Dream Jobs and Desired Career Paths of Physics Majors

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My Dining Room (Virtual), North Carolina

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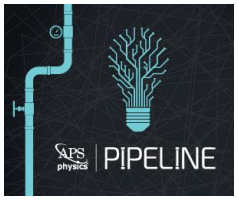
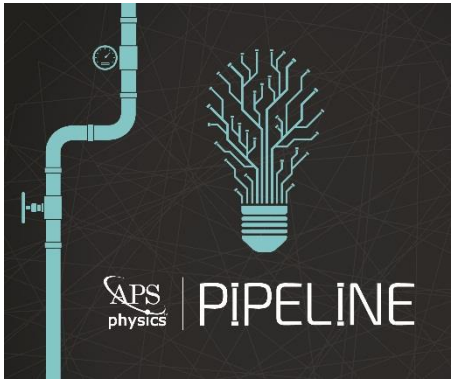


HIGH POINT UNIVERSITY

Stout School of Education

APS PIPELINE Network

- Six member institutions: Loyola University Maryland, Rochester Institute of Technology, Wright State, UC Denver, and George Washington University.
- Advised by experts from established physics entrepreneurship programs (e.g. Carthage College, Case Western, Kettering University)



- Goals are:
  - to **deliver tested PIE curriculum** to a wider cohort of practitioners.
  - to **assess of effects of PIE implementation** on student and faculty attitudes towards innovation and entrepreneurship, and **examine barriers** to PIE implementation
  - to **build a community** of expert practitioners who can mentor other institutions.
- Activities are varied in scope and resources needed; institutions varied in culture and resources available.

www.aps.org/programs/education/innovation/index.cfm

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Diverse Physics Career Paths Taken

- Over 40% of physics majors entered the workforce after graduating (B
- M these worked in the private sector, often in engineering or computer science (Nicholson, 2008)

How are we helping physics majors prepare for these careers?

*Adapted from Mulvey and Pold (2015)

The PIPELINE Student Survey

Q5 If you were to describe being a physics major to a senior in high school who was considering majoring in physics,

what would you tell them about **being a physics major** to help with their decisions? (approx. 3-5 sentences)

_____

_____

_____

_____

_____

Q7 Which of the following field(s) are you interested in pursuing after you graduate? *Please select all that apply.*

- ☐ Astronomy/ Astrophysics (1)
- ☐ Business/ Entrepreneurship (2)
- ☐ Computer/ Information systems (3)
- ☐ Data analysis (4)
- ☐ Engineering (5)
- ☐ Medicine (6)
- ☐ Physics (7)
- ☐ Teaching/ Education (8)
- ☐ Other (9) _____
- ☐ I do not know what field(s) I am interested in (10)

Q8 9. Which of the following sector(s) are you interested in after you graduate (post-BS)? *Please select all that apply.*

- ☐ Graduate school (please describe a specific field/program you are interested in if you have one) (1) _____
- ☐ Private sector/ Industry STEM (2)
- ☐ Private sector/ Industry non-STEM (3)
- ☐ Civilian Government/National lab (4)
- ☐ College/ University (permanent employment, not including graduate school) (5)
- ☐ K-12 Education/ Teaching (6)
- ☐ Military (7)
- ☐ Other: (8) _____
- ☐ I do not know what sector(s) I am interested in (9)

*

Q9 11. Describe your dream job. Where would you be working? What would you be doing there? Who would you be working with? (if you do not have a specific dream job, describe your dream plans in general terms) (approx. 3-5 sentences)

