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Artur Rombenso, Karma Kissinger, Michael Ciaramella & Jesse Trushenski

To cite this article: Artur Rombenso, Karma Kissinger, Michael Ciaramella & Jesse Trushenski (2015) Relevant Topics to Keep in Mind as a Graduate Student, *Fisheries*, 40:11, 557-561, DOI: [10.1080/03632415.2015.1093473](https://doi.org/10.1080/03632415.2015.1093473)

To link to this article: <http://dx.doi.org/10.1080/03632415.2015.1093473>



Published online: 05 Nov 2015.



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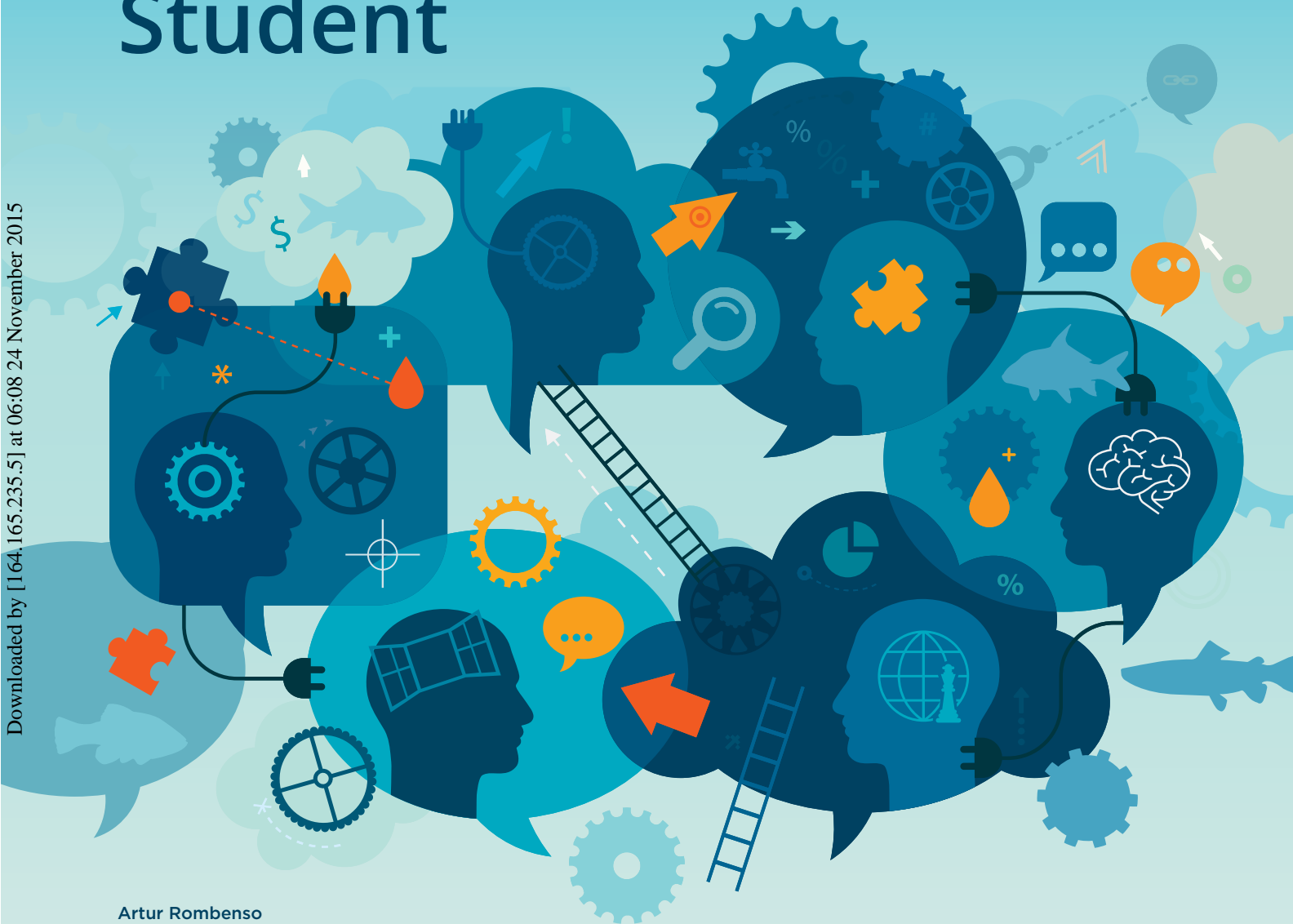


