How to Find a Good Graduate Advisor and Make the Most of Graduate School

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When graduate students gather, a few common conversation themes repeat themselves. On a good day there might be discussions of fresh data or a recent paper. On a bad day, there might be complaints about field assistants or projects that are not going according to plan. Consistently, however, the conversation winds its way back to advisors, because graduate advisors play a critical role in the success of graduate students and in the overall graduate school experience. Along with lab mates, the graduate advisor is the person with whom students will interact the most during their academic careers. Some students conducting fieldwork may even find themselves living and working in close quarters with their advisor for extended periods of time. Given the length of graduate programs, choosing an advisor represents a long-term relationship, and the success of a student is dependent on this relationship.

For my Ph.D. program, I am fortunate enough to have input from two scientifically experienced advisors, and this has improved the quality of my research. Each supervisor has offered different opportunities and presented a different skill set, enabling me to gain more from my Ph.D. experience than I could have with either advisor alone. However, like many prospective students looking to start a graduate program, I will admit that I chose my advisors based on the thesis project, rather than on specific advisor qualities. It was only as my Ph.D. progressed and I was exposed to more research and different supervisory styles that I began to appreciate the good relationship I have with both advisors. So how can prospective students select a project and determine how compatible they will be with a potential advisor? And for current students, what can be done to maximize the graduate student experience, with or without a good advisor?

WHAT MAKES A GOOD ADVISOR?

Most of us have a good idea of what research questions we are interested in, and we understand what we are looking for in a graduate program and thesis project. However, it can be challenging to articulate the qualities that we seek in a graduate advisor.

In an ideal world, an advisor should provide their students with the academic, financial, and personal support that they need to excel in graduate school. The advisor should have the academic qualifications and skills necessary to help you ensure that research projects are properly planned and executed, that the data are properly analyzed and interpreted, and that the re-

The author having fun with sockeye salmon research at Weaver Creek, B.C.   Photo credit: Sarah McConnachie

sults are written into a cohesive final document that is a useful contribution to your scientific field. An ideal advisor should also have the financial resources to support your research. The level of financial support will vary depending on the institution and your personal funding, but together you and your advisor must be able to finance your research project, as well as your student academic experiences, such as travel to conferences and other laboratories. Finally, an ideal advisor should provide a positive and encouraging environment in which students can learn and develop as scientists and enjoy themselves while doing so. It is important to acknowledge that a good advisor for one person may not be ideal for another; the key to finding a good advisor is to understand your own goals and then find an advisor whose strengths and personality are compatible with those goals.

HOW CAN I FIND A GOOD ADVISOR?

Making a list of your goals and objectives for graduate school and honestly assessing your preferences for supervisory style are the first steps to selecting a good advisor. If strong statistical skills are necessary for your future career aspirations, then it will pay to find an advisor who has a strong quantitative background. Likewise, if you want to improve your ability as a critical thinker and writer, then it will be beneficial to find an

TABLE 1. Questions you might consider asking a potential advisor. This list provides the basics, and you should customize this list by adding questions that are relevant to your own specific interests.

Project
1. What is the available project?
2. What skills can I expect to gain from working on this project?

Supervisory style
3. What is your teaching philosophy?
4. How would you describe your supervisory style?

Expectations
5. What do you expect from your students (daily, monthly, yearly)?
6. What support and resources can a student expect from you (daily, monthly, yearly)?

Collaborations and student experience
7. Do you maintain active collaborations and involve students in collaborations?
8. Do you encourage conference participation and other academic travel?

Funding
9. Is project funding guaranteed for the project term?
10. What are the obligations to the funding agency for this project?
11. Do you have money available for conferences and other academic travel?

Track record
12. How many students have you advised? What are they doing now?

TABLE 2. Questions you might consider asking the current and former students of a potential advisor. This list provides the basics and you should customize this list by adding questions that are relevant to your own specific interests.

Supervisory style
1. Does your advisor have enough time for the number of students in the lab?
2. Does your advisor motivate by encouragement or criticism?
3. How does your advisor react to mistakes and accidents (e.g., breaking equipment)?
4. Will your advisor allow you to take risks and try your own research ideas?
5. Will your advisor step in and help you out if your research is not going well?
6. Will your advisor push you to develop new skills?
7. Does your advisor hold regular lab meetings? What is the format of lab meetings?
8. Does your advisor have good ideas and share them openly?

Expectations
9. What are your advisor's expectations?
10. Does your advisor give you feedback on written work within a reasonable time frame?
11. Does your advisor provide constructive comments on ideas and written work?
12. Is your advisor directly involved with your research? Will your advisor directly teach you technical skills or research techniques?

