

Getting to Work – Tool #6: The Job Search Strategy

Now that you have explored your options and assessed your skills, abilities and interests, you are ready to begin the process that most people associate with finding a position.

Students who have not done the exploration and assessment that you have may believe that the best way to find a position is to saturate the market with as many resumes as possible. While this method *might* work, students who take the time to truly find the positions that fit them and their skills and then customize their resumes, cover letters and other documents to fit the qualifications are much more likely to succeed. In this section, you will find tools to help you make your search more effective.

Physicists can apply to a wide range of position and being able to focus the search can really help.

It is often said that finding a job is just as much work as taking a class! Finding your first job with your physics degree could take a semester or even longer. Success in your search depends on doing your research to find positions that match your skill sets and interests so that you can put together the most effective cover letter and resume for each specific position. Then you can be ready to have a positive interview experience. After spending the time to work through Tools 1-5, you are ready to take on this challenge.

Students who plan a structured, strategic approach to finding positions and give themselves concrete goals throughout the process are positioning themselves for success. For at least **one semester prior to your graduation**, consider setting these goals as you prepare to carry out your search:

- Attend multiple networking events – this can take many forms, such as going to career service sponsored events, going to professional society meetings, or receptions after talks
- Follow up with any contacts made at those events within one week
- Set up 3 online search agents each semester
- Update your LinkedIn profile (each semester)
- Reach out to 2 recent school alumni to learn about potential opportunities through information interviews
- Apply to at least 3 job ads that match your experience and for which you are qualified, each week
- Research prospective employers, aiming to learn about 2 companies each week

Like forming a great study group, working with other students can make the job search more successful. This provides a means of holding yourself accountable to meeting these goals. Consider forming a weekly “Jobs Club” within your SPS Chapter to connect with other students who are seeking employment. Share the goals you have set for yourself and encourage one another to work your plans and meet your deadlines.



Making use of your professional network

A 2016 study by LinkedIn and the Adler Group found that 85% of all jobs are filled by networking. This is compelling evidence for making use of the networking tips in Tool #4 to find your future employment!

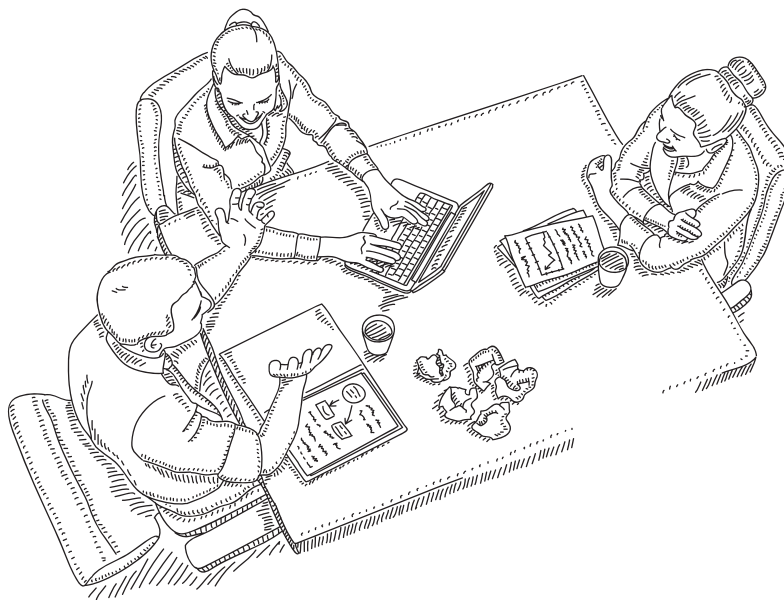
Your professional network includes faculty members, colleagues, family, friends, LinkedIn contacts, career professionals on campus, contacts from professional society meetings, and other people that you have encountered as part of your undergraduate experience. These connections are excellent resources when it comes to a job search.

The first step is to alert your network contacts that you are entering the job market. Do not be shy about sharing with everyone you meet that you are actively seeking a job. Most people are eager to help students by offering advice, leads, and sometimes even making introductions. When reaching out to professional contacts, be sure to remind them how you received their name or where you met. In many cases, it is best not to ask for a job directly, but to ask for advice or leads instead.

