Spring 2011

Transaction

Science Edition

Fellowship sends student to work in D.C.

By Janette Artea
Contributor

When Austin Cook-Lindsay arrived on Baylor's campus his freshman year, he was undecided about his major.

However, having participated in sustainability efforts during his high school years, Cook-Lindsay saw a major in environmental science as a good pick.

"When I enrolled at Baylor as a freshman, I signed up to take the Exploring Environmental Issues class (ENV 1301) with the corresponding laboratory and I was instantly hooked on Environmental Science," Cook-Lindsay said. "I definitively decided to pursue it as a major during the spring semester of my freshman year."

A recipient of the Environmental Protection Agency Greater Research Opportunities for Undergraduates Fellowship, Cook-Lindsay interned in Washington, D.C. with the EPA's Office of Pollution Prevention and Toxics last summer and was exposed to the process of research. While interning, he studied the science that goes into making regulatory decisions under the United States Clean Water Act.

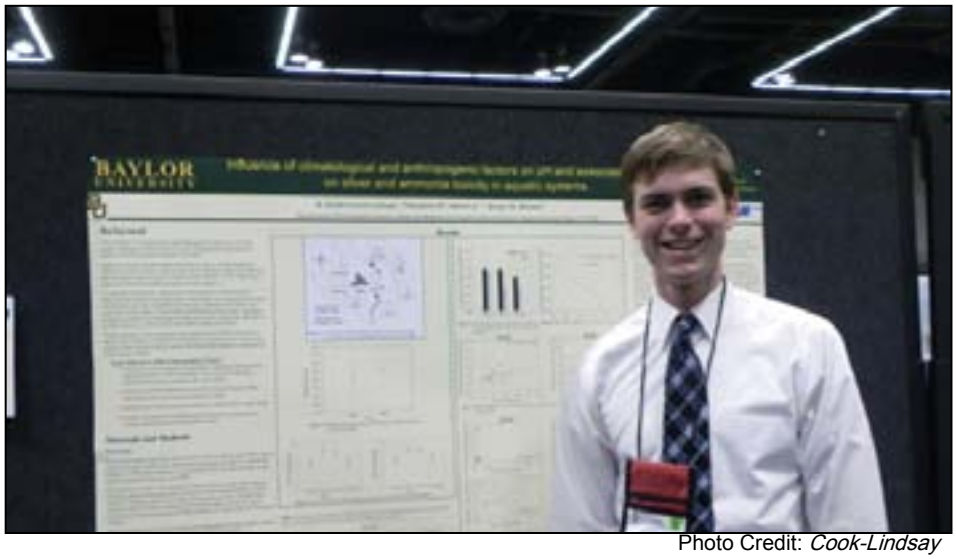

Photo Credit: *Cook-Lindsay*

Cook-Lindsay 's abstract was accepted to the Society of Environmental Toxicology and Chemistry's 2010 North America meeting in Portland in November.

"Primarily, my research has been concerned with the synergistic interplay of environmental contaminants and abiotic ecosystem factors such as urbanization gradients and climate variability, which have the potential to drastically alter the bioavailability of pollutants to aquatic organisms, and negatively impact human well-being," Cook-Lindsay said.

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What types of scholarships are available?

Barry M. Goldwater Scholarship

The Goldwater award encourages excellence in science and mathematics. Candidates must have outstanding potential, research background, and a desire to pursue research careers in one of these fields. Each scholarship covers eligible expenses for tuition, fees, books, and room and board, up to $7,500. Applicants must be sophomores or juniors; have a college grade point average of at least a "B"; and be a US citizen, US national, or resident alien. Deadline falls in early January.

Fulbright Student Program

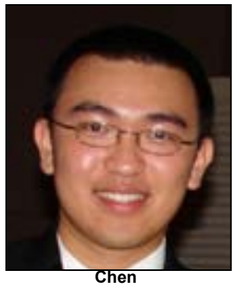
The Fulbright Grant is awarded annually to graduating seniors, young professionals, artists, and graduate students to study in over 140 countries. Applicants must in most cases be proficient enough in a language of the host country to communicate with the people and carry out the proposed study. University deadline falls around mid-September every year.

Contact Dean Elizabeth Vardaman (254) 710-4176 for further information on these programs.

