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# THE DREW LAB AT COLUMBIA UNIVERSITY

## ECOLOGY, EVOLUTION AND CONSERVATION OF CORAL REEFS

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## Why you should consider doing a Master's first.

### Why do an Master's Degree



A major part of my job at Columbia is directing the MA in Conservation Biology program, and I have spent the better part of this past week going through applications. One of the biggest challenges I am facing is getting the students I want in my lab to come here. Columbia is expensive and I am often competing for students who are probably going to get into Ph.D. programs. Discussing this with my peers over Twitter has brought me to a debate over the relative value of getting a Master's degree first versus going directly into a Ph.D. program. I'm hoping one of you takes up the Ph.D. option and we can have an honest discussion. As for me, I'm going to present the case for getting a MA/MS first.

I think getting an Master's offers several benefits\*. First it **provides a 'trial run'** at grad school, second it provides a **breadth of classes** not often found in Ph.D. programs and lastly upon graduation you will have a **much stronger chance of getting into a Ph.D. program**.

[Trial Run](#). Many students upon leaving their undergraduate school do not know if they want to go directly into a Ph.D. program. This may be especi

if they are coming from a small liberal arts college where they may not have been raised in an academic environment with graduate students and post-docs. They may think that they like research but haven't had a chance to direct their own project yet, or they may have done a senior thesis but are curious to see what it is like to do research in a less directed fashion. For these students obtaining a Master's degree is a great option. It allows them to go through two years of graduate school with a clearly defined out. If, after those two years they want to continue they will be more competitive for Ph.D. applications (see below). On the other hand, if after the experience, they realize that research isn't for them, they can leave, with a degree, and having not sacrificed the better part of their 20s. It's sort of like the "lunch and a movie" kind of date. If you like the person after lunch you can continue onto the movie, if you realize mid appetizer that it's not going to work, you have a clear time to make a break for it.

**Diversity of classes.** Master's programs often have a heavy course load. This gives students an opportunity to take a diversity of classes that they may not have picked up during undergrad, giving them a breadth of information and the ability to synthesize across disciplines. Often in Ph.D. programs the classes are limited since students are expected to focus so intensively on their specific thesis project. The master's might be the last time a student can take classes in History, Anthropology and Policy if you are a biology major\*\*. These classes may also more fully develop a skill set obtained in undergrad (such as intermediate and advanced classes in GIS or Phylogenetic Analysis) giving the student more technical competency, especially with their own datasets. Finally if a student graduated undergrad with a less than stellar GPA, doing well in Master's program is a great way to prove your intellectual chops.

**Improving your chances.** Getting into a Ph.D. program is incredibly difficult. Most programs have about a 10% acceptance rate. For students who are not in those upper echelons going to a master's program may provide an opportunity to move up in the rankings. There are two major forms of currency in academic science, funding and publications – students who have a strong record in either (or both!) will be much more competitive than those who do not. A successful academic MA will result in hopefully one or more first author publications for the student, which will demonstrate to Ph.D. selection committees that the student understands the scientific process from start to finish. Additionally, since the research that those projects are based on is not free, the student will probably have applied for (and hopefully obtained) funding. Demonstrating the ability to obtain independent funding will be a huge plus for Ph.D. selection committees, as it means that potential advisers will not have to deplete their own coffers to support the student.

Being able to both secure funding and to publish work based on that funding is a clear indicator of future success in both graduate school and in the academy beyond. Most undergraduates will not have had this opportunity and this ability to serve as a proving ground, is perhaps the strongest advantage of doing a master's first. For this reason it is not uncommon for many Ph.D. advisers to not consider applicants unless they have obtained a master's first.

**Conclusions.** Now this is not to say that obtaining a master's is without downsides. There are very real costs in terms of both time and money to doing a master's program, and they are not for everyone. In some disciplines (such as neuroscience or molecular biology for instance) one can work as a lab tech for a couple years after grad school to obtain a few publications and research experience. But in ecology and evolutionary biology these options are less common. **Like all aspects of graduate school there is no clear and universal path for every student.** Students must do what they think is best for themselves. However I feel that there is real benefit in obtaining a Master's first for most undergrads interested in research. Regardless of which of the varied paths you take, please talk to advisors, potential research mentors, peers and alumni. If you can visit do so, and trust yourself. Being in a place where you are not a good fit can make grad school feel like hell. Being in a place where you are supported, wanted, and encouraged (cough, my lab, cough) can make all the difference in the world.

\* Obviously I'm biased here, I run a MA program, but to keep this from being a commercial for the Columbia University master's program, I'm keeping the discussion general

\*\* This will vary from Ph.D program to Ph.D. program. In general though they have more limited breadth requirements than MA programs do.

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## 10 Comments

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**Elena Bennett**[JANUARY 19, 2013 AT 6:16 PM](#)

I often encourage students to do an MSc in my lab before doing a PhD in my lab. Why? In addition to everything you wrote here, It doesn't slow them down (students doing both MSc and PhD in my lab finish, on average, just 1 semester later than those just doing a PhD in my lab); they graduate with more papers than if they had just done a PhD, which makes them more competitive for postdocs and faculty positions; and if something goes wrong (death in the family, serious illness, etc.) they have a convenient stopping or resting point that doesn't require a lot of University paperwork.

**Algae Girl (@algaegirl328)**[JANUARY 19, 2013 AT 6:21 PM](#)

This is definitely true and a great post!