Working with your professional network

When networking, remember that getting a point of contact is just a beginning. To derive the most benefit, you'll want to stay in touch with your connections throughout your search. Here are some tips to remember when using your professional network to find a job:

1. When you reach out to someone, be sure to **remind them of how you met** or were referred their name. One way to help with this is to make a habit of taking notes on the back of exchanged business cards so that you can remember where you met, what you discussed and why you would follow up with this person in the future. Consider using an app to take pictures of cards to keep them organized or simply tape them into a notebook. The trick is to be able to find them easily later.
2. **Stay organized with your contacts.** Make a spreadsheet of your contacts with their name, title, organization, contact information, areas of expertise and a log of when you reached out to them in the past and when you need to take additional action. Treat this project like a formal research project, keeping careful notes about each contact.
3. **Stay on their radar.** A person you talk to only once will not be a strong part of your network. Send updates to your connections to let them know how school is going, where you are in your search, or to pass along information of interest. Cultivate the relationship.
4. **Curate your online presence.** Oftentimes, people in your network will look you up on social media to learn more about you. Be sure that any sites you belong to represent you in a positive light and you update your information frequently to highlight your recent accomplishments.



The online job search

Most important: Don't only search for "physics"! Physics students usually start their job search by entering the word "physics" when exploring large job databases. The results are usually disappointing. The word "physics" will not return nearly as many results as there are jobs available to physics bachelor's degree recipients, because most of these jobs do not have "physics" in the title. The common job titles held by recent physics bachelor's recipients (on page 11) **are a good place to start** when searching online job databases. Note that these job titles are intended as a guide; they are not exhaustive or exclusive.

Before you start, go back to the list of common job titles on page 11!

Is a teaching career for you?

Teaching can be a rewarding way to share your love of physics and astronomy while learning from students and the experience as well. Because a career in education is often not emphasized during physics undergraduate studies, it may be easy to overlook when considering a long-term career. But even without a teaching license or an education degree, it is easy to transition from physics into teaching!

Begin your search by looking at school district websites to see what types of jobs are available and what the requirements are for each position. Also reach out to anyone you may know who has contacts in these districts. License requirements vary by state, but all of the information you need about licensure can be found on each state's Department of Education website. Most public schools, some charter schools, and few private schools require licenses. Additionally, some schools prefer if you have degrees in the subject area that you want to teach! If a license is required and you do not have one, you need to apply for an alternative license through your state in addition to filling out applications. Alternative license candidates are often not primarily considered, but **having a contact who can put in a good word for you can go a long way.** Substitute teaching before applying for full-time teaching jobs is also a good way to gain experience, make contacts, and show educators that you are passionate and highly qualified to teach physics, math, and other related subjects.

Teaching can be an exceptionally rewarding profession that provides not only fiscal security but also an opportunity to give back to your community. It is a fantastic career option to explore if you have a strong passion for science and education. Many teachers also get long breaks in the summer/winter months.

Choose the right databases

There are many online job databases. While by no means an exhaustive list, the databases below are great options for physics students looking for STEM jobs. All of these sites have robust searching options, the option to upload a resume, and career advice. Most will also allow you to set up search agents which will email you automatically when jobs meeting your search criteria are posted.

Your college or university career center will also likely have a database of positions that you should investigate and visit frequently. This will be one of the best starting places to connect with employers who will recruit on your campus – allowing you to turn an online search into a real-world connection. Often, these employers will have already hired alumni from your school.

SPS Jobs | jobs.spsnational.org

SPS Jobs is part of the American Institute of Physics Career Network and has bachelor-level positions appropriate for physics applicants, as well as jobs for physics graduates at other levels.

USAJobs | www.usajobs.gov

USAJobs is the US federal government's official job list. There is a special portal for students and recent graduates to find internships and jobs. Jobs at NASA, NIST (the National Institute for Standards and Technology), the NRC (Nuclear Regulatory Commission) and other federal agencies are posted on USAJobs.



