

*Connecting people and resources to
accelerate discovery by empowering the
science gateway community*



Science Gateways Community Institute

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Award Number
ACI-1547611

Welcome students!

We're glad you're here.

What is a science gateway?


science gateway /sī' əns gāt' wā'/ n.

1. an online community space for science and engineering research and education.
2. a Web-based resource for accessing data, software, computing services, and equipment specific to the needs of a science or engineering discipline.



Gateways can be many different things, as you'll learn throughout the institute

Gateways are changing the face of science!

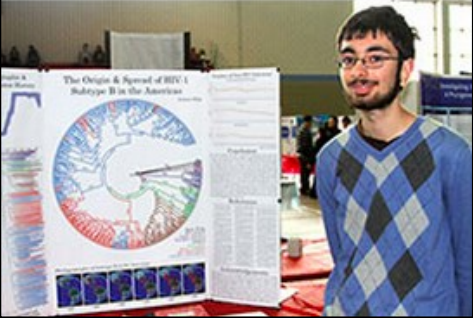


I-TASSER
Protein Structure & Function Predictions

(The server completed predictions for 381509 proteins submitted by 92441 users from 136 countries)
(The template library was updated on 2018/02/21)

Budding Scientist Wins State Fair Prize Using CIPRES Science Gateway

10th Grader Creates Timeline, Map of How HIV Spread



nature International weekly journal of science

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NATURE | LETTER

日本語要約

New deep-sea species of *Xenoturbella* and the position of Xenacoelomorpha


Greg W. Rouse, Nerida G. Wilson, Jose I. Carvajal & Robert C. Anderson

Affiliations | Contributions | Corresponding author

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National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230

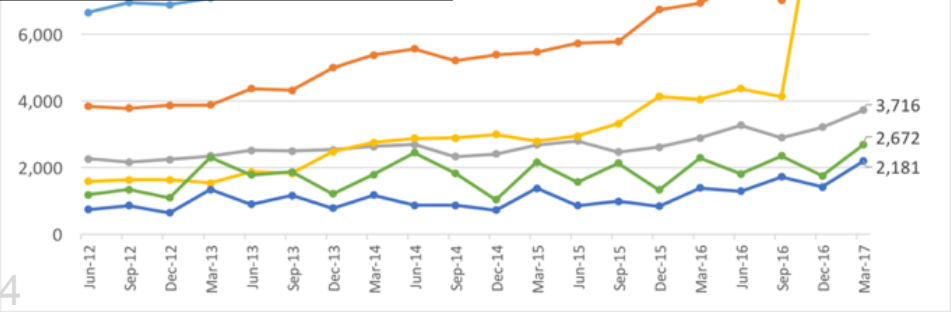
Contributor to BRAIN Initiative

NSF 14-044

Dear Colleague Letter: BRAIN EAGERs to Enable Innovative Neurotechnologies to Reveal the Functional and Emergent Properties of Neural Circuits Underlying Behavior and Cognition

