American Fisheries Society
Student Subsection of the Education Section

How To Prepare for Graduate School

Overview

Graduate school is an increasingly important component of fisheries education. A Master's of Science (M.S.) degree is now the norm for agency biologist positions, making graduate school critical for attaining fisheries employment. Unlike undergraduate education, the focus of graduate school is research. Master's students address one or more research questions under the supervision of their faculty advisor(s). In contrast, doctoral students typically pursue more research questions at a greater depth, and do so with more independence in the design and execution of studies. During graduate school students also gain teaching experience, particularly when pursuing a Ph.D. It's important to remember that graduate school is a job, and so the application process is quite different than applying for college. Here we outline important steps students can follow to prepare and apply for graduate school.

Preparing for M.S. research

1. Develop a strong undergraduate record
    a. Excel in coursework within and outside the fisheries discipline.
    b. Develop strong skills in biology, ecology, mathematics (particularly statistics), and written/oral communication.
    c. Obtain work experience through internships, volunteer service, and AFS leadership.
    d. Conduct undergraduate research.
        i. *See "How to Conduct Undergraduate Research" document.
    e. Give professional oral and poster presentations at conferences.
2. Identify your research interest area(s)
    a. Reflect on coursework, work experience, and undergraduate research to identify particular fisheries sub-disciplines that interest you (e.g., management, native species conservation, quantitative ecology).
    b. Realize that you will focus on this research area for 2-3 years (M.S.) or an additional 3-5 years (Ph.D.).

3. Take the GRE
    a. Prepare for the test (e.g., GRE classes, review books, online practice tests).
    b. Take the exam at least 9 months before you intend to begin graduate school.
    c. Understand your scores with interpretative data available on the GRE website (http://www.ets.org/gre/institutions/scores/interpret).
    d. Schedule a second examination, if necessary.
4. Locate a position
    a. Identify prospective faculty advisors that specialize in your interest area(s).
        i. Read papers in your research interest area(s).
        ii. Talk with undergraduate advisor(s) to put you in contact with prospective advisors.
        iii. Explore job boards for AFS (http://fisheries.org/jobs) and Texas A&M (http://wfscjobs.tamu.edu/job-board/).
        iv. Also look outside fisheries departments and into ecology and biology programs.
    b. Email prospective advisors.
        i. Start sending emails the summer before or first semester of your senior year (or approximately one year before you intend to start graduate school).
        ii. Make sure emails are clear, concise, and sincere. Be sure to attach relevant documents (e.g., undergraduate transcripts, CV, GRE scores, writing sample).
    c. Persistence is key
        i. Email a number of prospective advisors to increase your chances of acceptance.
        ii. If needed, obtain more work/volunteer experience.
5. Schedule a visit with a prospective advisor
    a. Come prepared.
        i. Develop an elevator speech and a formal presentation (if asked to do so).
        ii. Be prepared to answer questions about your background and interests.
    b. Make a good impression.
        i. Have a positive attitude, and dress for success.
        ii. Be prepared to ask questions to faculty and students.
6. Make an informed decision
    a. Take time to consider your choices.
    b. Talk with your current advisor about insights into the program and your prospective advisor.
    c. Talk with your prospective advisor's current students about their working environment and the advisor's personality.
    d. It's okay to say "No" – make the choice that is best for you.
7. Apply for admission
    a. Do not apply before receiving instructions from your prospective advisor.

Preparing for Ph.D. research

1. Develop research skills in your M.S. (or undergraduate) program
    a. Hone written and oral communication skills. Your success will be higher if you have at least one publication and several presentations before applying.
    b. Be able to demonstrate leadership and effective time management.
    c. Obtain significant research experience.
2. Identify your research interest area(s)
    a. Ph.D. research is rigorous and lengthy. Be honest about your desire to pursue the degree.
    b. Choose a topic that enables you to pursue your career goals, not just a position available at the time. Unlike M.S. research, your Ph.D. project may define your career trajectory.
3. Identify an advisor
    a. Because a Ph.D. project is longer, finding the right advisor is critical.
    b. Advisors should have an established record of well-funded research and successful students who are employed in positions that overlap with your career goals.
    c. Make sure the advisor is flexible enough to let you pursue your own interests and not just carry out their research ideas.
4. Explore opportunities for independent funding
    a. Many universities offer internal funding sources (e.g., fellowships) for incoming Ph.D. students.
    b. Competitive external funding sources (e.g., National Science Foundation grants, Environmental Protection Agency grants) are also available.
    c. Obtaining an external grant before applying to an advisor increases the likelihood they can accept you.
5. Make an informed decision
    a. Choose a program that will allow you to develop skills (e.g., research, teaching, management, administration) for the career you envision for yourself.

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