I did my undergrad at a major research uni and still wasn't sure about grad school. My MS program gave me the experience (classes, research, publications, funding, contacts) necessary to be really competitive for PhD programs. I wouldn't be where I am without my MS program!

**butterflydoc**[JANUARY 24, 2013 AT 8:31 PM](#)

Interesting. I'm at a primarily undergraduate institution (well, okay, not our actual designation, but in the sciences that's what we are), but I went from undergrad to MS/PhD and never did get the masters (I do have the PhD). In my experience, the masters did not help — at this (top tier) EEB school, those with a masters tended to finish no faster than those without, so the time spent getting the masters (usually elsewhere) was time added to the total.

But... I have sent students into masters and PhD programs, and I agree with a lot of what you've said. For a student who just isn't sure, and maybe isn't at the top of their game at the end of undergrad, a masters' program can be a great way to test the waters. But, for the best students, I'm just not sure that I could make a good argument that it's really worth the additional cost and time.

**labroides**[JANUARY 25, 2013 AT 1:46 PM](#)

Thank you for bringing your perspective to this discussion. I think you have some good points, top tier students are probably going to succeed directly going into a Ph.D. I think the MA is a good option for students who aren't sure they want to go into a Ph.D., who are shifting fields (we currently have a student in our MA program coming to us from film school) or who are interested in working in industry.

I think the biggest take home message is that there is no single path for every student. As advisors we should be aware of the myriad of paths so we can present them to our students and help them make the choice that is best for them.

**Jacquelyn Gill**[JANUARY 27, 2013 AT 9:17 PM](#)

I think straight-to-PhD works if you're 1) exceptional, 2) have experience-related time off (e.g., working for the Forest Service), 3) have good field and lab experience during undergrad, and/or 4) did a senior thesis. I would want at least two of those to be true, I think. Many students I've talked to recently (both for myself, and for my postdoc advisors) are bright and have good experience, but lack the maturity for a PhD; they haven't learned how to be question-driven, or to place their research in the broader context of their field. The MS is a low-risk, high-reward opportunity, because if you decide that grad school is not for you, it's not terribly hard to stick around long enough to finish the MS and the project. A PhD, on the other hand, tends to get bailed on, which can be harder for the student AND the lab (in my experience).

**@Curly\_McGee**[JANUARY 27, 2013 AT 9:29 PM](#)

Great post! I've occasionally found myself envious of those who "fast-track", but for me, there's no way I would've been ready for a PhD program

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coming out of my undergrad. Also, now that I've completed a BSc, MSc, and a PhD at different institutions (with different labs, supervisors, co-grad students), I can say I've really appreciated the breadth in experience and met and learned from (and with) many neat researchers. Publishing during my MSc was a reason I was selected by my PhD supervisors and made me competitive in grant competitions!

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**Jude Keyse**

JANUARY 27, 2013 AT 9:43 PM

I wanted to do a Masters because I didn't want to commit to a full 3-4 years but found funding easier to get for PhD (British student applying for funding in Australia). I'm not sure I regret it, but I imagine it really depends on financial situation a lot of the time.

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**Margaret**

JANUARY 27, 2013 AT 9:51 PM

When I applied to graduate schools, I was actually discouraged from applying for an MS. It was called "a compensation prize" and "not worth it" (I did not end up working in either of those PIs' labs). But I think it's important to note that MS degrees aren't always available. In some departments, advisors are hesitant to accept Masters students, because their investment (supporting students on a grant or TA while they do the required coursework) is too great for the return (papers the students will produce, contributions to big lab projects). This is what I've heard from faculty at several universities. I think it makes much more sense from the students' perspective, but universities and faculty sometimes feel differently.

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**michellespidermonkey**

JANUARY 27, 2013 AT 9:51 PM

In my experience (in Bio Anthro) doing my masters first, and then moving on to a different program for my PhD was a great decision. I definitely agree with points #1 and #3—in particular, doing the masters made me a much more competitive applicant for PhD programs, and I was better prepared for tackling a dissertation. I also think there's also a couple of other benefits you didn't mention. It exposes you to a greater breadth of perspectives and academic environments. The two programs I attended for graduate school exposed me to a much wider variety of theoretical orientations than I would have received otherwise. Additionally, I feel I had a better experience as a masters student in a (predominantly) terminal masters program (there was not a PhD program in Anth, although my advisor did have several students stay on continue working with her in an interdisciplinary EEB program) than did my peers that did their masters within the same program as their doctorates. When there are only masters students, you get more teaching opportunities and faculty are able to give you a lot more attention. However, in my PhD program, there was one significant downside to coming in with a MA from another program—we had to repeat a lot of coursework, and because of this, we ended up with about an extra year of courses compared to students that did both their MA and PhD in the same program.

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**Sara**

FEBRUARY 1, 2013 AT 4:13 PM

I went straight into my Ph.D. from undergraduate – in fact, I could have gone any straighter. I graduated undergrad on Monday and started in the lab (on a summer fellowship) on Saturday. In retrospect, there are certainly pros and cons to going straight in. I suspect if I had done both I would have been in grad school a lot longer, there's the issue of having to apply to more than one program (of course, that diversity can also be an advantage), and everything was covered by research and teaching fellowships. For me personally, I went in planning on a far more academic and research-oriented life path, and found along the way that I really wanted to do something that was more outreach and management related. I could have done that with a Masters, but I like having the Ph.D. in my pocket. One more note re: the exposure to classes – at least in my (our) program, the Masters students and Ph.D. students had the same course offerings.

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