Ecology and the Environment* , 2009, vol. 7 (pg. 277-278)

Pace ML, et al. . Communicating with the public: Opportunities and rewards for individual ecologists, *Frontiers in Ecology and the Environment* , 2010, vol. 8 (pg. 292-298)



# Science outreach helps you address "broader impacts"

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NEWS FEATURE

NSF-BIOE 49527 May 2010



## Science for the masses

The US National Science Foundation's insistence that every research project addresses 'broader impacts' leaves many researchers baffled. Corie Lok takes a look at the system.

Research-funding agencies are forever trying to balance two opposing forces: scientists' desire to be left alone to do their research, and society's demand to see a return on its investment.

NSF-funded researchers do to fulfil their broader-impacts requirement. She took three female graduate students on weekly visits to local classrooms, where they spent 45-minutes leading nine- and ten-year-old children

activities listed in the foundation's proposal guide are: developing educational materials for elementary, high-school and undergraduate students; involving these students in the research where appropriate; creating

Lok, Corie. Nature 465:7297 (2010): 416-419

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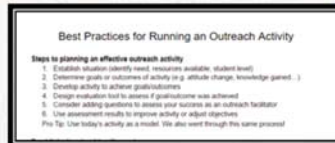


Today we will provide you with resources to get started...

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Online resources for outreach opportunities at your university at poets-erc.org



Guide on planning an outreach activity



Example outreach activity you can implement at your institution!

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# Thank you!

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## ENVISION

UIUC-based graduate student outreach organization

Website: <https://publish.illinois.edu/envisionuiuc/about-2/>

Ashley Armstrong, Co-President ([aaarmst2@illinois.edu](mailto:aaarmst2@illinois.edu))

Matt Milner, Co-President ([mmilner2@illinois.edu](mailto:mmilner2@illinois.edu))



## POETS Education

Website: <http://poets-erc.org/education/graduate/>

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