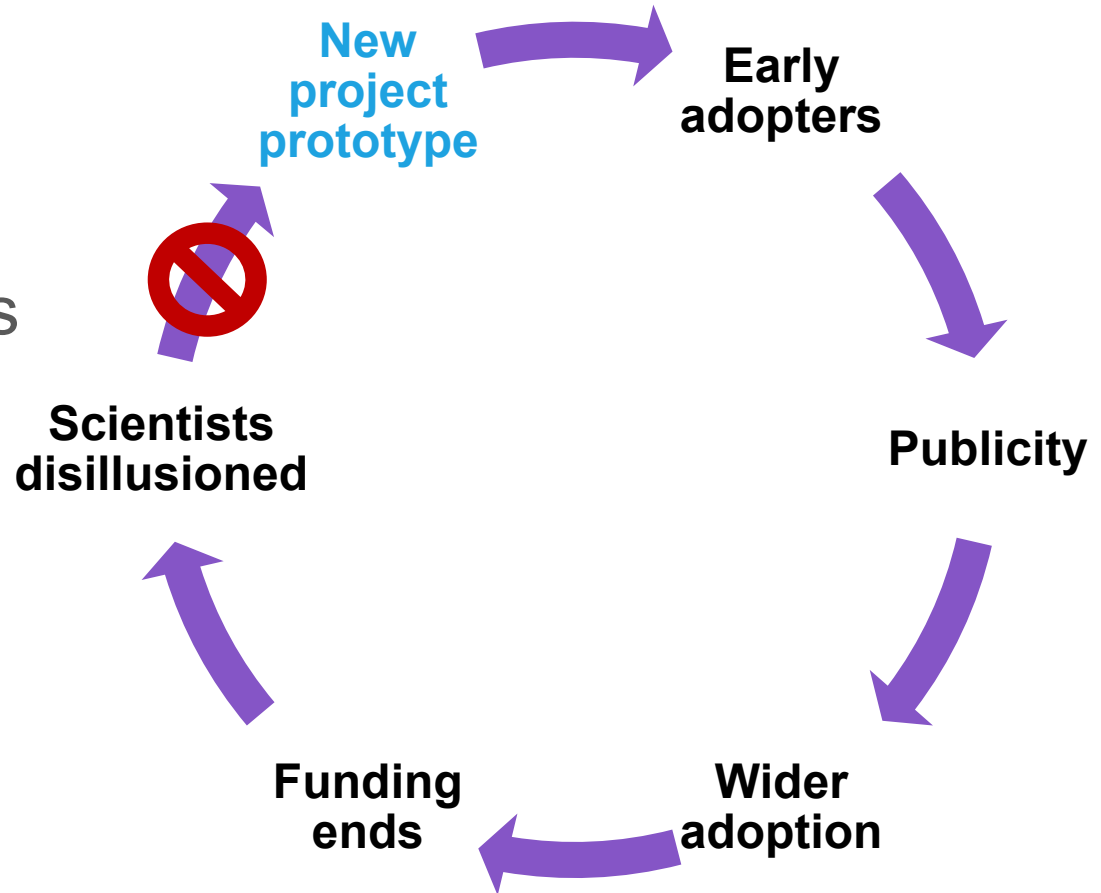
Date: March 7, 2014

This Dear Colleague Letter is aimed at identifying opportunities to leverage and synthesize technological and conceptual innovation across disciplines and scales to accelerate progress toward an integrated understanding of neural circuits in behavior and cognition, or more simply “catching circuits in action”. The neuroscience research community and specialists in other areas including, but not limited to genetics, physiology, synthetic biology, engineering, physics, mathematics, statistics, behavior and cognition are encouraged to work across disciplines to develop new approaches and neurotechnology focused at understanding the properties of circuits that underlie behavior and/or cognition in any organism. Projects that take advantage of existing DBI investments in informatics, computing and other infrastructure, such as the [Neuroscience Gateway](#), in novel ways are also eligible.



But, gateways could be even more successful

- Developers typically
 - work in isolation
 - must bridge to variety of resources
 - need building blocks in order to focus on higher-level functionality
 - struggle to secure sustainable funding



