Careers in Physics

Physics is a flexible degree that gives you a first-principles and fundamental understanding of nature, strong math and analytical skills, and technical expertise...and that will prepare you for many different careers!



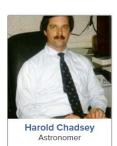
Professor; Physicist







Physicist













Jason Coleman Senior Programmer





Ice Scientist
Katharine looks at what's going
on at the Eart...



Science JournalistAlok is a science journalist for the Guardian n...





Coastal Scientist
Sally's job is to predict what will happe...



Laser Fusion Scienti...
Kate uses powerful lasers in an attempt to buil...



Material Scientist
Rachel uses ultrasound to
ensure your safety on...



Particle Physicist
Ben works on the T2K
experiment, doing research...



Sound Engineer
Tony works as a sound system
engineer for mus...



Satellite EngineerMaggie leads a team of scientists and engineers...

ATTENTION PHYSICS STUDENTS:

You Have Options



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

What comes after the "or" is not widely known in many physics departments, even though data show that less than a third of physics bachelor's degree recipients enroll in a physics or astronomy graduate program within one year of graduating. People with undergraduate degrees in physics pursue a variety of fascinating, fulfilling, and well-paying careers. This is evidenced by decades of data collected by the Statistical Research Center at the American Institute of Physics. Illustrated below are the common paths of physics bachelor's recipients based on the most recent data. Unless otherwise indicated, all data are for graduates of US physics programs who remain in the United States.



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

- have research experience.2
- · One-third graduate with a double major, many in math.3 · One-tenth start at two-year colleges.4

Within one year of earning a physics bachelor's degree...



20% enroll in graduate programs other than physics or astronomy or

- · About half enter an engineering program; the rest enter programs in math, medicine, education, or another field.⁵
- As a group, physics majors score among the highest of all majors on medical school and law school admission tests (the MCAT and LSAT).6
- Students in professional degree programs are more likely to be self-funded than students in research-based graduate programs, who usually have teaching assistantships, research assistantships, or fellowships,5



- · About 3/4 enroll in a PhD program; the remainder choose a master's degree program.
- Most are fully supported by teaching assistantships, research assistantships, or

Of those who start graduate



~50% enter the workforce.5

Common employment sectors include:

- ~2/3 of those who enter the workforce take jobs in the private sector.
- · Of those that enter the private sector, the large majority hold science, technology, engineering, and math (STEM) positions
- Those in private-sector STEM positions are well compensated, with a median starting salary of about \$57K.

Colleges or universities

· More than half of the students in these positions were employed at the same institution they graduated from. Many work in research or IT.

Civilian government

· The civilian government sector includes national labs. The vast majority of these positions are in STEM fields, many related to defense or energy.

· Physics bachelor's work across all branches of the armed forces. Many work in aviation or nuclear power.

High school teaching

 About a quarter of the high school teachers indicated that their undergraduate degree had a high school physics teaching focus.

The Statistical Research Center does not formally follow the career paths of these individuals, but we hear that they go on to successful careers in engineering, management, education, law, medicine, business, and a variety of other areas.



Foreign citizens coming to the United States for a graduate degree, students who earned bachelor's degrees in another field but vant a graduate degree in physics, and students who earned a physics bachelor's degree in previous academic



~1 out of 6 US physics bachelor's receive a physics or astronomy

- · A doctorate in physics takes an average of 6-7 years.
- Most PhD students are fully supported by teaching or research assistantships or fellowships.5

Within one year of earning a physics PhD..



~1 out of 12 US physics bachelor's receive an exiting physics or astronomy master's degree.

Exiting master's degree recipients are individuals who leave their current department upon receiving a master's degree. Many other students earn an en route master's degree, continuing on to a physics PhD in the same

- · Over half of those who earn exiting master's degrees do so with a specific research focus.5
- · A master's degree in physics usually takes about two years.

For US citizens, within one year of earning an exiting master's degree...



