

1. What tips could you provide to students to help them find an internship/employment in your company or agency?

Brandy Barnes (Draper Aden Associates): The best way would be to apply online, <https://daa.com/careers/>. We have a proactive recruitment team that reviews resumes as they come in, and also works closely with the hiring managers for each division. Additionally, finding a connection via conferences, networking events, field trips, or linkedin, can give you a huge advantage!

Terry Briggs (Newmont Mining Corporation): Do not wait until the end of your degree, Newmont Mining Corporation North American and Corporate offices begin searching for next year's summer interns in September of the previous year with offers going out starting in October. Most interns will work May through August. Newmont also offers a separate program for new graduates. The best starting place for applications is on-line, but I strongly encourage students to meet with company geoscientists at industry forums such as GSA / GSN meetings. Newmont's careers page is where we direct all applicants <https://jobs.newmont.com>.

J.P. Dube (Chesapeake Energy): Start by making sure you are following a path in your education that excites you. Your enthusiasm as a geoscientist will be important to stand out over individuals who are just looking for a job. Get involved in geoscience organizations nationally and at your school and be proactive looking for opportunities to attend conferences and expos. Networking is always a great way to find internships and jobs so make it out to events, present your work and meet people from the industry whenever you can.

Alicia Kahn (Chevron Energy Corporation): It is difficult on the website so if you can get a face to face interview you are far more likely to be considered. Be direct but not pushy. Go to conferences and student expos if your school does not get recruiters on campus.

Greg Liggett (Bureau of Land Management): There are a number of government or government-sponsored programs that benefit students and professionals just beginning their careers. One of the best ways to "get your foot in the door" is to get an internship with an agency. Many agencies within the Department of Interior (DOI) and the Department of Agriculture (USDA) have geoscience-related needs.

"Internal Internships." This type of internship is initiated by an agency to assist with an identified need. Internships are for current students 16 years of age or older, so high school students can apply. The internship can be open-ended as to hours worked (indefinite intern), or be limited to "so-many hours worked," sometimes referred to as Not-To-Exceed or temporary interns. There are also recent graduate internships, available for those who are within 2 years of their graduation date. All of these internships, as well as other currently open regular positions, will be posted to <https://www.usajobs.gov/>. You can create an account there, and set the system to email you when positions of interest come up. There are filters on the website to limit results to student opportunities, certain agencies, specific locations, etc. Sometimes there are short deadlines to apply for a position, so I recommend that you have your resume and all documents uploaded and ready to go when an opportunity presents itself.

A note about applying. Study the position announcement closely. Take careful note of the experience that they want to see you have. If the announcement says the applicant should have “at least one year of experience working with fossils” then make sure in your resume you explicitly say “I have X years of experience working with fossils.” Use the words and language in the announcement in your application. Why? You might see awkward language, like a geologist would never say something that way, and it is because the position description may not have been written by a specialist. And your application will not get its initial review by a specialist. It will be some poor HR person who doesn’t know the job at all, and all they can do is look for the experience that the position description asked for. You have to have your application make it through this first cut where it will then be sent to someone who may actually know the job. Don’t expect the

HR people to “read between the lines” on your experience. Sure you have published papers or given talks, but an HR person cannot see through that to understand the experiences behind those activities.

“External Internships.” This type of internship is managed by a partner, who recruits interns for agency-identified needs. This type of intern is not a federal employee, as all of the recruiting is done by another organization. These internships are not posted at USAjobs.gov, and often target historically underserved populations. An example of this is the Geological Society of America GeoCorps program. Here is a link for to begin exploring these external internships: <https://www.blm.gov/careers/students-and-grads/direct-hire-program>.

Public Land Corps is another program focused on people between ages 16 and 39 years to work on conservation projects on public land. To learn more about this program go to <http://www.21csc.org/>

Within DOI, successful completion any of the above external internship programs, along with the completion of a degree, qualifies the intern for a Direct Hire Authority (DHA) for two years following the internship, allowing non-competitive appointment to a position. That is a huge advantage for getting a permanent position.

Another internship opportunity to be aware of is those offered by the National Council for Preservation Education (NCPE). Agencies identify needs that an intern can fill, and twice a year positions are posted to their website: <http://www.preservenet.cornell.edu/employ/ncpe.php>. There are many different tasks in these listings, many not science related. Check them out as you never know. For the last several years, DOI has funded interns to work at partner museums around the country, preparing and curating DOI-owned museum collections.