Student experience
13. Does your advisor maintain active collaborations and involve you in collaborations?
14. Does your advisor give students the chance to develop their own collaborations?
15. Does your advisor encourage field trips to other laboratories?
16. Does your advisor send you to conferences and go with you to conferences?

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who is involved in the day-to-day activities of student research.

After you have made a list of your goals and objectives and have identified the supervisory style and personality traits that are most compatible with you, the second step in finding a good advisor is to ask questions. Asking questions helps ensure that your prospective advisor meets your criteria and is willing to help you meet your goals. It is important to talk to potential advisors and to current and former students. Though an advisor can discuss projects, laboratory expectations, and funding sources (Table 1), talking to current and former students can help you gain an honest perspective on the advisor and working environment. When interviewing, you should ask students about their advisor's supervisory style, his or her expectations, and what the student's experience has been (Table 2). You might also consider speaking to other faculty, in order to understand how your potential advisor is viewed in their scientific community.

WHAT SHOULD I DO IF I ALREADY HAVE AN ADVISOR?

The best part about being in graduate school is the access to resources. As graduate students, we are part of an institution full of potential mentors and collaborators. Each individual in the institution may have some of the qualities that you are looking for in an advisor, and by surrounding yourself with a network of people who can contribute to your project you can build an excellent graduate experience even if your advisor is less than ideal.

Most graduate students have a thesis committee, which is an excellent place to start if you are looking for additional intellectual input or skills that can be used in your project. Another great place to start is with senior graduate students in your own or another lab. These students may already have some knowledge and interest in your research project and can offer extra perspective and experience. By casting a wider net within your institution, you can find professors from within or outside your department with research skills that can contribute to your project. If it is not already in place at your institution, you might consider starting a journal club or getting more involved with societies such as the American Fisheries Society. By interacting with students and scientists in your

advisor who is willing to help you develop these skills. If you want to learn a specific technique, then you will likely choose an advisor based on the tools they can access and teach you. Also consider the importance of matching your own personality type to your advisor. Many prospective students forget to account for this attribute. If you are an independent person, you might prefer an advisor who allows students to make their own decisions and dictate the direction of their research projects. However, if you like to receive regular feedback and discuss research projects frequently, it may be better to find an advisor

field, you will meet other people with similar research interests and create countless opportunities for new ideas and fresh input into your project.

As graduate students in fisheries science, we are also in a great position to collaborate because we can look beyond the borders of our academic institution. Government agencies, for example, might contain researchers or managers who are often willing to help with the specific skills that you need to learn for your project. If your advisor already has existing collaborations, this will make it easier for you to find outside researchers with similar interests and research goals. However, you can make your own connections even if your advisor does not have established collaborators. There are student grants available to support collaborative research with other laboratories. By obtaining a student research grant, you can fund your own research trip and start to build your own skill set and collaborative network. Bringing in an outside researcher is an excellent way to improve your own project and an invaluable opportunity to network and make connections for employment opportunities.

MAKING THE MOST OF GRADUATE SCHOOL

Finding a good advisor is an excellent foundation for a positive graduate school experience. By understanding your own priorities and asking questions, it is possible to find an advisor who will help you reach your academic and professional goals. However, graduate students can also benefit from informal and formal collaborations with other scientists. No matter who your advisor is, you can benefit by working with as many different people as possible throughout your graduate experience. These interactions will help you develop skills, give you more experiences, and allow you to have a better scientific perspective.

NEW AFS MEMBERS

Kamal Alsharif	Jonathan Fearns	Sean Naman
Ian Anderson	Michael Geenen	Scott Nichting
Justin Angevaare	Ellen George	Richard Norris II
Reid Armstrong	Dana Giffen	Emily Overcast
George Barton	Melissa Giresi	Allen Palmer
Joshua Beaulaurier	Kevin Grand	Jesse Ray
Rebecca Becicka	Brian Hammond	Toomas Saat
Thomas Binder	Stephen Hampton	Lorraine Sawdon
Ademola Borode	Margaret Harings	Anna Scherer
Jennifer Boyko	Levi Hay	Maria Serrano
Karl Brenkert	Anthony Honick	Ashley Shaw
Deborah Bruce	Matthew Horton	Jason Smith
Christina Cappelli	Patrick Kennedy	Scott St. Jean
Marla Chaney	Elliott Kittel	Matthew Streich
Caroline Cherry	Peter Lamb	Madyson Stubbs
Kyle Chezik	Kevin Lamontagne	John Swenarton
Pete Cott	David Landkamer	Ahmed Quazi Taslim
Dan Cramer	Jonathan Leiman	Heidi Tillquist
Dale Dalrymple	Andrew Lervick	Bruce Tufts
Robert DeVries	Margaret Luebs	David Ulrich
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Martin Donley	Olivier Morissette	Amy Welsh
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Brad Farwell		