

Interview with Melissa Berning

Tim: Melissa Berning a 2007 Purdue graduate, joining the Purdue school of veterinary medicine class of 2011 this fall. I'm sure that sounds great to you. How did undergraduate research shape her as a student? How did it shape her life goals? Today she will tell us that and more. Melissa take a moment and tell us why did you get involved in undergraduate research?

Melissa: I really just wanted to know what research was like. I've always been interested in science, I participated in science fairs and science olympiad through grade school, middle school, and high school. I think that my interest in research stemmed from that early interest in science.

Tim: How did you go about getting involved and finding a research mentor or research lab?

Melissa: The first thing that I did was talk to Dr. Minchella about it. He has been an excellent mentor for me through the past three years that I've had here and when I decided I had time and wanted to get involved with research I went to talk to him and asked him what do I do. He sent me up to the office to get the list of professors that allow undergraduates to work in their lab and told me to read through that and decide which ones I thought sounded the most interesting. Then the next step he suggested was to email those professors and see if I could set up a meeting with them. I emailed several professors and I set up meeting times with them and went to talk with them about their research. In order to prepare for that first of all I sent them a resume and then second of all I looked up a paper about the current research they are doing so that I would have something to talk to them about. From those professors that I went to talk to I chose one or two to learn more about and then I finally decided to work in Dr. Waser's lab and he and I sat down and worked out a project that I could do for the next two years and got started on it.

Tim: Just to be clear, when you say the office you're talking about the Biology counseling office?

Melissa: Yes, the Biology counseling office.

Tim: How long have you worked in Dr. Waser's lab?

Melissa: I started in January of my Junior year.

Tim: So when you look back to that time and when you think back to when you first started, what misconceptions did you have that you now end up laughing about?

Melissa: I'm not sure that I had any preconceived notions about what research or undergraduate research would be. I don't think that I had anything, I don't think that I had any misconceptions that I laugh about now. I didn't have any idea that my project would be as involved as it is. It's a lot more complex than anything I ever did in middle school or high school.

Tim: How then is the experience different now than when you first started?

Melissa: I have gotten personally much more involved rather than just taking Dr. Waser's idea and processing the data that we already have to answer questions that he wants to ask. I formulated my own questions and am now working in the genetics lab to generate more genetic data so that I can answer my own questions. This summer actually I'm going to participate in the field research part of it and go out to Arizona since it's the population that Dr. Waser has been censusing for almost thirty years. When I first got in to it I was really just working with data that we already had and now I'm a part of generating that data so it's, I've gotten much more involved with the background of the project.

Tim: So you went from a time where you were very dependant upon Dr. Vaser to where now your more independent and can do tasks on your own etc. with his collaboration.

Melissa: Yes, with his collaboration and guidance.

Tim: What would you tell a first or second year Biology student was the best thing about undergraduate research?

Melissa: The first thing is definitely that I got to know my professor Dr. Vaser and the graduate students that I've worked with. They have been a real inspiration and wonderful resource for guidance and for recommendations and other things like that. The second thing that I really got out of it was getting to be a part of science and the scientific process that happens every day at Purdue. I think that the undergraduate research experience offered that to me in a way that I couldn't have gotten it in the teaching labs and in lecture. The third thing that I got out of it that was probably one of the most important things was learning how to solve problems and how to think critically. I learned those skills and I also was able to refine them through the thesis writing process and the poster presentations.

Tim: As you know from being a TI students often want to know what your going to do once you graduate. Can you tell us

a little bit about what your plans are for after graduation and how undergraduate research played a factor in this decision?

Melissa: Well I've been accepted to Purdue's school of Veterinary Medicine so I'm going to go there next year. After my first year you have to wait a year before you can think about anything besides Veterinary medicine but after my first year I would like to consider doing a dual degree program and going for a masters or a PhD as well as a DVM. And before this undergraduate research experience I didn't, that wasn't an option in my mind but I really do think that I'd like to consider staying in an academic environment. One, teaching myself and two, continuing to do research.

Tim: Before I let you go can you describe your research for a general audience ie first year biology majors?

Melissa: Okay. We've been looking into kin recognition and it's affect on inbreeding avoidance in mammals using the banner-tailed kangaroo rat. Mating with close relatives is detrimental to offspring survival in most species. We wanted to know how do small mammals recognize and avoid mating with their relatives. There are several hypothetical ways that relatives recognize each other but our data supported one hypothesis in particular. We determined that banner-tailed kangaroo rats and probably other small mammals recognize and avoid mating with individuals that they've spent a lot of time with in the den environment, particularly the den in which they were born. This is known as recognition by association.

Tim: Thank you very much Melissa Berning. We applaud you, salute you, and wish you nothing but the best next year in vet school.