The final internship opportunity is offered through the Office of Personnel Management (OPM) and is the Presidential Management Fellows (PMF) Program. This is available to those who have completed an advanced degree by August 31st of the year following the annual application, or those who have completed an advanced degree during the two years previous to the opening data of the annual application announcement. These internships are highly competitive. More details are at <https://www.pmf.gov/>

Here are a couple of other links for information:

- <https://www.blm.gov/careers/students-and-grads>
- <https://www.usajobs.gov/StudentsAndGrads>

Bruce Schumacher (Forest Service): Be certain you are pursuing a career path that is exciting to you. Forget about choosing a focus area purely because of potential for monetary gain – if you're not passionate about your work, it will not prove fulfilling or lasting.

Be willing to accept entry-level Internship positions. Quite often, small steps like this are necessary to find permanent full-time employment.

Create a USAJobs account, and have all of the personal information entered and ready to go when a job opportunity is posted. Be ready to adapt your resume/cover letter to emphasize those skill sets most pertinent to particular jobs.

Limaris (Lima) Soto (National Park Service): I recommend volunteering for an agency, as it is a good way to network and get the experience it is also the "way to get your foot in the door." I also recommend being flexible and applying for positions in places that you might not have thought you will be working. Once you have your first federal job and have gained some work experience, you can always apply for positions in your chosen career field and where you have always wanted to work.

Lisa White (UC Museum of Paleontology): Look for opportunities to network with agencies, companies, or the labs where you are seeking an internship. See if any of the groups will be at GSA or other conferences you plan to attend and contact individuals associated with the groups. Ask to meet, find out more about their project work and if they have internship opportunities. Cold calling or e-mailing an individual at the agency or company with a request for information often does not produce the same results as an in-person introduction, but don't rule it out.

2. What coursework, degree requirements and/or experience would you suggest students have to help them get an internship/employment with your company or agency?

Brandy Barnes (Draper Aden Associates): The basic requirement for our geology positions, which may include technicians, environmental scientist, or staff geologist, is a specific degree for the role you are applying for. Most of the young professional geologists in our company have at minimum of a BS in geology. As roles vary, so does the degree, but opportunities online will specify. Field experience, field camp, technical and non-technical writing skills, applicable geology courses (i.e. geotechnical engineering, environmental engineering, geophysics), and strong computer skills (i.e. GIS, AutoCAD, excel) are always a plus and highly recommended. I also recommend developing strong communication and leadership skills either through presentations, networking, or being active in geoscience organizations. This will make a huge difference at the interviewing stage!

Terry Briggs (Newmont Mining Corporation): I cannot emphasize strongly enough, that field experience is a crucial aspect of being a geoscientist. This is a highly regarded aspect within the geological community as it brings together a lot of the knowledge from petrology, sedimentology, structure and other disciplines into the field, even if you don't end up doing field work, you will be better able to interpret the work of others. Secondly, familiarity with key software, especially GIS packages (i.e. ArcGIS), and even better, 3D modelling software. Many companies offer discounts or trial packages for students. Thirdly, non-geoscience subjects help round-out your skillset, be this mathematics, business or environmental to help round out your education. Outside of subject choices, active participation in geoscience societies, community engagement or running a workshop or other event will demonstrate organization and leadership skills.

J.P. Dube (Chesapeake Energy): Get the best foundation in geoscience you possibly can. Mineralogy, petrology, structure, sed/strat, geophysics, hydrogeology and tectonics are a great place to start. You can always add on to your education, but it will be assumed that you have a great foundation. Field experience, research, petrophysics, petroleum systems are all nice additions to a resume. Also, make sure you are filling your time with experience, you don't want to appear idle.

Alicia Kahn (Chevron Energy Corporation): MS or PhD required for earth scientists. BS for engineers. The more internship experiences the better, lab work, field work...basically anything that is a geologically related workflow. ArcGIS and seismic software are good tools to know. If you can't get in with a major, go smaller, or go to service companies. They will give invaluable and interesting hands on experience and often more leadership opportunities should you then decide to transition elsewhere.

Greg Liggett (Bureau of Land Management): As others have said, a broad base of knowledge and skills make an applicant attractive. Degrees are usually required for professional-level positions. I would also stress that you should work hard to improve your writing skills. Writing is such a fundamental part of my job, and really every professional position, that you should practice, practice, practice.

Bruce Schumacher (Forest Service): Have some background in National Environmental Policy Act, specifically read through some simple Environmental Assessments, or an Environmental Impact Statement in an area that interests you. NEPA comes up so often in federal land management, understanding some basics, even terminology and acronyms, will put you a step ahead.

Also, learn to utilize your geological knowledge in a broad based perspective on Ecosystem Management. In the Forest Service, any understanding of wildland fire is also helpful. Need not be directly related to jobs/skills as a firefighter, but rather the effects that wildfire has on the ecosystem (geology/soils/habitat/watersheds, etc . . .)