Tool #6: The Job Search Strategy

Science Careers | jobs.sciencereaders.org

Science Careers, the careers component of the journal *Science*, is a database of job postings from around the world for scientists of all disciplines, backgrounds, and experience levels. Although many of the positions are for PhD scientists, there are some that require only a bachelor's degree.

Engineer Jobs | www.engineerjobs.com

Engineer Jobs is an extensive database of engineering job opportunities of all types within the United States and Canada.

The Institute of Electrical and Electronics Engineers (IEEE) job site | careers.ieee.org

This is another useful job database for engineering positions. There is a related portal for students looking for entry-level jobs at www.aftercollege.com/organizations/ieee-entry-level-jobs/.

Glass Door | www.glassdoor.com

Glass Door aggregates jobs from the web, but also allows job seekers to see reviews from current and former employees as well as salary data. These insights can be helpful as you investigate workplace culture.

LinkedIn | students.linkedin.com

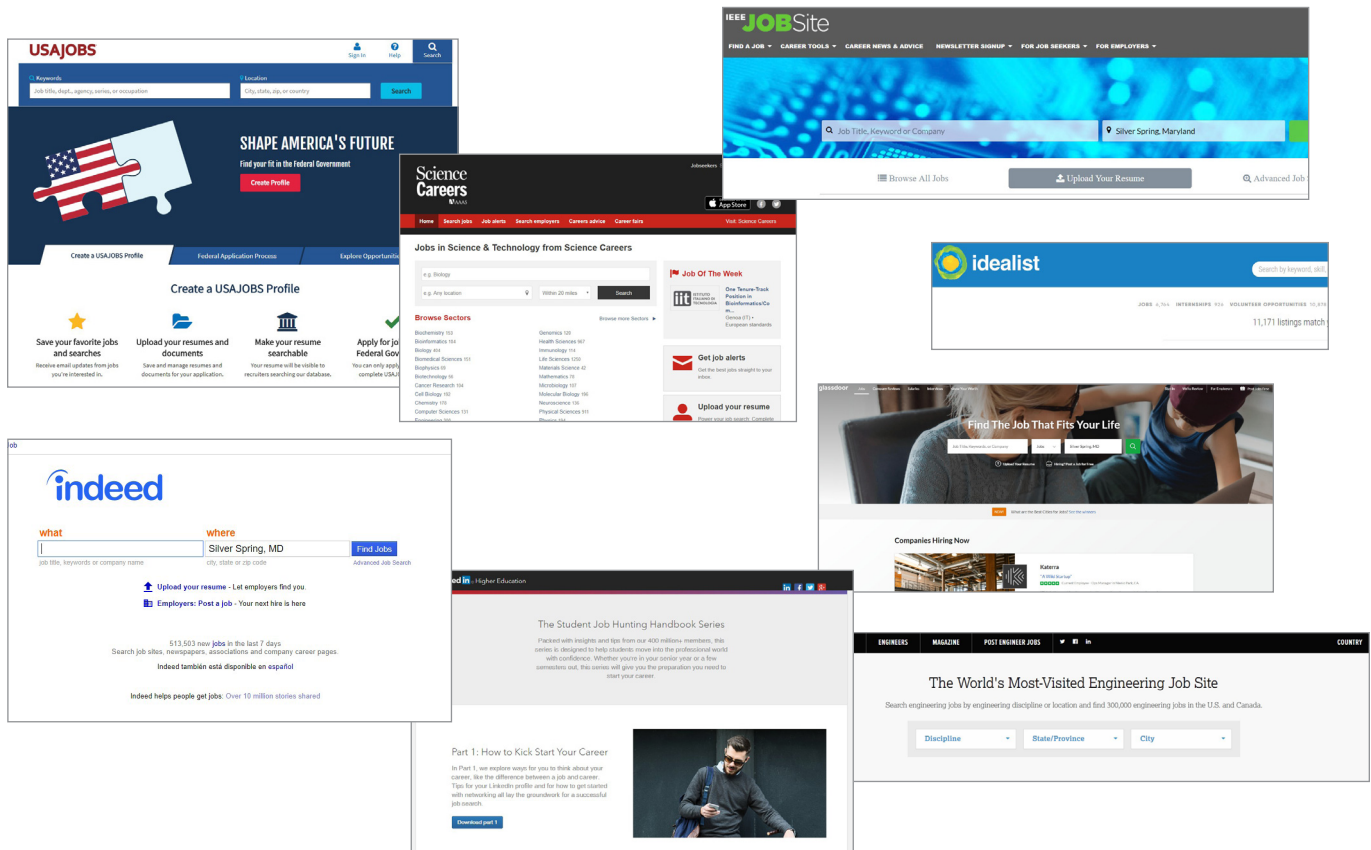
In addition to being a hub for networking, LinkedIn also allows employers to post jobs. This particular portal will guide you toward positions oriented to students.