_____

_____

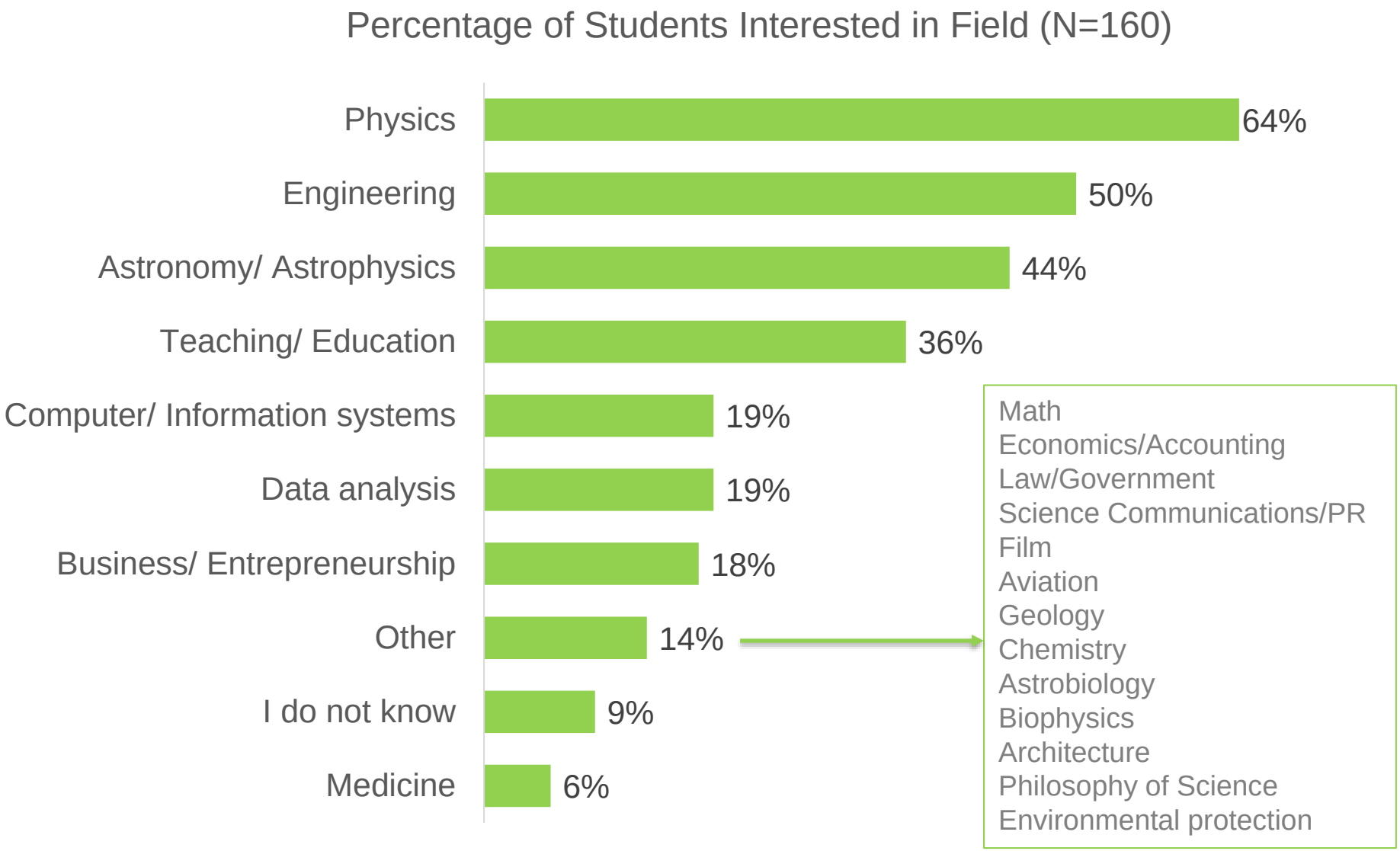
Participants (so far)

- 160 student participants who responded to career questions on the PIPELINE survey
- from 12 colleges and universities
- in the Northeast, Midwest, South, and Southeast regions of the U.S.