Limaris (Lima) Soto (National Park Service): I recommend doing different internship experiences so that you can get an idea of the things you want to do with your career. The more experience you get in different career fields the higher your chances of being hired. I also recommend learning ArcGIS and programming and doing courses or certifications in project management as it relates to all fields.

Lisa White (UC Museum of Paleontology): Although paleontology is a very specialized field, it continues to be informed by other disciplines and sub-fields within geology and biology. In addition to courses in sedimentary geology and paleoecology, taking biology courses in evolution, vertebrate anatomy and/or invertebrate zoology are beneficial. Paleontology is also becoming increasingly quantitative and analytical so taking courses in MATLAB or R script are also helpful.

**3. Students are interested in the amount of time you spend in the field, lab, office and traveling.
What does your work involve?**

Brandy Barnes (Draper Aden Associates): As many professionals will tell you, this varies by industry, experience, role of the employee, and company projects. Expect to travel and be out in the field for your first two to five years. When interviewing for a position or after a job offer, make sure you ask plenty of questions about the amount of field work, traveling, and office work. You may also choose to inquire about current projects and the locations of the projects, if not available online. This will help you get a better understanding of a company's expectations. Over the last 4 years, I have experienced approximately 50% of my time in the field/lab and 50% in the office. Some projects have kept me in the field for months, other times I will be in the office for a few weeks, it just depends on the needs of the company. I have also experienced some projects requiring travel and overnight stays. In the spring, I was out of town eight weeks between April and June; other than that time frame, travel tends to be between two days and two weeks periodically throughout the year.

Terry Briggs (Newmont Mining Corporation): This is highly variable and can depend upon the role, where the industry is in the commodity cycle, the size of the company, the stage of a project (discovery-development-operation). As a graduate, it is not unlikely to only be able to go to one workshop or conference a year (as a tip – a speaking place is the best way to get to a conference), travel in early years is often limited to the project site. Field work can be anything from a big aspect of the work, such as our greenfield geologists, to minimal such as our database geoscientists. As you progress through your career you may get the opportunity to be exposed to more travel to other projects, operations, conferences and events. Technology has enabled more to be done remotely, and an increased expectation of analysis and interpretation in the office. I have had the opportunity to work through all aspects of the project cycle from discovery to closure, and one of the benefits of the geosciences, is that it is global, it offers career development opportunities that can have you in the field or the office as your wants and needs require.

J.P. Dube (Chesapeake Energy): Unfortunately, the answer is it depends on your company and your role. Some basins and assignments present great opportunities to visit field outcrops, some don't. Some roles include active operations including drilling, coring and seismic acquisition, some don't. Some companies have amazing labs like Chesapeake, most don't. Some companies offer great training, some don't. Some companies work all over the world, some don't. The reality is that most oil and gas geoscientists spend most of their time in the office at a workstation but the best jobs out there provide ample opportunities to get away from the desk to be hands on.

Alicia Kahn (Chevron Energy Corporation): Now in the downturn, travel has been severely curtailed. Whereas I used to travel globally, even a trip to a lab is rare now. Field trip frequency is much reduced as well. I spend most of my time on the computer or microscope. I anticipate that the travel will never return to what it once was, especially because many offices worldwide have been closed or reduced in size. That being said, once the economy improves for the oil and gas industry there will likely be more flexibility in meeting locations and field work/school possibilities.

Greg Liggett (Bureau of Land Management): I have great flexibility with time in the field, office, and travel, within certain limits of course. Most of my time is office-based. I myself do not do much field work, but can go to the field as needed to work with paleontologists who have permits to work on public land. As for travel, I usually can do several professional meetings a year, and several instances of work-related travel such as meetings. However, federal budgets can change year to year, and when congress doesn't pass a budget until well into a new fiscal year, we often don't know how much money we have, which is very wasteful.

Bruce Schumacher (Forest Service): The job is what you make it. I firmly believe many employees have the latitude to make these decisions for themselves, certainly to a lesser degree, in some cases to a greater degree. I strive for a nice balance – at lower levels one is likely to be more field based (~perhaps 50% of time). Higher levels in an organization, field time is likely to be considerably less – but again, the job is what you make it.

Limaris (Lima) Soto (National Park Service): In the past, I used to spend more time in the field. In my current position, I spend the majority of my time in the office. I am able to visit interns or do training a few times a year especially during the summer when we have interns completing their work. The majority of my time in the office is spent in calls or meetings and answering messages from parks or doing financial work for the programs.