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Relevant Topics to Keep in Mind as a Graduate Student

**Artur Rombenso**

Center for Fisheries, Aquaculture, and Aquatic Sciences and Departments of Zoology and Animal Science, Food and Nutrition, Southern Illinois University Carbondale, 1125 Lincoln Drive Room 251, Carbondale, IL 62901.
E-mail: arturnr@siu.edu

Karma Kissingner

Tropical Conservation Biology and Environmental Science, University of Hawaii at Hilo, Hilo, HI

Michael Ciaramella

Department of Food Science, Nutrition and Health Promotion and Wildlife, Fisheries and Aquaculture, Mississippi State University, Mississippi State, MS

Jesse Trushenski

Center for Fisheries, Aquaculture, and Aquatic Sciences and Departments of Zoology and Animal Science, Food and Nutrition, Southern Illinois University Carbondale, Carbondale, IL

Job search and employment have never been as competitive as they are today. Globalization, high-speed information exchange, increased global population and thus numbers of job-seekers, and global economic crises are some of the major reasons for the job market's slowdown. As a result, opting for a higher education has been considered a positive strategy to be successful in the job hunting process. In addition to the monetary gratification provided by a graduate degree, there are other relevant achievements such as personal growth, credibility, specialization in your area of interest, career advancement, and more employment opportunities. However, life as a graduate student is very different from that of the undergraduate experience, and the transition can be challenging, especially when there is a lack of knowledge regarding expectations of grad students and uncertainty as to whether or not grad school is right for you. Few students have a clear idea of what to expect from higher education and are often overwhelmed with a new schedule full of responsibilities, including classes, research, teaching, writing manuscripts, giving presentations, and organizing events, among others miscellaneous tasks. Without good orientation, planning, organization, and support, the pressures of grad school can be quite stressful. For some, the stress experienced during the early stages of graduate school may incite a desire to quit the program—even students who would otherwise do quite well after learning the ropes can feel this way. Graduate education should not be an unpleasant experience; rather, it should be an enjoyable period of one's life.

Before making any decisions about grad school, you need to know what educational, professional, and practical requirements there are for your ideal career.

As the saying goes, failing to plan is planning to fail. Before making any decisions about grad school, you need to know what educational, professional, and practical requirements there are for your ideal career. This seems obvious, but students sometimes pursue graduate school without necessity—some careers don't require advanced degrees. In situations like this, practical work experience and specialized courses are more valuable than a graduate degree. So knowing where you want to work and what that requires is an essential step before jumping into grad school. Once you've determined that graduate school is an important step on your career path and you've identified a program of study, some additional planning and preparation can help make the transition and graduate experience much easier and more enjoyable. If everything is well organized and one enters a program with realistic expectations, graduate school can be a rewarding and successful experience.

To help you on your journey, we have put together the following guidelines to help undergraduates and graduate students (current or prospective) navigate the decision-making and preparation processes. These guidelines were compiled from several surveys of former grad students (currently employed) and employers.

Before making the big decision about whether or not to go to grad school, it is essential to know (or at least have an idea of) what you want to do in future, what kind of job you will look for, and what your dream job requires. This may be the most important thing to figure out before searching for the best grad school because all jobs require potential candidates to have distinct skillsets and qualifications; for instance, some jobs in fisheries and aquaculture do not require a graduate degree but instead require more practical field and work experience. An aquaculture technician position in a hatchery or a production farm will require extensive practical experience working outdoors, maintaining different culture systems, monitoring water quality, and maybe even assessing disease. Other skills including good written and oral communication, the ability to work alone or in a team, and a research background to be able to assist in possible research trials might also be requested. These needs are quite different from a position that requires a graduate degree—for example, a hatchery researcher or manager, which usually requires a master's or other advanced degree.