Indeed | www.indeed.com

Indeed is a large single-topic search engine that aggregates job listings from thousands of websites.

Idealist | idealist.org

Idealist is an online meeting place for nonprofit organizations, resources, consultants and volunteers. Many opportunities for STEM outreach and education positions are posted here.



The job fair

A job fair is a gathering of several employers in a central location who are there to meet with potential applicants. Job fairs can be themed around certain employment sectors (e.g., healthcare) or may be broadly based. Many schools host job fairs, but you can also find them at other community locations. The challenge for physics students attending job fairs is to know how to talk about your skills in a way that is meaningful to potential employers (Tool #5). The representatives of an engineering firm at a job fair may not know that physics students commonly go into engineering positions with great success, so it is up to you to demonstrate with an appropriate resume (Tool #7) that you are a great candidate and to be able to articulate clearly why you are well suited for the prospective position. Even before you are ready to begin applying, it is a great idea to explore some job fairs to learn about what kinds of positions are available and what types of skills those employers are looking for.

Timeline for Job Fair

Two weeks out:

Do research in advance on the organizations who will be attending and have a game plan for those you want to visit. You probably won't be able to stop by every table so pick 6-8 that are on your "Must See" list and then another group that you would be interested in but are not in your top tier.

Prepare resumes for specific companies you want to visit. Update those resumes and have your career center or others that you trust review it. Remember, that the "one size fits all" resume is not effective. Based on your assessment of employers in attendance, you may want to tailor your resume to match your knowledge and skills to what each of your selected "Must See" organizations are looking for.

One week out:

Get your professional outfit cleaned and ironed. Consider getting a haircut and polishing your shoes. Practice your elevator speech (Tool #4).

Day before:

Print out copies of your resume and organize them in a portfolio, along with a pen, and your business cards. You will probably pick up flyers, brochures, and business cards at the fair. A portfolio is a great way to organize them.

At the fair:

Visit the organizations you planned on, but also keep an eye out for new organizations. If a company has a display that catches your eye, stop and talk to them about it. You may be surprised at the opportunities you find!

Get contact information from everyone you talk to. Business cards are great for this. Remember to write notes on the back of the card to help you remember the specifics about your interaction.

Talk to your fellow job seekers. They may be able to help steer you toward an organization you were unaware of before.

Within 2 business days after:

Follow up with anyone you spoke to at the fair. Send a short email thanking them for their time and following up with any additional information they requested. You could consider attaching a cover letter and revised resume that are tailored to the specifications you discussed at the fair. Also consider connecting with recruiters that you met on LinkedIn.

An example experience: The job fair

The following article was written by Shouvik Bhattacharya, an SPS summer intern who worked on the Career Pathways Project. Attending a job fair can be an eye-opening experience and give you lots of opportunities to practice your elevator speech (Tool #4), talk about your knowledge and skills, and communicate why someone with a physics degree is qualified for many different kinds of jobs. In addition, the list of common job titles may help you communicate effectively with job fair exhibitors unfamiliar with the kinds of jobs that are often done by individuals with a bachelor's degree in physics.

My First Visit to a Job Fair

by Shouvik K. Bhattacharya



I take a deep breath and step inside the fair pavilion at the Ronald Reagan Building in Washington, DC. There are about thirty small booths occupied by prospective employers at this summer career expo sponsored by the magazine *Equal Opportunity*, and already four of them are crowded. The University of Virginia booth looks less crowded, so I decide to visit there first.