NSF commits \$15M to Science Gateways Community Institute in 2016

Press Release 16-088

NSF commits \$35 million to improve scientific software

Science Gateways Community Institute

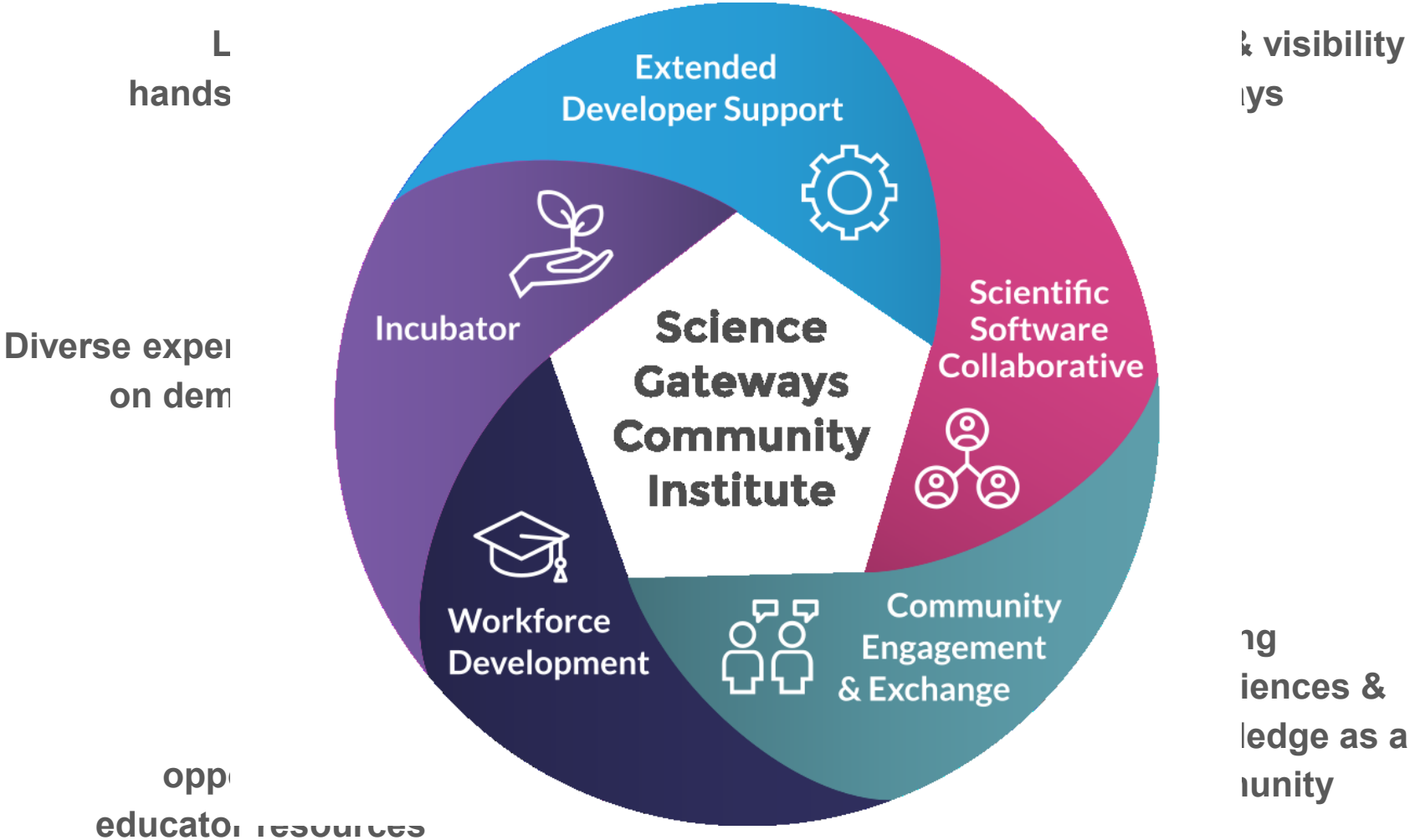
The second award, led by the University of California, San Diego, establishes the **Science Gateways** Community Institute, a multi-institutional consortium that will increase the capabilities, number and sustainability of **science gateways**. Gateways are mobile or web-based applications that provide broad access to the nation's shared cyberinfrastructure to scientists and citizens alike.

"Gateways foster collaborations and the exchange of ideas among researchers and can democratize access, providing broad access to resources sometimes unavailable to those who are not at leading research institutions," said Nancy Wilkins-Diehr, associate director of the San Diego Supercomputer Center and principal investigator for the project. "Sharing expertise about basic infrastructure allows developers to concentrate on the novel, the challenging, and the cutting-edge development needed by their specific user community."

We were one of the first two long-term centers of excellence funded by the NSF.

SGCI: helping researchers build better gateways

Design based on data from a 5000-person survey



Workforce Development

A critical piece of SGCI's plans



A successful Science Gateways Software Institute will provide leaderships to:

- *Educate the next generation of researchers to enable them to create the software cyberinfrastructure required to both advance fundamental understanding of science gateways and enable researchers to address the grand challenge problems of the future.*
- **NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines**, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

2015 NSF Solicitation 15-553

Dr. Linda Hayden and ECSU were my first choice to lead Workforce Development

- Demonstrated success
- Demonstrated connection to the community



Supporting the next generation of gateway developers

- Academic Year Training
- 4-week Coding Institute
- 8-week Internships
- Specialty training at ADMI, NOBBChE, ACM, campuses
 - For students and faculty
- Young Professionals program
- Student travel support to attend
 - Gateways conference
 - PEARC conference
 - Hackathons
 - Additional training events

Longer term, working with campuses to develop career paths is high priority.

Association of Computer/Information Sciences and Engineering Departments at Minority Institutions (ADMI)
National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBBChE)

American Chemical Society (ACM)

Practice & Experience in Advanced Research Computing (PEARC)

We look forward to working with all of you as future gateway developers

Wishing you a very productive time at the coding institute. I look forward to meeting you at PEARC18 or Gateways 2018.

www.sciencegateways.org