There are several ways to get more familiar with the requirements and skillsets necessary for your ideal job. Online searching can provide a general idea of what most employers require, talking with your supervisor and others in your department will give you important feedback, and contacting specialists in your area of interest and contacting current workers to receive a real perspective on their daily routine and tasks can give you great insight. Though those recommendations seem obvious, they are easy to overlook, so it's worth double-checking to make sure you are on the right path before jumping into something that may not be useful to you down the road. Grad school is a lot of work, and you want to make sure that it serves a purpose.

Once you've decided that graduate school is your next step, there are a few things you should consider in order to make yourself competitive and likely to secure a place in the graduate program of your choice. Things prospective advisors may look for on an application or during an interview include the following:

1. *How much experience does the applicant have and does it seem legitimate? What was the nature of their experience and is it relevant to this position/program?* Is the applicant's experience relevant to the position/program and does his or her educational background indicate that he or she would be adequately prepared for graduate school? Sell yourself, but don't pad your CV! Advisors can usually tell if a student is exaggerating his experience in his application; they will definitely know what your strengths and challenges are after they begin supervising you.
2. *Is there evidence of good writing skills?* Does the application show clear, concise writing, and is it free of typos and grammatical errors? Has the student published, presented, or written successful grant proposals before?
3. *Does the applicant use good communication skills, articulate ideas well, and use concise speech?* A phone or in-person interview can seal the deal or break it. Applicants who approach interviews well prepared and professionally and have done their homework about the program/position tend to perform better than those who don't.



Networking isn't just about meeting people but keeping in touch with those you meet.

4. *Character/attitude/personality.* Is the applicant personable? Will she work well with others in the lab? Does she demonstrate initiative and a good work ethic?
5. *Grades and GRE scores matter, but so do experience, letters of recommendation, and attitude.* Not all successful people perform well in the context of standardized testing, and most advisors understand this. Though poor grades or GRE scores do not strengthen an application, applicants with the right attitude and other evidence of scholarly promise can still be successful in securing graduate positions and earning advanced degrees.

GETTING THE MOST OUT OF YOUR GRADUATE EXPERIENCE

Most students cannot wait to be done with college or grad school and move out into the “real world” with a real job, where they no longer have to worry about classes, tests, and other student responsibilities. However, being a student is a unique moment that passes quite fast. Although the responsibilities of a graduate student may seem daunting at times—balancing teaching, research, attending meetings, writing reports, meeting deadlines, and supervising student workers—responsibilities and the challenges of time management will only increase as you advance in your career. So enjoy this period as much as possible and be open to all opportunities. Take advantage of your ability to gain these experiences while you are a student, because they will undoubtedly help you advance further and better equip you for a successful career with a graduate degree.

The following is a list of 10 areas to focus on to ensure that you get the most out of your time (Table 1).

Professional Experience

In addition to completing your degree requirements and thesis/dissertation research, work or volunteer at a commercial farm or another research facility. Try to do this early in your school career so you can choose your classes based on interest and get hands-on experience!

- In addition to research experience with fish or other organisms, it will be valuable to have skills pertinent to the job (i.e., microbiology, hands-on skills with carpentry/plumbing/electrical, and maybe small engine repair, know how to build systems, use power tools, calculate flow rates, calculate tank values, apply basic geometry and algebra in problem-solving situations, etc.).

Communication

Effective communication, both written and oral, will be integral to most jobs you encounter in the future, especially if you are looking for a higher-level position. Take time during your studies to learn to write succinctly and concisely. Here are a few ways you can work on your communication skills:

- **Familiarize yourself with scientific and professional documents.** Find and read environmental assessments, environmental impact statements, requests for proposals, and successfully funded grant proposals.
- **Whenever possible, publish your work.** For some careers, publications are not a requirement, and not everyone enjoys writing and seeing their name in print. That said, publishing your work is an important part of the graduate experience, and publishing your work in the peer-reviewed literature is the gold standard of scientific communication. Publications are extremely important for those seeking employment in academia, but they strengthen your CV/résumé for positions with state and federal agencies, industry, and commercial ventures, too. So work hard and try to publish as much as you can. Remember that magazines, blogs, and other social media can be an effective means of promoting your work and letting people know what you are doing! As much as possible, publish prior to graduating; it is very difficult to get things completed once you get out of school. Jobs, family, life in general tends to take over, and you don't always have access to electronic databases and statistical analysis software (or the day-to-day help of your advisor) after graduation.



