

## **Looking Beyond the Border: Advantages and Challenges of Moving Between Canada and the United States for Graduate Studies in Fisheries Science**

For university graduates who are considering postgraduate degrees in fisheries research, choosing a graduate path is often a difficult decision. Students must select a research topic, a potential supervisor, and a location that suit their interests and goals. Consequently, aspiring graduate students tend to ignore international programs and instead look for domestic opportunities to simplify this difficult decision (i.e., many aspects of the domestic process are similar to the student's undergraduate experience, assuming that the majority of students complete their undergraduate degrees at domestic institutions). In doing so, students limit their full range of options for graduate studies. The purpose of this article is to discuss graduate education opportunities in fisheries science in Canada and the United States, and to describe some of the issues that may influence students when they are making decisions about graduate schools. We submit that aspiring graduate students should consider all possible avenues for graduate studies, and should look beyond domestic institutions to find the graduate program that fits best. In practice, we advocate that students also consider institutions beyond Canada and the United States, but our experience is derived from our collective experience in these two countries.

### **FISHERIES-RELATED DEGREES AND DEPARTMENTS**

To begin with, students are often frazzled by the number of graduate programs available to them, especially if they consider graduate programs in both Canada and the United States as possible opportunities. For those students seeking fisheries-related degrees, it is difficult to narrow the search for a graduate program because there are few explicitly fisheries-titled degrees. Often, prospective fisheries students search for degrees in fisheries-related disciplines, such as

zoology, biology, natural resources, ecology, or evolution. However, rather than search for opportunities by looking at titles of departments or degree programs, a better method of university or college selection might be done by the student reviewing papers of interests and contacting those advisors that focus their research on similar interests. Other options for seeking graduate opportunities include contacting current graduate students in a program of interest to you, seeking advice from professors and other students at your current institution, and searching the web for online graduate postings (e.g., *Fisheries* magazine and the AFS website, [www.fisheries.org](http://www.fisheries.org)).

### **ADMISSIONS REQUIREMENTS AND FUNDING**

In both Canada and the United States, satisfying admissions and funding requirements are two of the most challenging aspects of beginning graduate studies. Throughout North America, there are two main requirements of admission to a graduate program: a minimum grade point average (GPA) and approval from a potential supervisor. It is important to recognize that the term GPA is rarely used in Canada. Similarly, courses are rarely described in Canada in the context of "credit hours." However, admission office personnel can help you to determine how your grades (whether letter, percentage, or one of many GPA scales) translate into a meaningful value at a prospective institution. Some differences exist between Canada and the United States with respect to additional admissions requirements, including the requirement to take the Graduate Record Examination (GRE) test in the United States, or more emphasis on the student's ability to obtain external funding in Canada. The GRE is not used by many (if any) Canadian institutions for admission. However, in the United States, most institutions require a mini-

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mum score in several subject areas (the prospective supervisor [U.S. or Canadian] may require considerably higher GPA and GRE scores than the institution).

In the United States, substantial funding for graduate students is provided as salary derived from grants to supervising professors, while in Canada, funding for graduate students is provided primarily through teaching assistantships and external scholarships awarded to the student. Funding for fisheries graduate studies can come from a number of sources within both countries, including institutional awards and bursaries, or funding from both private and public external agencies. The National Science and Engineering Research Council (NSERC) in Canada offers a number of awards to Canadian citizens wishing to pursue graduate studies both within Canada and at international institutions (with adequate rationale). The National Science Foundation (NSF) offers few, but lucrative, awards to U.S. citizens; however, these awards cannot be held outside of the United States. After acceptance to a graduate degree program within either country, foreign students can apply for and obtain multiple awards to help defray the cost of studies. For instance, foreign students wishing to do

fisheries graduate studies in Canada can apply for provincial scholarships, such as the Ontario Graduate Scholarships (OGS). Additionally, numerous funding options exist in the form of industrial partnerships and internal scholarships at most universities. Other financial support can include internal university tuition waivers to accepted students, further subsidizing the cost of graduate studies. Once accepted into a graduate program in either country, there are many opportunities to apply for smaller scholarships, bursaries, and travel grants from fisheries-specific organizations, including the American Fisheries Society (AFS) as well as overseas groups, such as the Fisheries Society of the British Isles. Fulfilling admission requirements and securing research funding are necessary for acceptance into a fisheries-related graduate program.