A woman welcomes me with a warm smile and gives me a pen with the university's name printed on it. She says that the human resources department recruits applicants from diverse academic backgrounds, including physics. An applicant with a STEM (science, technology, engineering, and mathematics) background is expected to have the qualities of coordination and collaboration. These are valuable skills that employers

care about. She shares her contact information and also requests my resume in turn.

I wander off for a bit and then enter the US Bureau of Labor Statistics booth. I expect that someone who completes a bachelor's degree in physics is likely to have taken some statistics courses, and that is what motivates me to stop by this particular booth. But the representative informs me that a physics major should apply only if he or she has a strong mathematics and statistics background.

The next representative I speak with, at the Boeing Corporation's booth, sounds very positive and enthusiastic. She tells me that the company has many entry-level openings. She advises me to create a profile on Boeing's career website and to prepare a resume based on the jobs that are available. She emphasizes that being flexible about relocation and having a positive attitude toward learning new things are essential to an employee's job security. I realize that all representatives at the job fair are actually there to help applicants, and I feel confident thereafter.

Then I stop by the job booth of the US Nuclear Regulatory Commission, where I am handed a job list. This government agency definitely hires physics undergraduates. The representative asks me to share this information with anyone who would be interested in applying for the entry-level openings. Job titles included general engineer and scientist, both of which require a minimum cumulative GPA of 2.8 overall and 3.4 in the applicant's major. The job descriptions include writing, critical thinking, decision making, inspection, and conformity research as the integral duties that employees would have to perform in this job. I get a little excited seeing all these details. So far this has to be my best experience of the job fair, as I get to see an example of how a physics major can start working after a successful degree completion.

The US Air Force posts their jobs through the USAJobs website, which I learned at its booth. The representative at the IRS booth tells me that living in a big city can seem tough and challenging, but ultimately it turns out to be beneficial, as dynamic city life motivates employees to perform better. He also tells me that it never hurts to be ambitious. A representative from the Defense Intelligence Agency asks me why I have not highlighted in my resume the electronics courses that I had taken. The resume I had handed him focuses on my research background in observational astronomy. I realize that having a few different versions of my resume would be beneficial.

In the beginning, I felt a little overwhelmed, but I soon realized that all of the representatives are there to help and answer questions. Looking back at it now, I know what I have to do when I attend my next job fair. The role I played at this fair might be considered that of a surveyor, rather than that of a potential job seeker. I didn't prepare different versions of my resume, highlighting different skill sets. That is the first thing one should do before attending a fair, as the resume serves the role of a conversation starter. Wearing business clothes is also a must, because it shows how interested and serious one is about finding a job. I made a few new connections at the job fair, and I've now sent follow-up emails to each, conveying my thanks for spending their valuable time with me. The job fair visit was an absolutely amazing learning experience for me.

How do you know when you have a good match?

By reaching out to your contacts, effectively searching online databases, and visiting local job fairs you can hear about a wide variety of job opportunities. But how do you know when you have found a good match?

Zero in on matching your qualifications with the requirements of the position. In many cases, you do not need to meet all of the qualifications for a position as long as you present a strong case in your cover letter and resume. For example:

- If a qualification is “two years of relevant job experience” and you are a new graduate, you may still be considered if you highlight in your cover letter and resume the relevant experience you have gained while in school through class projects, internships and student organizations.
- If a job qualification lists “engineering degree” and you have a physics degree, you may still be considered if your cover letter and resume highlight how well your physics degree prepared you for an engineering position.

Sometimes **qualifications** may be non-negotiable or there may be several that you do not meet. If you are not sure whether you qualify, contact the company and ask before you invest too much time in preparing your application.

Look for **key words**. As you read through a job ad, look for key words that explain what the company is looking for and the responsibilities of the position. Write these down as you go. After reviewing the description, assess how well the key words match up with your skills, abilities, and interests. Keywords need to be on your resume too!