Showing initiative and volunteering your time shows commitment and will help you gain valuable contacts and references.

- **Attend and present at as many conferences as possible.** Hopefully, you will have an opportunity to give a standard 10- to 20-minute technical presentation during your time as a student. It's also useful to create a poster or two and practice giving a quick five-minute synopsis (an elevator speech) and longer lectures. Conferences are great opportunities to network, share your research and ideas, and meet new people. So attend as many meetings/conferences/workshops as you can.
- **Apply for awards, grants, and fellowships to support your research and attend national and international conferences.** There are so many opportunities for research and travel/conference awards—you just need to look for them. Many institutions offer support and awards to current students, as do private foundations, industry coalitions, professional organizations, and public agencies. Be positive and apply for any and every one for which you are eligible—receiving awards provides monetary benefit but also builds your CV/résumé. You may not get them all, but each one will help improve your writing skills and give you a better understanding of what committees looks for in applicants.
- **Don't forget there is always room for improvement, so take advantage of your program and improve on the skills you already have.** To become a well-recognized researcher/professor/manager you need to be able to speak to different audiences clearly and concisely; be able to communicate effectively in the form of reports, papers, and other media; and provide leadership and mentoring to those around you. Spend some time enhancing the skillsets you already possess and recognize there is always room for improvement. Grad school is a great environment in which to get constructive criticism and help from many other professionals.

Networking

- **Make sure to network with those in the field and at school.** Networking isn't just about meeting people but

keeping in touch with those you meet. Work toward developing good relationships, meeting new people, and making meaningful connections because this may be crucial in achieving your future goals. Take advantage of conferences, seminars, and other gatherings at your university and be an active member of professional organizations—each of these provides ample opportunities to make new connections. Talk to your supervisor and other professors in your department because they likely know key people and organizations that may be of interest to you. In fisheries and aquaculture, everyone knows everyone, and this will help when it comes time to applying for jobs and supplying references to potential employers.

- **Get letters of reference from professors lined up well before graduation.** Make sure that your professors give you a good verbal recommendation, too. Employers who are looking to hire often go to aquaculture professors at a few select schools whose programs they trust.

Leadership Experience

With a higher education, the jobs you seek will most likely require you to lead or manage one employee or several others on a regular basis. Getting experience through holding leadership positions and advising technicians and undergraduates is a great way to show potential employers that you are capable of doing that. Taking a leadership position in the graduate student association or other graduate student clubs can be a good way to gain such experience. Hiring technicians to help you conduct your research gives you valuable hands-on experience with mentoring, advising, and teaching. Many programs will already have funding to hire technicians to help with various aspects of research projects, but if yours does not, you can write a small grant proposal to support hiring a technician and develop your writing skills in the process! There are many sources of funding available that could be used for this purpose.

Organization

Being organized and timely will be integral to your success in grad school and in your future career. As you advance in your education and professional career, you will gain more responsibilities and have more and more tasks to fit into your busy schedule. There will always be deadlines and timelines that must be met, and getting a head start on managing your time and resources effectively could make or break your graduate or professional education. Be sure to think ahead because time will fly by and deadlines and opportunities will pass you by in the blink of an eye if you are not careful. Here are a few tips to keep in mind.

- **Plan and schedule your daily, weekly, and monthly tasks.** Be knowledgeable of specific deadlines set in place by your department or university. Ensure that paperwork is prepared well in advance to allow ample time for processing and review by your advisor, committee members, and university officials.
- **Prepare/think about your next step.** Do you know what to do after graduation? No? Don't worry, but you should spend some time strategizing your next steps. You should at least have some idea in mind of a general direction or area of interest that you want to pursue. Start searching for jobs and graduate positions that appeal to you. This can help guide you in making this decision.

Table 1. Top 10 things to keep in mind as a graduate student.

