You Have Options

Q: What can you do with a physics degree?
A: Get a PhD and become a physics professor OR...

- 1 out of 12 US physics bachelor’s receive an exiting physics or astronomy master’s degree.
- 1/2 enter graduate studies.2
- Most transfer to other institutions to earn a physics PhD.
- Others receive degrees in related fields such as materials science, engineering, medical physics, and mathematics.
- 1/2 continue with graduate studies.2
- About half work in the private sector virtually all in STEM.
- The largest portion of exiting master’s degrees work in the field of new engineering.
- Other common employment sectors for exiting master’s degree recipients include colleges and universities, high schools, and civilian government.

Within one year of earning a physics PhD...
- 1 out of 6 US physics bachelor’s receive a physics or astronomy master’s degree.
- A dissertation in physics takes an average of 6.7 years.
- Most PhD students are fully supported by teaching or research assistantships or fellowships.

Within one year of earning a physics PhD...2
- 1/2 accept a temporary position.2
- 1/4 accept another temporary position most are in physics teaching.
- In a median starting salary salary these students earned employed in the private sector.

Over 8,400 physics bachelor’s degrees were awarded in the class of 2015-16.

About one-third...
- Enroll in graduate programs other than physics or astronomy or in professional degree programs.
- Are in engineering, computer engineering, or in professional degree programs.
- About 1/3 of those enrolled in graduate programs have a minor in physics.
- About 1/3 of those enrolled in graduate programs have a minor in computer science.
- About 1/3 of those enrolled in graduate programs have a minor in mathematics.
- About 1/3 of those enrolled in graduate programs have a minor in electrical engineering.
- About 1/3 of those enrolled in graduate programs have a minor in physics.
- About 1/3 of those enrolled in graduate programs have a minor in computer science.
- About 1/3 of those enrolled in graduate programs have a minor in mathematics.
- About 1/3 of those enrolled in graduate programs have a minor in electrical engineering.

About half of those who earn a bachelor’s degree...
- Are female.
- Are minority.
- Are first-generation.
- Are from low-income families.

Within one year of earning a physics bachelor’s degree...1
- 30% attend graduate school in physics or astronomy.
- 20% enroll in graduate programs other than physics or astronomy or in professional degree programs.

One-third of those who earn a physics bachelor’s degree...
- Are female.
- Are minority.
- Are first-generation.
- Are from low-income families.

Add to the mix...
- Foreign students coming to the United States for a graduate degree, students who earned bachelor’s degrees in another field that lead to a graduate degree in physics, and students who majored in physics but earned a bachelor’s degree in a different academic discipline.

Of those who start graduate school in physics or astronomy...
- About 1/3 enrol in a PhD program.
- Most can fully support themselves.
- A student who starts salary salary upon completing their graduate degree.

References and Notes
The following data was compiled from the National Center for Education Statistics’ Integrated Postsecondary Education Data System (IPEDS) surveys, US Census Bureau, and the American Institute of Physics.

Learn more at the Career Toolbox website:
www.spsnational.org/careerstoolbox
Occupation vs. College Degree

Which STEM BA/BS end up with STEM job?

In which careers do Physical Science BA/BS end up?

https://www.census.gov/dataviz/visualizations/stem/stem-html/
What do Career Physicists Do?

Highest Degree

BS Physics
- Life Science: 1%
- CS/Math: 13%
- Physical Sci: 14%
- Engr: 14%
- S&E Manager: 8%
- Technician: 9%
- Teach: 3%
- Other: 38%

BS (78,000)

Highest Degree

PhD Physics
- Physical Sci: 53%
- CS/Math: 8%
- Life Science: 6%
- Other: 14%
- S&E Manager: 3%
- Engr: 11%
- Teach: 2%
- Technician: 3%

PhD (64,000)

Highest Degree

MS Physics
- Physical Sci: 26%
- CS/Math: 17%
- Engr: 13%
- S&E Manager: 7%
- Technician: 7%
- Teach: 3%
- Other: 20%

MS (33,000)