Application sent, the waiting begins

By Jack Chen
Contributor

When I first heard about the Fulbright Scholarship I didn't consider applying for it. It wasn't until my junior year at Baylor that I realized I wanted to apply for an Employment and Training Administration, or ETA grant in China. A good friend of mine was going through a similar process when he introduced me to Dean Vardaman.


Chen

Meeting with Dean Vardaman helped me see what it was I wanted to focus on. I remember in second grade, I wanted to be a missionary doctor and I had a curiosity for herbal medicine. I recall learning about making home-herbal remedies as a child. I immediately drew up a proposal on integrating traditional Chinese medicine.

Growing up, my mom and I once made a cough suppressant/chest expectorant from loquat leaves, *Fritillaria cirrhosa* bulb (chuan bei), ginger, licorice root and honewy. Seeing how easy it was to use plants and leaves from our backyard to create such a remedy was one of the pivotal moments that first sparked my interest in traditional Chinese medicine. I wanted to learn more.

If I receive the grant, in addition to my research work, I want to improve my Mandarin, learn more about my native culture and establish connections in China. One thing that I hope to achieve from this experience is to build a foundation in traditional Chinese medicine for when I apply to medical school in the U.S.

My advice for prospective applicants is to start early and ask questions. Dean Vardaman is the guru. If she doesn't have an answer, which is rare, she'll help acquire one. She is also a great motivator.

An applicant must come with a hopeful and strong mentality, as the process may not lead to your ultimate goal; nevertheless, the whole process serves as a great learning experience for future enseavors.

Advice from the Dean to you

By Elizabeth Vardaman

Are you majoring in math, chemistry, physics, engineering, life sciences, social sciences, geology, computer information or science education? If so, there are programs that the National Science Foundation has designed just for you!


Courtesy Photo

At the undergraduate level, you should take a look at the opportunities for internships offered through the NSF Research Experiences for Undergraduates. Go to http://www.nsf.gov/crssprgm/reu and spend a few hours clicking through the many summer options.

Previous students have won one, two, even three of these!

Consider becoming eligible to apply for the NSF Graduate Research Fellowship. When applying two criteria must be met:

(1) Intellectual Merit. This means —you will want to plan and conduct serious research both as a team member and independently during your undergraduate years. Look for opportunities to present your research and grow into more significant research experience. Consider applying for the Goldwater or the Udall in your sophomore and junior years.

(2) Broader Impacts. Show that the research you are doing, and will do, integrates itself with education at all levels. Show that you will communicate your findings to a broad audience and that those findings will benefit society.

Baylor students won NSF GRFs in 2009 in engineering and neuroscience. In 2010, Baylor students wwwon awards in economics, political science and biochemistry. These awards provide $30,000 a year for three years and have many other benefits.

Many Baylor students are submitting proposals for the NSF for next year. If you are a freshman, sophomore or junior—let me encourage you to talk with your research professors now about this dream and let's take steps to make your application formidable and compelling.

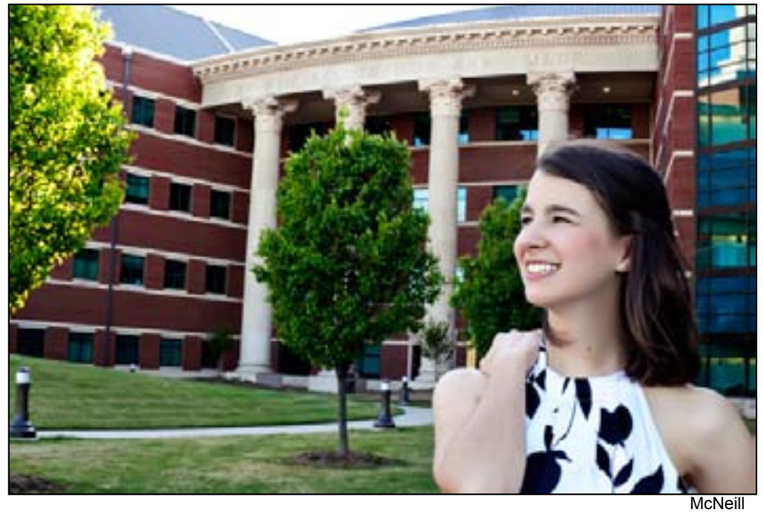
Elizabeth Vardaman is the associate dean in the College of Arts and Sciences.

Baylor graduate finds place in research

By Meaghan McNeill
Contributer

When I entered Baylor as a freshman, I never thought I would pursue a career in research, much less with a title like "National Science Foundation Fellow."

