

# Sarah's Tips for Entering The Wondrous World of Ecological Research

## So you're into biology and you think you might want to get some field experience or maybe go to grad school?

Well, there are a few different approaches you could take to getting more involved in ecology research. First, it is always a great idea to volunteer in a lab at your undergraduate university to get some experience with scientific research and to make networking connections for future job/scholarship/graduate school references.

If you're interested in getting ecology fieldwork and research experience as summer jobs, then 2 great options are working with a prof or working as a seasonal field technician. One possibility is to obtain an NSERC USRA; these are summer scholarships that support a student working with a prof with the goal to encourage students to pursue a career in research. For more information on positions available in a given year, contact the Biology Office. For seasonal fieldtech gigs, 2 of my favorite websites for job postings: <http://www.osnabirds.org/jobs.aspx> <http://wfscjobs.tamu.edu/job-board/>

The second website is also a good place to look for MSc positions. These postings are the rare case when an MSc position is actually posted somewhere like a job. Seeking out graduate positions is a funny business. There is no standardized approach. Mostly, you just search around until you find something interesting, and then contact the prof to ask if they'd be interested in taking you on as a student. Generally, you shoot them an email giving a brief description of who you are and why you'd be a good fit in their lab, and wait to hear back. Sometimes you do, sometimes you don't. If you do, then you have to officially apply to that school's graduate program, with your potential supervisor signing off that they've agreed to take you on if you get accepted. There are more details below.

Then there is the third aspect - funding. Research grad students in science are paid a guaranteed stipend. This means that if a prof takes you on, they are committing to paying you. They don't love this. Sometimes if a position is posted somewhere, they have already secured funding to pay a student, but this is not the usual. The sure-fire way to get into the lab you want with the supervisor you want is to come knocking on their door with external funding in hand. This is almost always in the form of an NSERC scholarship ([http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/index\\_eng.asp](http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/index_eng.asp)). NSERC applications are due in October. This means that if you want to start grad school in September, its great if you have applied for an NSERC scholarship in the previous October (you get word of competition results at the end of March). You can also apply after you begin your graduate degree, but it's nice to secure one beforehand. NSERC applications require references. This is where volunteering in a lab or having a research summer job really comes in handy. NSERC applications also require a research proposal. This is just a short one-pager, and you are not bound to actually carrying out that research. It is more of a way to showcase your ability in thinking like a scientist. You also need to include a potential supervisor on your application. Again, you are not bound by this if you are given the scholarship. It is a silly process, but this is how we do it.

So, when you start asking around to potential supervisors, depending on the timing, you can tell them you are: 1. planning on applying for NSERC and believe you are a good candidate, or 2. have applied and are waiting to hear back, or 3. have one! woop woop!

Okay, so another detail is that if you are awarded an NSERC, you can defer it for up to a year. This means you could apply early and if you got it, you could just sit on it. Not a bad plan if you think you want to go to grad school. You have time to secure funding, and to think about what you might like to work on, where you might like to go, and who you might like to work with.

**SO here are some ideas of how to get started in your search:**

### **1. By fieldwork location.**

If you have a place in mind that you'd like to work, google it, then follow the trail to scientists who work there, and what universities they are affiliated with.

ex. I love Algonquin Park in Ontario so I google research in Algonquin. I come up with <http://www.algonquinwrs.ca/>. I navigate to the 'Research' section and find there are a number of ongoing longterm research programs in different areas. The small mammal program sounds awesome so I go there. This takes you to the scientist's webpage for his lab at the University of Guelph <http://www.uoguelph.ca/~amclab/amclab/Home.html>. This is Andrew McAdam, a good friend of mine who works on adaptation in a number of different organisms, including small mammals in Algonquin but also a really cool field site in the Yukon called Kluane with Red Squirrels (where a number of my friends have worked and loved it). And, like most profs and their lab websites, he has a tab for prospective students too. This is where you'll find specific directions from the prof for how they like to be approached by students. Andrew also has a posting up on this page right now for an MSc position working on metacommunity ecology, as well as details on how to get started as a field tech in his lab. Boom. One example of following the trail.

### **2. By university.**

If you'd like to work out of a certain university, google their Biology Department webpage and follow the trail.

ex. I love Dal. I find <http://biology.dal.ca/>. Look for the Faculty and Staff Directory. Each Faculty member name is a link to their personal website. Cruise through and see if anyone works on something you'd be interested in. Dr. Boris Worm seems like an interesting name, let's check that out. <http://wormlab.biology.dal.ca/>. Wow, seems they work on some really interesting large scale topics - marine conservation and management. Now Boris doesn't have a 'Prospective Students' page, but he does have a contact info page, so you'd just have to follow up on your own in this case.

### **3. By research topic.**

So you're interested in physiology? And maybe bird physiology? Okay. Let's see what a general google search of 'avian physiology research canada' gets us. The 'Advanced Facility for Avian Research' seems interesting. And it's in London, Ontario. <http://birds.uwo.ca/AFAR/Welcome.html>

Their research topics sounds fascinating  
[http://birds.uwo.ca/AFAR/Research\\_Topics.html](http://birds.uwo.ca/AFAR/Research_Topics.html)

Dr. Chris Guglielmo works on some neat topics, and his publications sound interesting. Follow the trail and find his contact information. Email him to see if he is taking on new students next September, what kinds of projects he has in mind, etc. I know Beth in his lab and I've worked at Long Point Bird Observatory for him - he has a converted RV that he has made into a mobile bird lab. It has an MRI scanner in it. We would catch small songbirds, pop them into a tube and into the machine, scan them for body composition (muscle, fat, water, etc) then let them go out the window. It was really cool.

You know where to find me if you need any additional help:  
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