- · About half work in the private sector, virtually all in STEM
- The largest portion of exiting master's working in the private sector are employed in the field of engineering.
- Other common employment sectors for exiting master's include colleges and univer-



- · Most transfer to other institutions to earn a physics PhD.
- Others transfer to programs in related fields such as materials science, engineering, medical physics, and mathematics.



~1/2 accept a temporary position



~40% accept a potentially permanent position.5

- ~3/4 of new PhDs accepting potentially permanent positions are employed in the private sector.
- The median starting salary for new physics PhDs employed in the private sector is \$105K.



- · 45% Private sector
- 43% Academe
- · 6% Other

References and Notes

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- 7. Patrick J. Mulvey and Starr Nicholson, Trends in Physics PhDs,

*Estimate provided by the AIP Statistical Research Center Summer 2014.

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A: Get a PhD and become a physics professor OR ...

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~30% attend graduate school in physics or astronomy.5

- About 3/4 enroll in a PhD program; the remainder choose a master's degree program.*
- Most are fully supported by teaching assistantships, research assistantships, or fellowships.

Of those who start graduate school in physics or astronomy...



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

A record high! Typically...

- Three-fourths of those who earn physics bachelor's degrees have research experience.2
- One-third graduate with a double major, many in math.³
- · One-tenth start at two-year colleges.4

Within one year of earning a physics bachelor's degree...





20% enroll in graduate programs other than physics or astronomy or in professional degree programs.

- About half enter an engineering program; the rest enter programs in math, medicine, education, or another field.⁵
- As a group, physics majors score among the highest of all majors on medical school and law school admission tests (the MCAT and LSAT).6
- · Students in professional degree programs are more likely to be **self-funded** than students in research-based graduate programs, who usually have teaching assistantships, research assistantships, or fellowships.5



~50% enter the workforce.5

Common employment sectors include:

Private sector

- ~2/3 of those who enter the workforce take jobs in the private sector.
- Of those that enter the private sector, the large majority hold science, technology, engineering, and math (STEM) positions.
- Those in private-sector STEM positions are well compensated, with a median starting salary of about \$57K.

Colleges or universities

• More than half of the students in these positions were employed at the same institution they graduated from. Many work in research or IT.

Civilian government

• The civilian government sector includes national labs. The vast majority of these positions are in STEM fields, many related to defense or energy.

Active military

· Physics bachelor's work across all branches of the armed forces. Many work in aviation or nuclear power.

High school teaching

• About a quarter of the high school teachers indicated that their undergraduate degree had a high school physics teaching focus.

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STUDENTS:

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Add to the mix:

Foreign citizens coming to the United States for a graduate degree, students who earned bachelor's degrees in another field but want a graduate degree in physics, and students who earned a physics bachelor's degree in previous academic

years.



~1 out of 6 US physics bachelor's receive a physics or astronomy PhD.*

- A doctorate in physics takes an average of 6–7 years.⁷
- Most PhD students are fully supported by teaching or research assistantships or fellowships.⁵

Within one year of earning a physics PhD...



~1 out of 12 US physics bachelor's receive an exiting physics or astronomy master's degree.*

Exiting master's degree recipients are individuals who leave their current department upon receiving a master's degree. Many other students earn an en route master's degree, continuing on to a physics PhD in the same department.

- Over half of those who earn exiting master's degrees do so with a specific research focus.⁵
- A master's degree in physics usually takes about two years.

For US citizens, within one year of earning an exiting master's degree...



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~1/2 enter the workforce.⁵

- About half work in the private sector, virtually all in STEM fields.
- The largest portion of exiting master's working in the private sector are employed in the field of engineering.
- Other common employment sectors for exiting master's include colleges and universities, high schools, and civilian government.



~1/2 continue with graduate studies.5

- Most transfer to other institutions to earn a physics PhD.
- Others transfer to programs in related fields such as materials science, engineering, medical physics, and mathematics.



