A QUESTION…

Where do physics students go after earning a bachelor’s degree?
Status of Physics Bachelor's One Year After Degree, Classes of 2011 & 2012 Combined

Graduate Study

- Physics & Astronomy: 36%
- Other Fields: 22%
- Employment: 38%
- Unemployment: 4%

(N=4,307)

http://www.aip.org/statistics
Field of Graduate Study for Physics Bachelor’s One Year After Degree, Classes of 2011 & 2012 Combined

- Physics or Astronomy: 61%
- Engineering: 18%
- Other: 21%

(N=2,472)

http://www.aip.org/statistics
Status of Physics Bachelor’s One Year After Degree, Classes of 2011 & 2012 Combined

Graduate Study

<table>
<thead>
<tr>
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(N=4,307)

http://www.aip.org/statistics
Initial Employment Sectors of Physics Bachelor’s, Classes of 2009 & 2010 Combined

- Private Sector: 53%
- College & University: 13%
- High School: 11%
- Civilian Gov’t, National Lab: 10%
- Active Military: 8%
- Other: 5%

http://www.aip.org/statistics
Field of Employment for Physics Bachelor’s in the Private Sector, Classes of 2009 & 2010 Combined

- Engineering: 32%
- Computer or Information Systems: 21%
- Other STEM: 16%
- Physics or Astronomy: 5%
- Non-STEM: 26%

STEM refers to natural Science, Technology, Engineering, and Mathematics.

http://www.aip.org/statistics
TWO MORE QUESTIONS…

Where will your students go after earning a bachelor’s degree?
What is your role in preparing students for careers?
WHY PAY ATTENTION TO CAREER PREPARATION?

• Recruitment
Students choose (or don’t choose) particular majors for a variety of reasons.

• Retention
Physics is good preparation for a variety of career paths.

• Relevance
Students should be (and want to be) equipped for the path they choose.
About the Project

GOAL

Increase the **number** and **diversity** of physics graduates joining the STEM workforce after the bachelor’s degree by

- Equipping physics departments with tools for better preparing physics undergraduates for the STEM workforce
- Equipping students with tools to better prepare themselves to enter the STEM workforce
**APPROACH** (Inspired by SPIN-UP)

- Identify diverse physics departments graduating students that enter the STEM workforce and are intentional about career preparation
- Discern effective practices for career preparation through site visits of the departments
- Compile and synthesize data to determine trends and common practices
- Disseminate findings through national meetings, regional workshops, online resources

**SITE VISITS**
- Carthage College
- College of Charleston
- Gettysburg College
- Miami Univ. (Ohio)
- Univ. of California at Davis
- Univ. of Washington
- Univ. of Wisconsin Eau Claire
- Univ. of Wisconsin La Crosse
COMMON FEATURES: CURRICULAR

Note: Common features can look very different in different departments.

- Varied and high-quality lab courses
  - Varied in terms of topic, structure, equipment, interfaces

- Research opportunities readily available
  - May be on or off campus, required or not required

- Curricular flexibility
  - Options include multiple degree offerings, majors, minors, concentrations

- Building communication skills incorporated in undergraduate physics experience
  - Includes verbal and written exercises for different
COMMON FEATURES: EXTRACURRICULAR

• Faculty and staff commitment to the success of **all students**
  • Regardless of career ambition or level of academic achievement

• Strong community of students
  • Where information is passed down and students feel valued

• Opportunities for physics majors to be involved in outreach activities
  • Strengthens connections, communication skills, leadership, team work, 21st century skills

• Connections with alumni
  • Who become a source of information and feedback for faculty members and students

• Relationship with career services professionals
  • Who become a source of information and expertise for faculty members and students

• Mentoring and advising of physics majors in accordance with their interests and goals
  • Addresses retention and recruitment and increases self knowledge of skills and opportunities
SOME OBSERVATIONS

- Physics students have a particularly difficult time assessing their employable skills and need to learn how to identify and articulate them.

- Students encounter obstacles when searching for jobs, but these can be directly addressed and overcome.

- Optimal progress in career preparation efforts involves faculty and staff members, administrators, students, and career services personnel, but positive results can be obtained with just a few champions.
AIP CAREER PATHWAYS PROJECT RESOURCES

Faculty and Administrators

Students

Career Professionals

Resources

Equipping Physics Majors for the STEM Workforce

Careers Toolbox

FACT SHEET
Connecting Physics Students To Career Opportunities
Speaks to...

- The spectrum of activities included in each common feature
- Why those activities may affect success in preparing students for the STEM workforce
- Specific activities that faculty members may want to consider initiating or expanding

Opportunities for faculty

- Use findings as a foundation for recruiting, retention, and mentoring
- Provide ideas for departmental initiatives
Resources

STUDENT TOOLBOX

Careers Toolbox
for Undergraduate Physics Students & their Mentors

Speaks to...

- Exploring Options, Finding Opportunities
  Common Job Titles • Informational Interviews
- The Missing Link
  Knowing and Articulating Your Skills
- Getting to Work
  Effective Job Searching • The Resume • Writing an Effective Cover Letter • Acing the Interview

How it is being used...

- SPS-led workshops
- Physics departments seminars

Opportunities for faculty

- Source of curricular material for seminar classes
- Source of activities for SPS chapters / departments
- Reference for students seeking help and advice
CAREER SERVICES

FACT SHEET

FACT SHEET
Connecting Physics Students To Career Opportunities

Tips for Helping Physics Students Find Meaningful Employment

How it is being used...
- Reference material for career offices, advisors, students, parents

Opportunities for faculty
- Reason to meet career services staff
- Reference to provide parents and students

Speaks to...
- What happens after the physics degree
- What physics graduates are qualified to do
- Challenges faced in the job search
- Tips for overcoming these challenges
Put these on your shelf…

Faculty and Administrators

Equipping Physics Majors for the STEM Workforce

Students

Careers Toolbox

For Undergraduate Physics Students and Their Mentors

Career Professionals

FACT SHEET

Connecting Physics Students to Career Opportunities

Put and this on your wall…
And remember...

Look at the data. More than half of your students will not go on to graduate school in physics or astronomy.

Don’t discount the value of a student who comes in and wants to do something else. Physics-trained students contribute in really valuable ways to the wider community.

We have resources for you!

www.spsnational.org/cup/careerpathways/
AIP Career Pathways Project

www.spsnational.org/cup/careerpathways/

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