



Sloan Career Cornerstone Center

Profiles of Biologists



Daniel R. Howard

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EDUCATION	<ul style="list-style-type: none">▶ A.A. in Liberal Studies, 1999 – College of the Sequoias, Visalia, CA▶ B.S. in Secondary Science Education, Biological Sciences, 2002 - Northeastern State University, Tahlequah, OK▶ M.S. in College Teaching of Biology, 2004 – Northeastern State University, Tahlequah, OK▶ Ph.D. in Biological Sciences, 2007 – University of Tulsa, Tulsa, OK
JOB DESCRIPTION	Daniel conducts field and laboratory research focused on questions that investigate how insects receive, process and respond to acoustic and vibrational sensory stimuli in making reproductive, foraging, defensive and social decisions in their natural settings.
ADVICE TO STUDENTS	"Understand that college is merely a portal for the career path you would like to pursue."

▶ INTERVIEW

- ▶ **What fields of biology do you work in?**
- ▶ **Howard:** Animal behavior and neuroethology.

- ▶ **Q: When did you know you wanted to become a Biologist?**
- ▶ **Howard:** Although I began training in the field of biological sciences as a second career, I have been interested in insect behavior since I was a young boy living in the grasslands of central California.

- ▶ **Q: What was your college experience like?**
- ▶ **Howard:** Unlike many others who attend a university directly after high school, I had a non-traditional college experience. I returned to college at the age of 32, after working in the business sector for 14 years. However at that point in my life and career, I found it very easy to remain focused and motivated on my academic and career goals.

- ▶ **Q: Did you incorporate work experiences while you were an undergrad?**
- ▶ **Howard:** My work experiences allowed me to more easily prioritize my academic tasks and set achievable and yet challenging goals throughout my undergraduate years.

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Prepared as part of the Sloan Career Cornerstone Center (www.careercornerstone.org)

▶ **Q: How did you get your first job?**

▶ **Howard:** I graduated with a degree in secondary science education in 2002, and accepted a position as a science instructor at the local high school. I began teaching high school biology and earth sciences in a small town in Oklahoma with a high Native American population, and there began to involve myself and my students in biological field research projects.

▶ **Q: What's the most rewarding thing about being a Biologist?**

▶ **Howard:** After completing a masters degree in my field while still teaching high school science, I left public school teaching to pursue my doctoral degree in biology with support from the NSF Graduate Research Fellowship Program. I had become keenly interested in insect behavior questions during research experiences with my high school students and conducted original research in this field while working on my Ph.D. research at the University of Tulsa. Biology is a tremendously broad field, with countless important and fascinating niches spanning inter-related disciplines such as microbiology, genetics, bioinformatics, evolution, ecology and an endless array of other fields. This allows students and professionals alike to focus their efforts and attention on systems that are of particular interest to the person conducting the research. For me that was insect behavioral ecology. Moreover, this career field allows for research and study in a myriad of fascinating places with tremendously interesting people. While I work out of the University of Toronto now, I conduct research on islands off the coast of New Zealand with the indigenous Maori and in the tallgrass prairie region of the south-central USA with American Indian stakeholders.

▶ **Q: Is there an example you can provide that shows how something you've worked on has positively impacted the world?**

▶ **Howard:** While much of my research is focused on insect communication, I am also keenly interested in conservation issues, and my research has provided insights into management techniques that can optimize the conservation of endangered or threatened species.

▶ **Q: Do you spend a fair amount of time traveling?**

▶ **Howard:** I travel as required to visit my field research sites in New Zealand and Oklahoma, and to attend scientific meetings. In my case, this translates into a fair amount of domestic and international travel.

▶ **Q: Do you have a mentor? Or did you in your college years?**

▶ **Howard:** My mentor is my Ph.D. supervisor, Dr. Peggy Hill. She is a tenured faculty member at the university where I completed my doctoral degree, and continues to provide me with a tremendous amount of support and encouragement in my academic career. Like me, she entered college as a non-traditional student later in life after teaching high school science and thus was able to understand many of the challenges I was facing.

▶ **Q: Do you find yourself working more in a team situation, or more alone?**

▶ **Howard:** In my field I have opportunities to work both independently and in collaborative settings. However, much of my work is completed alone or with a small group of collaborators in the field, so it is important to be able to function effectively in any of these settings.

▶ **Q: Do you find you are able to balance work with social/family life while working in your current job?**

▶ **Howard:** Finding balance is always a challenge, whether one is a student or practicing professional in this field. The important component to this issue is to realize that time spent with family and friends in a non-professional setting is important to maintaining health and happiness. As in any endeavor, achieving balance is key to success in broader terms than just one's career, and this will mean something different to each person. Working in the biological sciences can be demanding and time intensive, and thus seeking to maintain this balance needs to be a focused priority. For me this means allocating time for myself and my hobbies (hiking, kayaking, running) and for my family and loved ones.

▶ **Q: If you had to do it all over again, would you still become a Biologist?**

▶ **Howard:** Definitely! I love my career field and am pleased that I am doing that for which my years of training have prepared me.

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▶ **Q: Did you think that school prepared you for the way the work gets done in the real world?**

▶ **Howard:** I think that the years one invests in college preparing for work and/or research in the biological sciences is valuable in the context of how much one puts into the endeavor. If you strive to become a true scholar in your field, new challenges will only be viewed as opportunities for success rather than disruptive obstacles. While much is learned 'on the ground' so to speak, the training that one receives in the classroom, laboratory and field settings is crucial to laying a foundation for success in the biological sciences.

▶ **Q: Where do you see jobs for Biologists in the future? What should students be doing to prepare themselves to take on those roles?**

▶ **Howard:** I think that future biologists need to continue to be broadly trained to leverage opportunities in a variety of fields. Interests change and opportunities and funding in this field evolve over time, and thus flexibility is important. Saying that, I would strongly encourage young biologists to build a foundation that includes a strong foundation in bioinformatics, biostatistics, and mathematics. These skills can be applied across biological disciplines. Additionally, training in the use of geospatial technologies (GIS) can be very useful in answering a myriad of questions and biologists with these skill sets are in high demand.

▶ **Q: What advice do you have for precollege students?**

▶ **Howard:** Understand that college is merely a portal for the career path you would like to pursue. In a sense it's the admission price for the great show we call life. I have always enjoyed studying insects, and I now get paid to go to exotic locations and observe and study them. By attending college, taking a wide variety of survey courses, and involving yourself in undergraduate research and internships, you will discover which subjects and fields absolutely fascinate and consume you. Then take the time to learn what you need to do to work in that field and do it. This sounds simplistic, but if I and countless others can accomplish this, so can YOU!

The Sloan Career Cornerstone Center is an ever-expanding resource center for anyone interested in exploring career opportunities in computing, engineering, healthcare, mathematics, science, and technology. Explore degree fields along with comprehensive education, salary, networking, job hunting, and career planning resources. Browse interviews with hundreds of people who offer candid insight into their own diverse careers. Many resources are in PDF, PowerPoint, or Podcast formats.