~1/2 accept a temporary position

(e.g., a postdoc), primarily at a university or with the government.⁵



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- 3. AIP Statistical Research Center, AIP Physics Trends: Physics Students Have Broad Interests, Spring 2011.
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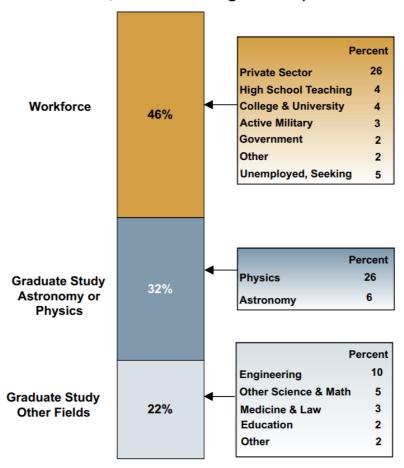


What about your post graduation plans?

- (A) Graduate school in Physics
- (B) Graduate school in another field
- (C) Employment
- (D) Not sure!

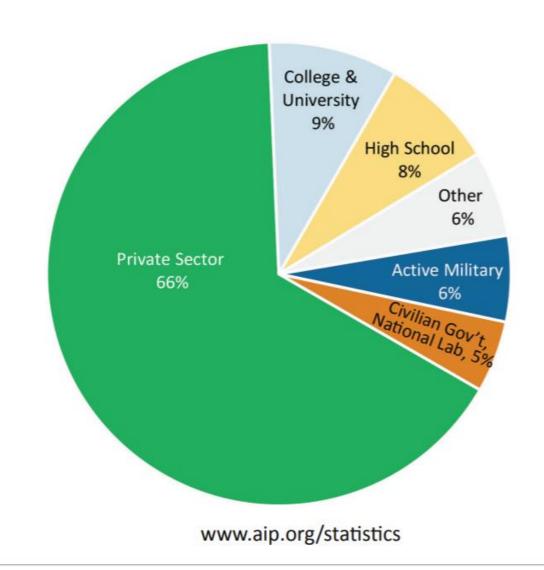
Physics Bachelors 1 Year Later

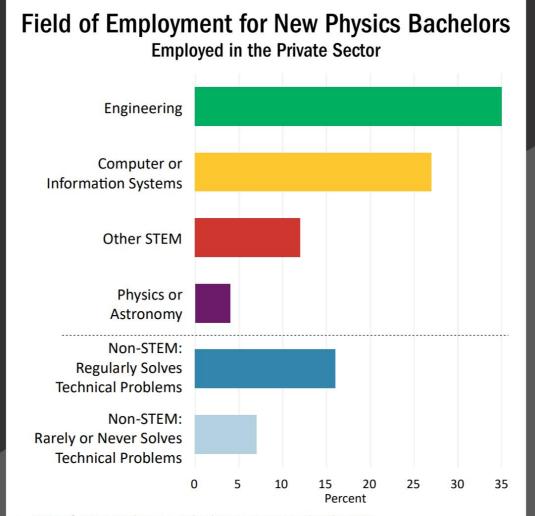
7,430 Recent Degree Recipients



Note: Data in this figure are from the AIP Statistical Research Center's annual Bachelors Follow-up Survey, classes of 2013 & 2014 combined. The 7,430 degree recipients represent the average of these two classes. Four percent of respondents to the survey indicated that they had left the US to pursue employment or graduate study and were not included in the figure.

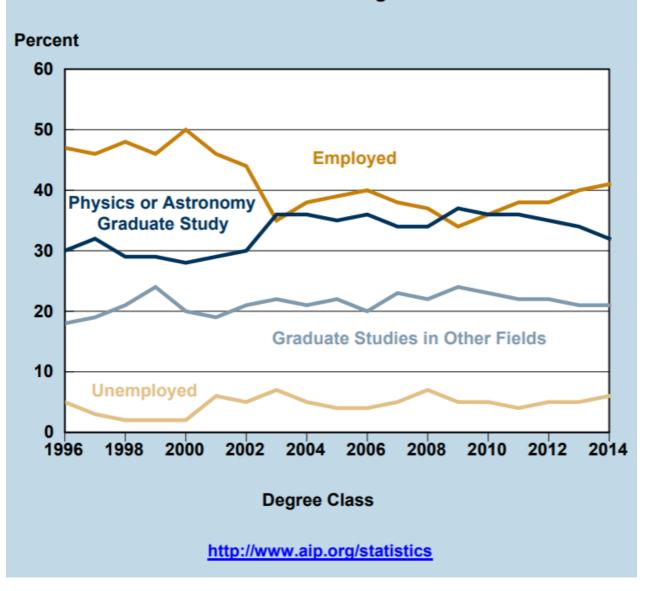
Initial Employment Sectors of New Physics Bachelors, Classes of 2015 & 2016 Combined