### RESEARCH-TO-COURSEWORK RATIO

Another important consideration when choosing between Canadian and U.S. fisheries graduate programs is the relative emphasis on research (i.e., thesis work) versus the emphasis on coursework. It is important to note that in both countries, some institutions offer exclusively course-based (i.e., non-thesis) graduate programs (usually in resource management or policy). The direction of the research-to-coursework ratio is generally student-specific, as some students will prefer degrees that favor one over the other, based on their learning style and previous experiences in these two different areas. Canadian universities typically emphasize research over coursework, with a higher proportion of time being allocated to research activity (including experimental design, project implementation, analysis, etc.). In general, at the master's level, U.S. universities often have similar expectations for research, but usually require a relatively heavier course load than Canadian universities. As such, students at U.S. universities can find themselves

managing their time strictly to be able to satisfy all of these requirements simultaneously. Obviously these differences can impact the duration of a degree program. Regardless of whether a student pursues domestic or international studies, recognizing these differences and choosing a fisheries program that is suitable to the student's needs and abilities is necessary for success.

### CHALLENGES OF INTERNATIONAL STUDIES

Perceived complexities related to immigrating and living in a foreign country may result in potential graduate students attending domestic institutions rather than moving internationally. After acceptance to a program in a foreign country, students must be able to obtain a student visa enabling them to legally study and earn wages in said country. Both the Canadian and U.S. governments offer guidance on the application process for students wishing to pursue studies in their country, including comprehensive instructions on obtaining proper immigration status in the form of visas (see Table 1). Briefly, multiple requirements need to be satisfied (for example, proof of personal funds, medical examinations, and references) to obtain a visa. This process may take a considerable amount of time, and while most universities aid in this process, it is in the best interests of an immigrating student to become familiar with and commence the immigration process with a sufficient amount of time prior to the anticipated start of studies. After obtaining a valid visa, living in a foreign country also has its challenges. Students must obtain social security numbers (USA) or social insurance numbers (Canada) to be eligible to receive compensation, and pay taxes, for work at the university. Additionally, students will be required to sort out issues with obtaining health insurance (most often advised through the foreign student relations office at the university),

driver's license (through provincial or state governments), housing (through either campus housing or local classified listings), health checks (which might include updating or receiving immunizations), etc. Typically, these processes are one-time ordeals that are time intensive prior to and during the first months of a student's studies. Fortunately, most of these tasks end shortly after arrival, allowing the international student to focus on their studies. Thus, while appearing to be daunting at the time of application, students should not let these concerns negatively influence decisions regarding which fisheries graduate opportunities they want to explore on either side of the border. Taxation issues are also not as complex as one might believe (at least between Canada and the United States) due to tax treaties.

### CONCLUSIONS

Although some differences exist between the U.S. and Canadian postgraduate systems, one fundamental truth surrounding graduate studies remains universal—whether studying in Canada or the United States, there is a plethora of valuable opportunities that can enrich the graduate experience. Choosing a suitable graduate program is a difficult decision regardless of what country a student is from. Often the decision is made to study at a domestic university instead of internationally for the sake of convenience or fear of the unknown. We argue that while there are often challenges associated with international studies, students should consider all venues on both sides of the border. Students looking for further advice on postgraduate studies should consult the *AFS Guide for Fisheries Employment* (second edition) edited by David Hewitt, William Pine III, and Alexander Zale. Studying at an international university can enrich a student's existing academic and cultural background in ways that domestic experience cannot.

**Table 1.** Useful links for pursuing postgraduate studies in Canada and the United States.

#### Government

Studying in Canada	<a href="http://www.cic.gc.ca/english/study/index.asp">www.cic.gc.ca/english/study/index.asp</a>
American Immigration Center	<a href="http://www.us-immigration.com">www.us-immigration.com</a>
Social Insurance Number: General Information (CAN)	<a href="http://www.hrsdc.gc.ca/en/gateways/topics/sxn-gxr.shtml">www.hrsdc.gc.ca/en/gateways/topics/sxn-gxr.shtml</a>
Social Security Online (USA)	<a href="http://www.ssa.gov">www.ssa.gov</a>

#### Funding

National Science and Engineering Research Centre (CAN)	<a href="http://www.nserc.gc.ca/index.htm">www.nserc.gc.ca/index.htm</a>
National Science Foundation (USA)	<a href="http://www.nsf.gov">www.nsf.gov</a>

#### Other Useful Web Pages

Graduate Record Examinations	<a href="http://www.ets.org/gre">www.ets.org/gre</a>
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