It was my sophomore year that I decided to consider biomedical engineering. I applied for a National Science Foundation Research Experience for Undergraduates (NSF REU) at Rice University. I spent the summer working in a lab that studies heart valves, doing data analysis and learning about heart dissection. The experience showed me that research in biomedical engineering was right up my alley.


McNeill

McNeill is at Rice University participating in the National Science Foundation Graduate Research Fellowship Program.

When I returned for my senior year, I knew I wanted to apply for graduate school, but did not know where or how. I spoke with my mentor from Rice, Dr. Jane Grande-Allen, who encouraged me to apply for the National Science Foundation Graduate Research Fellowship Program (NSF GRFP). The NSF GRFP provides a student with a $30,000 stipend for each of three years, as well as award money to the student's school.

At the end of September, I focused on the requirements: three two-page essays (a personal statement, a summary of my research experience, and a proposed research project) and three letters of recommendation.

While asking for letters was easy, writing, on the other hand, proved a chore. When I finally put together my first draft, I contacted Dean Vardaman for advice. Dr.Grande-Allen proved invaluable in helping me refine the proposed research essay. Writing the pieces helped me figure out exactly what I wanted to do, and having these well-written statements made applying to graduate schools so much easier. I wrote my final drafts, and submitted them in mid-November.

It was in early April that I recieved a shower of emails from the NSF, and many of the schools to which I had applied, congratulating me on winning the fellowship!

I am now attending Rice University. Its focus on global health applications fits with my desire to use my talents for global missions.

The process of applying for graduate school itself helped me crystallize exactly what it is I want to do. Best of luck to all who plan to apply!

From one potential award recipient to another

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With graduation a few months away, Cook-Lindsay now has to decide what he will do after. He has applied for the Peace Corps and has been nominated to Asia in the field of Environmental Education. He's also applied to teach English in the Kyrgyz republic. "I am interested in serving in the Kyrgyz republic's capital city of Bishkek because of its unique geographical position at the environmental crossroads of the Middle East and Asia and my familiarity with the Russian language," Cook-Lindsay said. His plans are contingent on whether he is chosen as Fulbright scholarship recipients.

Cook-Lindsay offers advice to those thinking of applying for various scholarships.

"You should start exploring all of your opportunities as early in your college career as you can so that you can find what really suits you."

Application process: Step by step

By Sobia Siddiqui
Contributor

The National Science Foundation helps sponsor a summer Research Experience for Undergraduates(REU) that offers programs in the fields of biology, physics, mathematics, and psychology.

Junior, Myles Baker, shared his experience in applying and familiarity with the program. "It's a summer program in which you spend two to six weeks with a professor, doing research." Baker explained the application process from beginning to end and how he went about doing his initial research to understand the REU program.

The first step is to determine what you want to do in the summer and gather information, look up programs you could apply for and make note of deadlines. "You can search based on your department on the NSF website. They have a series of programs and subtopics. The REU I went to had three different subgroups."

Baker gave advice on how to apply for your designated field. "When it comes to writing these essays you want to talk about your field of interest. Include which classes you enjoy the most and certain areas you're interested in."


Baker

Students need to also decide who theire recommendation letter writers will be and give them notice weeks in advance. "Generally, I would give a month's notice," said Baker.

An important part of the process is getting advice from professors in the field you are interested in researching. "I didn't really know what the fields in mathematics were, so I sat down with a professor to see what it was all about."

After explaining the application process, Baker took the time to share how the REU program is beneficial, and why students should at least look into it and apply.

"It's going to help give you some connection to where you want to be, as a career. Everything that I learned, all of that information, all of that skill, transfers over. In applying for an REU, you'll use these skills again whenever you apply for a job or scholarship."

With the REU experience as a foundation, Baker is exploring his own career options, and looking into graduate schools as well.
"I plan to do research in numerical analysis, or numerical PDE— Partial Differential Equations. It's computational mathematics. It's kind of a combination between mathematics, statistics, and computer science." Baker is planning to attend graduate school at Rice University.

His final words of advice for prospective students? "The experience itself was just so formative. The process alone is worth doing for anyone. It helps you in so many ways. The opportunity is one that's worth looking into."

Potential applicants: Look here!

To hear other students' stories and tips, visit:

www.baylor.edu/scholarships

and click on:

Scholarship Applicant Video

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