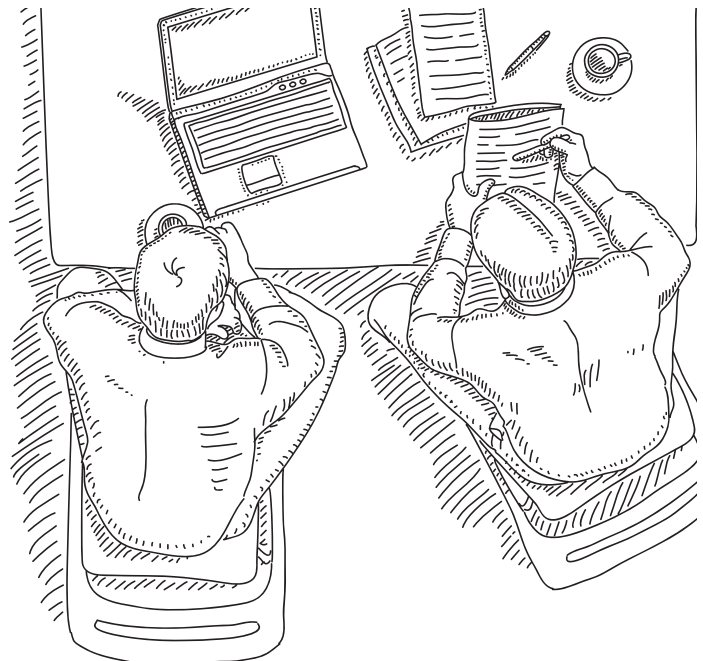
Explore the company through online searches and see whether their mission and reputation align with your interests and ambitions. Try to find out about company culture from current or past employees. This may be a great opportunity to revisit the informational interview (Tool #2).

Other factors to consider:

- How long has the position been listed? If it has been listed for several weeks, it may be worth contacting the company first to see whether the position is still open.
- Is the salary and location acceptable to you?
- Carefully reviewing job ads that interest you will enable you to be more efficient with your job search. Discarding jobs that do not seem like a good fit will enable you to focus your attention on crafting thoughtful, targeted resumes and cover letters for jobs that are worth exploring.

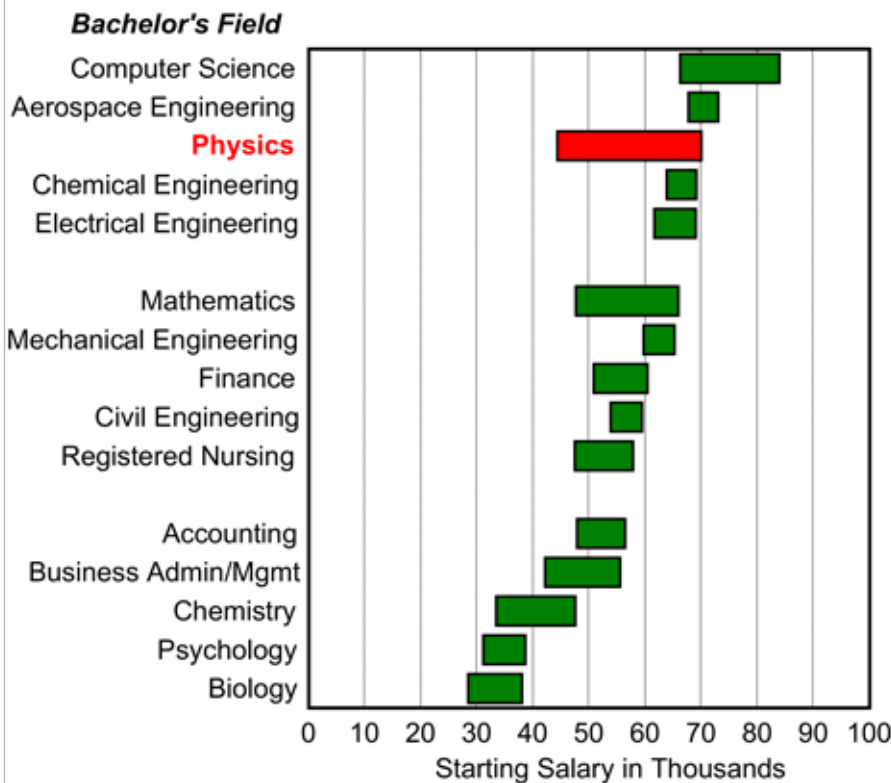
What is a physics bachelor’s degree worth?

