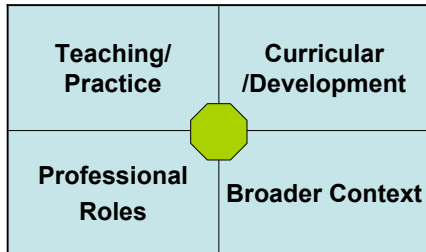


Preparing Future Physicists 2007



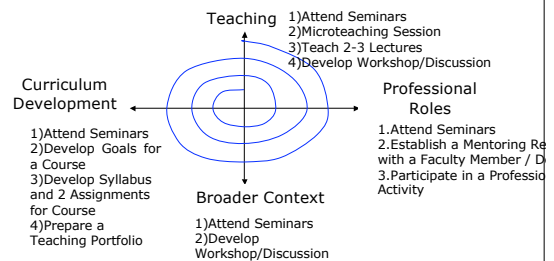
What do physicists do?

- Research
- Teaching
- Service
- Grant writing
- Management
- Talks

What do grads do

- Research

PFP structure



Why's education important?

The [National] Commission [on Mathematics and Science Teaching for the 21st Century] is convinced that **the future well-being of our nation and people depends not just on how well we educate our children generally, but on how well we educate them in mathematics and science specifically**"

-- Before It's Too Late - pg. 4 - Sept 2000

From both sides of the aisle

In March 2001, the U.S. Commission on National Security/21st Century on which I served warned that **the crisis in scientific research and education is the second greatest threat facing American national security**. In fact, the 14 bipartisan members unanimously agreed that the 'inadequacies of our systems of research and education pose a greater threat to U.S. national security over the next quarter century than any potential conventional war that we might imagine.' The Commission went on to assert that **only a nuclear or biological weapon released in an American city [is] a greater threat**

-Newt Gingrich, AEI
open letter to Congress, May 2005

How are we doing: TIMSS

AVERAGE PHYSICS PERFORMANCE OF ADVANCED SCIENCE STUDENTS
IN ALL COUNTRIES

NATIONS WITH AVERAGE SCORES SIGNIFICANTLY HIGHER THAN THE U.S.	
NATION	AVERAGE
NORWAY	581
SWEDEN	573
(RUSSIAN FEDERATION)	545
(DENMARK)	534
(SLOVENIA)	523
(GERMANY)	522
(AUSTRALIA)	518
(CYPRUS)	494
(LATVIA)	488
SWITZERLAND	488
GREECE	486
(CANADA)	485
FRANCE	466
CZECH REPUBLIC	451

NATIONS WITH AVERAGE SCORES NOT SIGNIFICANTLY DIFFERENT FROM THE U.S.	
NATION	AVERAGE
(AUSTRIA)	435
(UNITED STATES)	423

NATIONS WITH AVERAGE SCORES SIGNIFICANTLY LOWER THAN THE U.S.	
NATION	AVERAGE
NONE	

INTERNATIONAL AVERAGE = 501

<http://timss.bc.edu>

Why's this important?

The [National] Commission [on Mathematics and Science Teaching for the 21st Century] is convinced that the future well-being of our nation and people depends not just on how well we educate our children generally, but on how well we educate them in mathematics and science specifically" –

Before It's Too Late – pg. 4 - Sept 2000

Physics Education Research and Contexts of Student Learning in Physics

Colloquium
Department of Physics
University of Colorado at Boulder
19 Sept 2007



Noah Finkelstein
Physics Department
University of Colorado at Boulder
noah.finkelstein@colorado.edu



Survey of UCSD and CU PFP programs (2002-2006)

Question	PFP	US grads ^a
What do you really hope to be doing 10 years from now?		
<i>Research tenure-track faculty</i>	38%	41% ^a
<i>Faculty at liberal arts or community college or other teaching</i>	31	13 ^a
<i>Research in industry, national lab or university setting</i>	15	37 ^a
<i>Private consulting or other self-directed venture</i>	4	3 ^a
<i>Something not on this list</i>	12	6 ^a
What do you really think you're going to be doing in 10 years?		
<i>Research tenure-track faculty</i>	16	
<i>Faculty at liberal arts or community college or other teaching</i>	44	
<i>Research in industry, national lab or university setting</i>	20	
<i>Private consulting or other self-directed venture</i>	4	
<i>Something not on this list</i>	16	
What would PFP ideally do for you (besides feed you pizza)?		
<i>Provide a diversity of ideas for my future</i>	34	
<i>Help me plot a course to faculty-hood</i>	12	
<i>Provide ideas for being a more effective educator</i>	27	
<i>Bring awareness of social issues that physicists can address</i>	19	
<i>Teach me the skills I will need as a faculty-person</i>	8	

The Context of Grad School

What do PhD's in physics do?
Where do they go?

Physics X...

Pre-Comps][?

Go to Physics X

Tuesdays 3:30p
here?

Interested in Informal Science Ed?

- New Community Partnership programs
- PER / JILA / Physics
- Sept 26, 3pm
- Dr. Laurel Mayhew

per.colorado.edu/pfpp

Write down your top 3 items you'd like to see in PFP:

e.g. teaching (practice, theory, research)
grant writing
job searching
the grad situation at CU (comps, committees, and the like)
academic positions (R1, teaching, mixed)
what jr. faculty life is like
what postdoc life is like
community partnerships (outreach, service, etc)

Industry

ROAD TRIPS!!!!

...