Lisa White (UC Museum of Paleontology): My grant-supported projects at the museum require field work, on land and on ships, and spending 4-6 weeks/year in the field is not unusual for me. I frequently present my work at national and international conferences and in a typical year I attend 3-4 conferences. In my role as the director of education and outreach at the UC Museum of Paleontology, I create learning materials and modules for education and public audiences and work with undergraduate and graduate students interested in improving their science communication and outreach skills. Many of my days in the office are spent managing the administrative work of the museum's grants and supervising the education and outreach team (consisting of a science writer, web manager, and graphic artist). I also partner with other museums and academic units across the Berkeley campus in support of STEM education and diversity in STEM.

4. Do you have any interviewing tips or strategies to help students get hired?

Brandy Barnes (Draper Aden Associates): Always do your research on the company before interviewing. Come prepared with questions and take notes during the interview because it shows that you are interested in learning more. Dress the part, feel free to ask the company representative, HR coordinator, or maybe a company contact for dress code expectations. Try your best to engage in the interview in pleasant conversation. You put in the time and energy to land that interview, so enjoy your moment to shine! A great resume may get you to an interview, but a great interview lands the job. They are interested in you, smile and communicate in a friendly manner. If you choose to practice networking as a student or young professional, interviewing will become easier and more fluid. It will also help you learn ways of controlling those pesky nerves.

Terry Briggs (Newmont Mining Corporation): Our Human Resources department presented these tips with graduates recently. When preparing for an interview, research the company you will be interviewing with (despite how easy this is, you would be surprised how few still do this), prepare for commonly asked questions (about yourself, strengths & weaknesses, why do you want to work here...). During the interview pay attention to body language, use discretion, avoid discriminatory subjects, ask questions, actively listen and walk away knowing the next steps in the process. Ask questions such as what do the interviewers most enjoy about the company, what is expected to be accomplished, type of training on offer, etc. After the Interview, send a thank you email, follow-up with the company keeping in mind the timeline they've shared and keep them informed of changes in relation to your job search. Don't be afraid to ask your point of contact what the dress code is, I was once on a remote mine site where two recent graduates arrived for an on-site interview, one in a suit and tie, the other in jeans and a t-shirt (both were hired!).

J.P. Dube (Chesapeake Energy): Make sure you have other people look at your resume. You don't have to act on everyone's feedback, but you should solicit as much as possible. It's amazing what blind spots we have about ourselves. Then make sure you research the company you are interviewing with. You don't have to be an expert, but you'd be amazed how many candidates I see that don't know where we are located. And finally, bring energy to the process. You probably got into geoscience because something about it excited you, don't be afraid to share that passion during an interview.

Alicia Kahn (Chevron Energy Corporation): Practice interviewing. Go to your career center and solicit help and mock questions. Most interviews have situational questions so try to think of specific scenarios that will help describe your personality, communication skills, scientific prowess, team suitability, and leadership. The more you interview the more polished you become. Be sure to tailor your answers so they are appropriate/relevant to that which you know (do your research) about the company/organization/department to which you are applying.

Greg Liggett (Bureau of Land Management): Research the bureau and office that you have applied to. As best as you can, learn all about the position. Federal job descriptions are often vague, and the same position title may be responsible for very different duties. For example, a job class of Geologist might work in oil and gas, minerals, mine engineering, coal, or even paleontology. Be aware of what the position is, because their expectations of your background and experience would be very different for each of those positions.

Each federal agency has its own mission. Learn about the agency. We are big on "authorities," that is, what the specific law is that authorizes us to do our work. For the BLM our authority starts with the Federal Land Policy and Management Act (FLPMA, pronounced "Flip Ma"). Become familiar with that. Also, much of many agencies' work is directed by National Environmental Policy Act (NEPA, "Ne-Pa"). If you can demonstrate that you have a basic knowledge of these laws, you can at least "speak the lingo" a bit, and maybe distinguish yourself.

Bruce Schumacher (Forest Service): Be sure you emphasize loyalty and devotion to discipline. Also stress good inter-personal skills – working with/following/leading other individuals. Show that you have good communication skills by being yourself, being comfortable, not searching for fancy words. Stress that you have (and make sure you do have) good writing skills. So much of what we do is writing effectively, and adapting our writing to be well received by a range of audiences. Good technical/corporate/bureaucratic writing skills are super important.

Limaris (Lima) Soto (National Park Service): Research the agency/company before you interview for the position and make sure to practice the interview with a friend, don't just "wing it". Most of the questions that they will ask are available online so that you can practice the answer before the interview. Dress appropriately for the interview, even though your position might be in the field you should dress professionally for the interview. Prepare questions for the interviewer about the position and after the interview send an email/card thanking the interviewer.

Lisa White (UC Museum of Paleontology): Be persistent and also be open to the variety of internships and job opportunities in and outside your immediate discipline to grow your base of knowledge. Communication skills are equally as important as technical skills so seek opportunities to polish your speaking, writing, and presentation skills.