### Typical Job Titles 1 yr Post B.S.

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<thead>
<tr>
<th>Engineering</th>
<th>Research &amp; Technical</th>
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<tbody>
<tr>
<td>Systems Engineer</td>
<td>Research Assistant</td>
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<tr>
<td>Electrical Engineer</td>
<td>Research Associate</td>
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<tr>
<td>Design Engineer</td>
<td>Research Technician</td>
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<tr>
<td>Mechanical Engineer</td>
<td>Lab Technician</td>
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<tr>
<td>Project Engineer</td>
<td>Lab Assistant</td>
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<tr>
<td>Optical Engineer</td>
<td>Accelerator Operator</td>
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<tr>
<td>Manufacturing Engineer</td>
<td>Physical Sciences Technician</td>
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<tr>
<td>Manufacturing Technician</td>
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<tr>
<td>Laser Engineer</td>
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<td>Associate Engineer</td>
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<tr>
<td>Technical Services Engineer</td>
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<table>
<thead>
<tr>
<th>Education</th>
<th>Computer Hardware / Software</th>
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<tbody>
<tr>
<td>High School Physics Teacher</td>
<td>Software Engineer</td>
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<tr>
<td>High School Science Teacher</td>
<td>Programmer</td>
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<tr>
<td>Middle School Science Teacher</td>
<td>Web Developer</td>
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<tr>
<td>Substitute Science Teacher</td>
<td>IT Consultant</td>
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<td></td>
<td>Systems Analyst</td>
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<td></td>
<td>Technical Support Staff</td>
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<td>Analyst</td>
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Typical Job Skills Utilized

Knowledge and Skills Regularly Used by New Physics Bachelors Employed in the Private Sector, Classes of 2015 & 2016 Combined

- Work on a Team
- Solve Technical Problems
- Technical Writing
- Design & Development
- Perform Quality Control
- Use Specialized Equip.
- Programming
- Manage Projects
- Knowledge of Phys. or Ast.
- Simulation or Modeling
- Advanced Math
- Work with Customers
- Manage People
- Manage Budgets

Employment in Engineering vs. Employment in Computer Science or Information Technology
Percent regularly using knowledge or skill
What resources are available for my job search?

- American Physical Society Careers Page
  - http://www.aps.org/careers/
- Society of Physics Students Careers Page
  - https://www.spsnational.org/career-resources
- AAAS (Science Magazine) Career Resources
  - http://www.sciencemag.org/careers/career-resources
- UW Career and Internship Center
  - http://careers.uw.edu/
- Faculty, Alumni, others in area
  - Today’s Career Panel
Career Panel

• **Cliff Slaughterbeck**, Senior Manager, System Design Engineering at the Allen Institute for Brain Science (employer)

• **Marie Scott**, Assistant Project Manager at Arcadis, leading global natural and built asset design and consultancy firm.

• **Arielle Leon**, B.S Physics/Astronomy UW 2012: System Design Engineer at the Paul Allen Institute for Brain Science

• **Patrick Chidsey**: Associate Director at the UW's Career Center
Typical Starting Salaries

Figure 6. Typical Starting Salaries for New Physics Bachelors

Figure includes only bachelors in full-time, newly accepted positions. Typical salaries are in the middle 50% i.e., between the 25th and 75th percentiles. STEM refers to positions in natural science, technology, engineering and math. Regularly solving technical problems refers to respondents who selected “Daily”, “Weekly”, or “Monthly” on a four-point scale that also included “Rarely or Never” when asked how frequently they solved technical problems in their positions.
SPS Jobs | jobs.spsnational.org
SPS Jobs has job listings appropriate for students seeking employment with a bachelor’s degree in physics.

Physics Today Job Resources | www.physicstoday.org/jobs/career_resources SPS Career Resources | www.spsnational.org/career-resources
Visit this Society of Physics Students site for career-related information, including profiles of people working in different careers, advice, and links to related resources.
Click on a state to see a list of some of the employers that hired physics bachelor’s recipients recently in that state.

This link will take you to a report titled, “Physics Bachelor’s Initial Employment.” Figure 4 in this report shows the skills used by physics bachelor’s recipients in their first job. Use these lists when you are thinking about the knowledge and skills you have. Make sure these are highlighted in your resume.

APS Careers Website | www.aps.org/careers
Access a host of career resources at the APS Careers website, including links to the APS Webinar Archive, Career Workshops from annual meetings, links to a professional development guide, and informa on on Student Travel Awards and Future of Physics Days events at APS national meetings, specifically geared toward undergraduates.