

Once you have decided you want to go to grad school, consider what type of career you hope to pursue post-grad school.

RESEARCH TRACK

This path typically includes a research oriented graduate experience (thesis option).

INTERNSHIP TRACK

This path includes both research and non-research graduate experiences (e.g., thesis or non-thesis option).

One involving mostly research (e.g., professor, government agency such as US Geological Survey, US Forest Survey, or at a non-profit like The Nature Conservancy)

You enjoy environmental science and biology, and you want to become a conservation biologist/botanist in a government, non-profit or private setting (e.g., botanic garden staff, parks and recreation employee, environmental consultant, ecology education coordinator, etc.)

Read potential advisor research (papers and lab website which can be found through their institutions departmental website): Do they align with your research interests (what are you curious about; microbes, fungi, plants or animals) and how do you prefer to pursue them (in the lab or in the field; theoretically or empirically)?

Read about potential advisors on their website to learn about their community involvement, teaching and role at their institution. Do they seem to have connections with government, private or non-profit agencies (e.g., cooperative extension, joint appointment with a university and non-profit, part-time environmental consulting, etc.)

A potential advisor studies my favorite plants, but their lab seems to do mostly field work and I was born a vampire and can't stand the sun!

This lab may not be a great fit. Find a different advisor

A potential advisor studies my favorite fungi, and they work mainly in an air-conditioned lab, my favorite!

This lab may be a great fit.

Advisor doesn't have many or any recent papers (varies by field but <1/year over a couple years may be concerning) on lab website or Google scholar.

This advisor may be retiring, already retired or taking on mostly administrative work. Or something else. This may not be a good lab for research-oriented training. Proceed with caution.

A potential advisor works jointly with a government organization (as noted on her/his lab website and shown by coauthors on publications). Current students are pursuing applied (e.g., conservation/restoration) research questions or non-thesis options and internships. Her/his lab alumni have jobs spanning non-profits and government agencies. Most of them pursue careers you strive for.

A potential advisor has lots of publications, but the coauthors are all academics (e.g., other professors). Their lab website shows little collaboration with folks outside of academia and no internship opportunities..

Email advisor
(see 1 below for what email should say/include)

This lab may be a great fit.

Set up conversation with them (e.g. zoom)
(see 2 below for what you should ask them)

They respond and are interested

You think you are compatible.

Email some of their current and former lab members and ask for feedback/meetings
(see 3 below for what email should say/include)

You think you are not compatible.

Some (ideally most) respond

Set up meeting with them (e.g., zoom, phone) and ask them about their experiences in the lab.
(see 4 below for what to ask about)

You do not think you are compatible with the lab culture OR what the advisor told you and what the students report as their experience in the lab do not match.

You like the current/former students, and the lab culture seems compatible with your expectations and work-style

Send a reminder email.

They don't respond within 7 days

They don't respond within 14 days again

Find a different advisor.

This lab is unlikely to provide you with the connections (and to some degree training) needed to pursue a career outside of academia.

Apply to the program!

Email the advisor and let them know that you will be applying to the program to work with them.

No one responds

They say they aren't accepting students

RESEARCH TRACK

1. In your initial email you want to CONCISELY convey a) your understanding of the PI's research, b) your intentions, and c) your experience.

- a. Familiarize yourself with the research presented on their lab website and read a couple of their recent papers. Reference these in the email and, whenever possible, suggest an avenue of future research that relates to their work and interests you (i.e., your potential project in their lab). [2 sentences]
- b. Explicitly state what you are interested in accomplishing in their lab (e.g., MS thesis) and what career you hope to prepare for in doing so. [1 sentence]
- c. Mention the ways that your experience and education would make you an asset to their lab and attach your CV. [1 sentence]

2. In your initial conversation your main goals should be to get a sense for the PI's mentoring strategy, lab culture, and lab/departmental resources. Here are some important questions to get you started:

- a. What is your graduate training/mentoring philosophy? Is your lab team oriented - do you have lab/group meetings?
- b. What are the expectations for time commitment/productivity? How is paper authorship determined?
- c. How interdisciplinary is your research? Will I be exposed to people with different sets of expertise?
- d. What have your students gone on to do? (if not on website)
- e. How long does it take for a grad student to complete a PhD? Masters? (if not on website)
- f. What projects are available? Are they independent or collaborative? (part of this should be on website but it's important to discuss this to get a sense of your potential advisors' passions and communication style)
- g. Do most of your students work in your lab or in the field? What type of instrumentation is available in the lab?
- h. I read your most recent paper and I did not understand X can you explain why you did that experiment? This will allow you to assess if the mentor can come to your level of understanding and raise it (communication).
- i. How do you feel about non-research careers for PhDs or industrial research careers? Does the department provide any guidance on this? Even if you are convinced you want to become a professor this is an important question because most graduates end up pursuing jobs outside of the classic professor track.

3. Your initial email to current students will be similar to the advisor email but more informal. Briefly introduce yourself and your intentions (e.g., applying for MS program to join the lab). Often lab members will have a short blurb about their research on the lab website – if so, you can reference this and tie it into your own thinking and research goals. Your goal here is to get a genuine opinion of the lab culture and the students in it through a call or zoom meeting with current/former lab members. Keep this email short. [2-3 sentences]

4. As with the advisor meeting, your conversation with lab members should explore the advisors mentoring strategy, lab culture, and lab/departmental resources – how do student experiences compare with the advisor's vision? In addition to the questions posed for the advisor meeting above, we suggest the following:

- a. Would you recommend this lab? Why? What advice would you give to a student entering the lab?
- b. Does the PI keep your best interests in mind? Do you feel that you are developing into a good scientist in the lab? Do they encourage your own interests, as opposed to only his or her own?
- c. Does the PI encourage and support students in applications for grants? Does the PI have their own funding (e.g., for summer research stipends).
- d. How does the PI handle it when the project has setbacks or isn't working?
- e. Does the department/university offer an inclusive and welcoming environment for non-traditional students, minoritized students? What resources are made available to support non-traditional students, minoritized students?"
- f. What level of your participation for deciding directions for your project is expected/allowed?
- g. Do grad students work primarily with a Post-Doc, other students in the lab, with the PI or on their own? Do they work in the lab or from home?
- h. Do you feel that the PI has enough time to give everyone's project sufficient attention? Do they write letters of recommendation promptly? Or are they too busy?
- i. Does the PI help students find post-docs, etc. after graduating from the lab?

INTERNSHIP TRACK

1. In your initial email you want to CONCISELY convey a) your understanding of the PI's program, b) your intentions, and c) your experience.

- a. Familiarize yourself with the research or conservation work presented on their lab website and read a couple of their recent papers (if applicable). Reference these or other projects in the email and, whenever possible, tie this into the subject areas you hope to learn more about or the programs/internships that interest you. [2 sentences]
- b. Explicitly state what you are interested in accomplishing in their lab (e.g., MS non-thesis) and what career you hope to prepare for in doing so. [1 sentence]
- c. Mention the ways that your experience and education have prepared you for this position and attach your CV. [1 sentence]

2. In your initial conversation your main goals should be to get a sense for the PI's mentoring strategy, lab culture, and lab/departmental resources. Here are some important questions to get you started:

- a. What is your graduate training/mentoring philosophy? Is your lab team oriented - do you have lab/group meetings and/or projects?
- b. What are the expectations for time commitment/productivity?
- c. How interdisciplinary is your work? Will I be exposed to people with different sets of expertise and from non-academic organizations?
- d. What have your students gone on to do? (if not on website)
- e. How long does it take for a grad student to complete a Masters typically? (if not on website)
- f. What internships are available? Are they independent or collaborative? (part of this should be on website but it's important to discuss this to get a sense of the PI's passions and communication style)
- g. I read your most recent paper and I did not understand X can you explain why you did that experiment? This will allow you to assess if the mentor can come to your level of understanding and raise it (communication).
- h. How knowledgeable are you about non-research careers for MS students? Does the department provide any guidance on this?

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- e. What level of your participation for deciding directions for your project is expected/allowed?
- f. Do grad students work together? Do they work in the lab or from home?
- g. Do you feel that the PI has enough time to give everyone's interests and goals sufficient attention? Do they write letters of recommendation promptly? Or are they too busy?
- h. Does the PI help students build their professional networks and find jobs after graduating from the lab?