



Edgy Science II: From NSF Physics Frontier Centers



NSTA '09 New Orleans, LA

<http://kicp.uchicago.edu/nsta09>

From brains to the Big Bang, take a crash course in forefront science with the NSF Physics Frontier Centers, including hands-on activities and summer opportunities

Presenters:

- Randall H. Landsberg (**KICP** - University of Chicago)
- Kenneth W. Cecire (**COSM** - Hampton University)
- Christopher Smith (**CTBP** - UC San Diego)

Abstract

Edgy Science 2

Description: From brains to the Big Bang, take a crash course in forefront science with the NSF Physics Frontier Centers including hands-on activities and summer opportunities.

Type of session: presentation

Presentation length: 60_minutes_only

Science area: physics_physical_science

High school: checked

College: checked

Informal education: checked

Summary of Proposal

My session will address my chosen National Standard by: Providing real world examples of scientific inquiry in current research projects (e.g., observing the evolution of the universe), specific emerging science content, and by demonstrating ***that there are still discoveries to be made.***

Session Abstract:

Physics Frontier Centers (PFCs) are literally supposed to rewrite the laws of physics. These interdisciplinary research centers span a broad range of superlative science: the coldest, fastest, hottest, biggest and smallest; and span the globe (e.g., South Pole). Join us for some science headline news, a series of demos and activities grounded in the classroom but based on the latest in cosmology, biophysics, particle physics, and plasma physics (e.g., [a fortune cookie collider and virtual cells](#)); and a smorgasbord of opportunities for you and your students: distance learning (including alternative media such as YouTube and podcasts), research internships, outreach programs, visiting science shows, and field tested activities that integrate science on the edge.

Outline

- Brief Introduction - National Science Foundation (NSF) Physics Frontier Centers (PFCs)
 - Science News
 - Resources
 - Activities
- } Each Center
- Sequence
 - Randall H. Landsberg
Kavli Institute of Cosmological Physics (**KICP**)
 - Kenneth W. Cecire (**COSM**)
Center for the Study of the Origin & Structure of Matter
 - Christopher Smith (**CTBP** - UC San Diego)
Center for Theoretical Biology



NSF Program Solicitation NSF 01-1112

The successful Physics Frontier Center will demonstrate:

- the potential for a profound advance in physics;
- creative, substantive activities aimed at enhancing education, diversity, and public outreach;
- potential for broader impacts, e.g., impacts on other field(s) and benefits to society;
- a synergy or value-added rationale that justifies a center-like approach.

Transformative, BIG, National + Education & Outreach