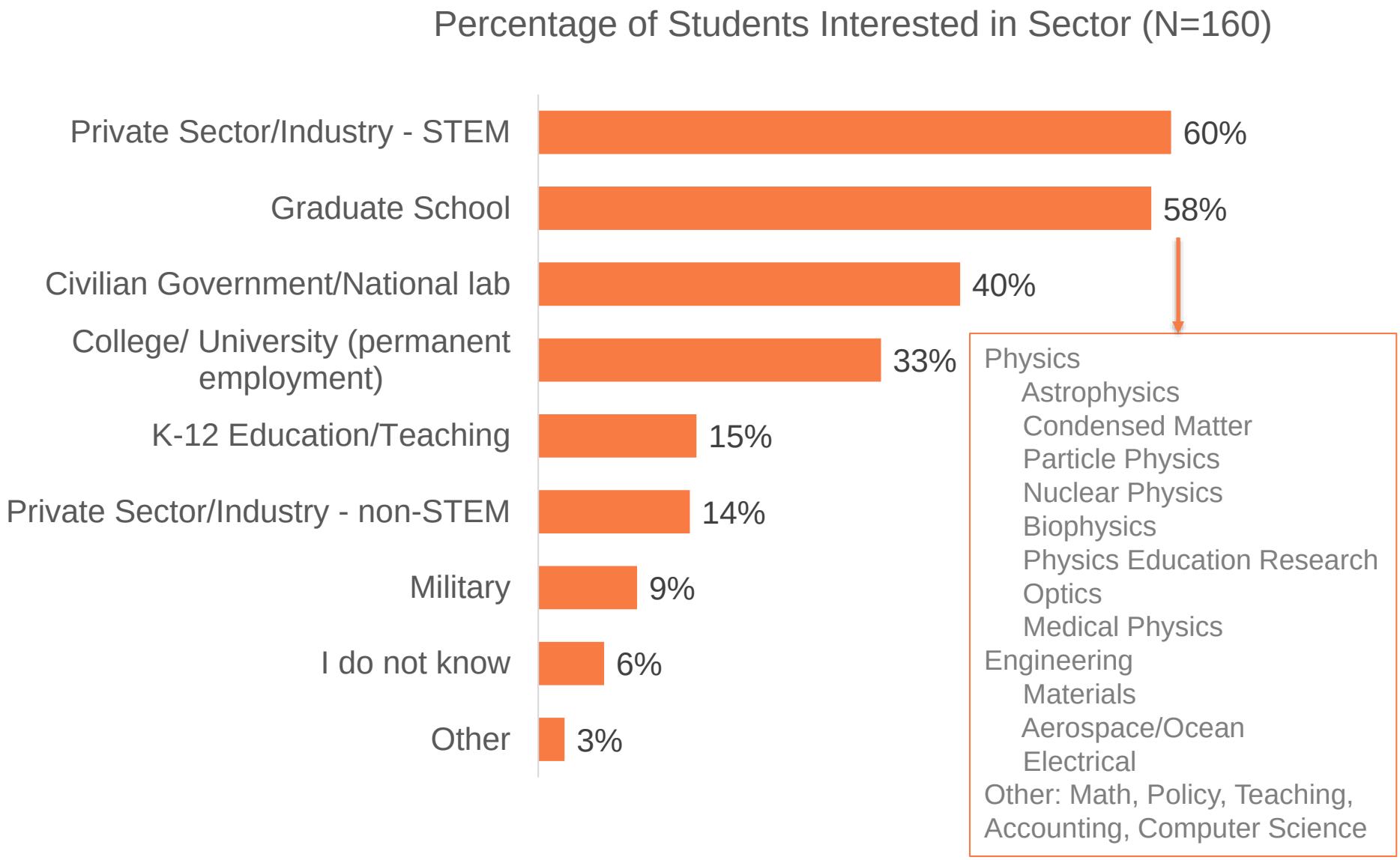
Research to Identify Career Plans

- What fields are physics majors interested in pursuing?
- In what sectors?
- What are physics majors' dream jobs?
- How can we better support physics majors in reaching their career goals?

Fields Physics Majors are Interested in Pursuing



Sectors Physics Majors are Interested in



Dream Jobs

Physics majors describe dream jobs based on:

- Ideal location/ sector
- Social/culture requirements
- Hands-on, application-focus
- Specific job or research interests (especially research and space exploration!)
- Variety of problems to solve that have a strong impact
- Time and Money considerations

Dream Jobs – Supportive Collaborative Culture

Contributions - “I would be working in a place where my contributions are seen as such and where I am respected for being me, not for being a copy of all others before me.”

Collaboration - “I would be working with peers at the top of their field and we would collaborate and get along well.”

Teamwork - “It would ideally be team oriented and involve creative projects.”

Leadership - “I'd love to someday lead a research team on physics or astrophysics-related projects.”

Dream Jobs – Emphasis on Research

*Approximately 70 physics majors emphasized research as part of their dream jobs

“I would really like the freedom to explore my own research interests, whether in a university or in a government funded lab.”

“Research and development: being given a project start and ending point and asked to bridge the start and end in whatever way.”

“I enjoy working with data and doing research, but I also love teaching and would love a way to combine the two if possible. Working with my hands is also a plus.”

Dream Jobs – Problem Solving with Impact

“My dream job would be leading a small group of people in solving a particular problem, generally more of a long-term problem...”

“I would like to work in a lab but not be researching the same project for years, changing projects now and again so I can stay interested in my work.”

“Ideally, I would apply my physics degree to a medical environment or, generally, a place where I can help others.”

“I know I want to do something involving physics as well as helping people in some way.”

Career Support for Physics Majors

- Physics majors are interested in applying their major to a variety of fields

- Many students are int… …te sector

What can we do to help our majors pursue their dream jobs?

- Dream jobs are often social, hands-on, applied, and involve a variety of interesting problems to solve

- Traditional physics courses are not enough to prepare students for their future careers

Understanding physics majors' career goals…

…helps educators provide better support toward these goals!

Have your students take the PIPELINE Survey!

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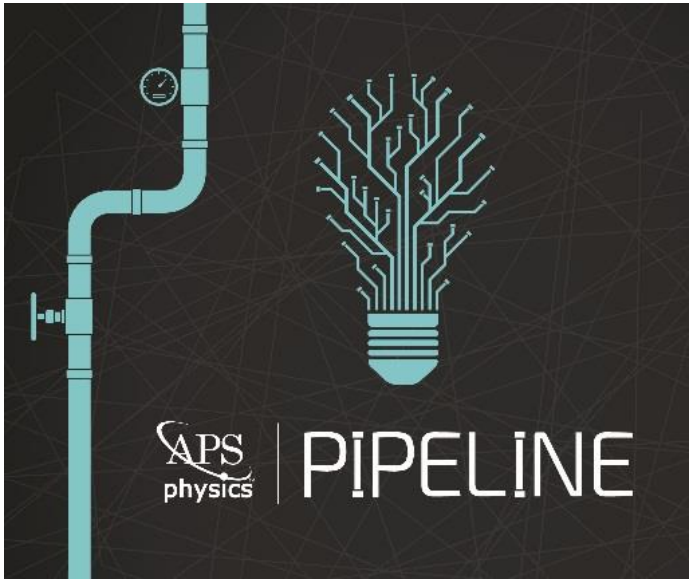

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