- · STEM refers to natural science, technology, engineering and mathematics.
- Regularly solving technical problems includes respondents who selected "Daily", "Weekly", or "Monthly" on a four-point scale that also included "Rarely or Never".
- Almost half of new physics bachelors entered the workforce after receiving their degree, two-thirds of which were working in the private sector.
- Data are from AIP's Follow-up Survey of Physics Bachelors, classes of 2015 & 2016 combined.

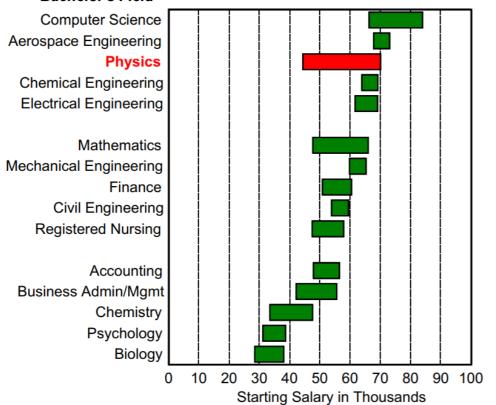
Status of Physics Bachelors One Year After Degree, Classes 1995 through 2014



What's a Bachelor's Degree Worth?

Typical Salaries for Bachelor's Degree Recipients, Class of 2015

Bachelor's Field



Note: Typical salaries are the middle 50%, i.e. between the 25th and the 75th percentiles.

Reprinted from the Spring 2016 Salary Survey, with permission of the National Association of Colleges and Employers, copyright holder.

For Illinois Physics majors:

Average starting salary=

(A) \$44,000

(B) \$51,000

(C) \$67,000

Typical Starting Salaries for Physics Bachelors

Sector of Employment

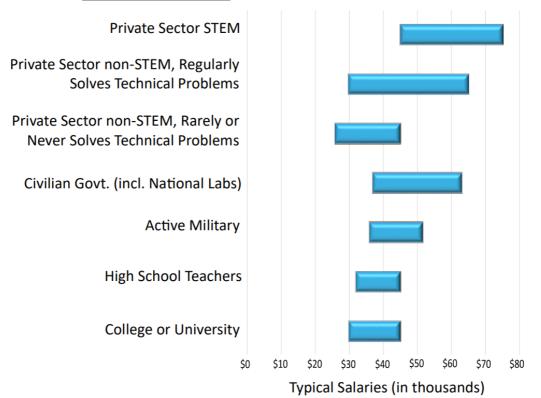


Figure includes only bachelors in full-time, newly accepted positions from the classes of 2015 and 2016 combined. Typical salaries are in the middle 50% i.e, between the 25th and 75th percentiles. STEM refers to positions in natural science, technology, engineering and math. Regularly solving technical 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.

Resources

Engineering Career Services

https://www.aip.org/career-resources

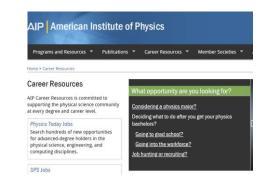
https://jobs.spsnational.org/jobs/

https://jobs.physicstoday.org/

http://www.physics.org/careerprofiles.asp

https://www.gradschoolshopper.com/gradschool/





PHYSICS TODAY | JOBS

Physical Scientists - find the right job, right now.