1. Get professional experience (internships)
2. Develop your skills (writing and speech)
3. Network
4. Get leadership experiences
5. Be organized
6. Get involved and be an active member of a professional organization or other community
7. Get practical experience (attend specialized training)
8. Be collaborative (participate in side projects)
9. Get education & teaching experiences
10. Find a program you can be passionate about

- Find out what you need to be prepared (example: develop a good CV or résumé, practice a second language, etc.).
 - Work on your CV/résumé and practice interviewing.
 - Find employers or organizations that focus on your specialization, etc.
- **Start applying for jobs, Ph.D. graduate programs, post-doc positions (whatever your next step will be) at least six months before you graduate.** Securing a position often takes time, not only because you might not get the first one you apply for, but because the application and review process is often time consuming. If applying for a Ph.D. or post-doc position, try to define your project before entering the program because this can save you time and avoid inconveniences. The World Aquaculture Society (was.org), American Fisheries Society (fisheries.org), and USA Jobs (usajobs.gov) websites are all good places to look for jobs and educational opportunities.

Involvement/Commitment

Get involved. Your first priority should be to fulfill your responsibilities to your advisor and the graduate program, but in the remaining time, join clubs and volunteer to help with other students on their projects. Helping with other students' and professors' research will give you valuable, diverse, hands-on experience that could set you apart from other job-seekers/applicants in the future. Showing initiative and volunteering your time shows commitment and will help you gain valuable contacts and references.

Practical Experience/Specialized Training

Take advantage of all opportunities that come your way, so participate, collaborate, and attend specialized courses and workshops. Look for workshops and certification classes in your area of interest and get as much experience as you can! Try to find time for specialized trainings that provide credible certifications. Some examples include the following:

- Boating and electrofishing safety, usage of statistical and modeling software (e.g., SAS, R, GIS), commercial diving, etc.
- Take a few business courses to understand a basic business plan!

During the graduate program we are busy, but taking advantage of travel opportunities can be a good way to recharge your batteries, visit a new place, volunteer and gain additional skills, etc. After graduate school, opportunities to travel may be fewer and obligations related to your job, family, etc., may make it more challenging to take advantage these opportunities. Don't be afraid to get out of your comfort zone. Go explore and gain new experiences, both professional and personal.

Collaboration

Work on side projects (outside of your thesis/dissertation research) **and be open-minded and ready to learn** in order to expand your knowledge base. This can include helping other students/professors with their research projects or taking the lead on a project outside your comfort zone, working with others more familiar with that field. Be proactive; don't think small. Diversifying your experiences will make you more marketable and capable in the long run.

Education/Teaching

As mentioned earlier, being able to effectively convey your research to a variety of audiences is integral to achieving success in your future career. The best way you can better prepare yourself for this is to teach. Professors spend a good portion of each semester preparing, presenting, and grading for the classes they teach. Those graduate students who serve as teaching assistants know how much time is invested in and outside the classroom. Offering to cover a lecture or two for your advisor will make his week—maybe even their month! It saves him time and allows you to get practical experience teaching others. This will also be a good opportunity to receive constructive feedback on your teaching methods. Other ways to get teaching experience include volunteering to work summer camps and workshops that many universities host.

Passion

Choose an advisor whose mentoring style meshes well with your needs as a student and a thesis/dissertation that you can be passionate about. No two advisors or graduate students are exactly the same, and it's important to make sure that you discuss your expectations/needs with your advisor and clearly understand her expectations/needs. Initiating and maintaining an active line of communication with your advisor (or prospective advisor) doesn't guarantee an easy path to success, but it does guarantee that problems will be identified early when it's easiest to address them. It isn't always possible to do exactly what you want for your graduate work, but you should pursue an advisor and project that you value and can enjoy. If your project is not compelling to you, it will be that much more difficult to put in the time and hard work needed to successfully complete your degree.

CONCLUSIONS

The decision to attend graduate school is not an easy one, and advanced degrees are not easily earned. Graduate students experience stress but can also enjoy camaraderie, fellowship, professional development, mentoring, and the unique and powerful experience of learning through research and the creation of new knowledge. The tips and considerations presented here are by no means a comprehensive list but will hopefully help you navigate these sometimes murky waters with greater confidence and success. **AFS**