As shown in Figure 5, new physics bachelors earn some of the highest starting salaries of any undergraduate major. There is some variation, depending upon the specific type of employment (see Figure 6), however, positions in the private sector tend to pay the most. When considering salary, be sure to consider factors like the cost of living for the area where the job is located and other benefits such as retirement, flexible work schedules, health insurance and transportation allowances. Understanding your value as well as the full compensation package will put you in a much stronger position for negotiation.



What's a Bachelor's Degree Worth?

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



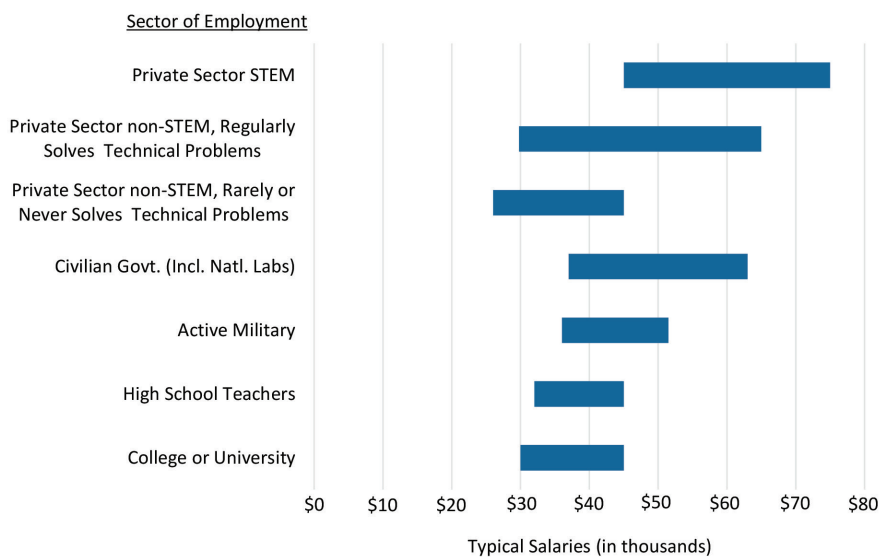
Physics jobs have a large variation in salary because of the large variety of jobs physicists occupy.

Figure 5. Typical Salaries for Bachelor's Degree Recipients.

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

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Typical Starting Salaries for New Physics Bachelors, Classes of 2015 & 2016 Combined



www.aip.org/statistics

Private sector jobs tend to pay more upfront but other jobs, such as teaching, have other benefits.

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.

Exercise - Tool #6: The Job Search Strategy

⇒ Carry over the job titles you are most interested in from page 14.

Job titles I am interested in learning more about:

- ⇒ Choose a few online job databases from pages 43-44 and search for those job titles. Print a few positions that sound interesting to you.
- ⇒ Choose one of the positions and use it to complete the boxes below.
- ⇒ Ask yourself, “Is this job worth pursuing?”
- ⇒ Ask yourself, “If I get an interview, would I be interested in going?”
- ⇒ Repeat for additional job advertisements. (You will need more copies of this page.)

Position title:

Key words or phrases describing what the company is looking for in a candidate	How well does this match my skills and abilities?	Key words or phrases describing the responsibilities of the position	How well does this match my skills and abilities?
Qualifications listed in the job description	How well do I meet these qualifications?	Notes about the company mission, reputation, salary, location	How well does this align with my interests and ambitions?

⇒ Track your applications using a spreadsheet like the one below

Organization	Address	Contact Name	Phone	Email	Type of Contact	Date of Contact	Action Needed	Action Deadline
ABC Corp.	314 Main St.	Albert E.	##	@	Met at job fair	10/8	Apply online	10/25
XYZ Tech	674 Tech Rd.	Marie C.	##	@	Left voicemail	10/10	Follow up in 2 weeks	10/24

Keep detailed notes. You won't remember many details in a few weeks and deadlines have a tendency to slip away without a plan and dates.