

LAS Undergraduate Research Blasts Off

By Bruce Pecho



Sebastian Anderson overlooks the ruins of Delphi along the slope of Mount Parnassus in lower central Greece. Photo courtesy of Sebastian Anderson

Research. It's not just for faculty anymore.

At least, not when it comes to funding.

That's the beauty of the ambitious LAS Undergraduate Research Initiative (LASURI), which just wrapped its inaugural year in the College. And what a year it was!

Many of the program's first 23 participants have already published papers and presented posters and papers at national conferences.

Did you ever imagine—when you were an undergraduate—that you might be doing work that could change the world around you? Participants in the program not only consider it, they strive for it.

With generous donor support and seed money from the College, LASURI funds faculty-student research in the natural sciences, social sciences and the humanities. LASURI pairs undergraduates with faculty mentors to complete and present semester-long research projects, providing financial support often available only to graduate students.

These research collaborations address many issues challenging our world: Apollo heat flow data from the moon. Natural gene therapy. Chicago gang history. Spectrin protein analysis to study brain injury. Young children exposed to violence. Culturing microorganisms from extreme environments. Depending upon the individual research project, students' contributions involve lab experiments, literature reviews, fieldwork, archival searches, document reviews, mapping, statistics and more.

LAS senior Shama Patel has always been fascinated by the human brain. From the beginning of her undergraduate study, she was determined to do research about it. Naturally, she jumped at the opportunity to sign up with the LASURI. Her project examines high resolution DTI (diffusion tensor imaging) brain scans from subjects that range in age from young to middle age to older.

"Essentially, I am working to figure out how the behavioral changes that often accompany aging can be accounted for anatomically in the brain," Patel said. "For an undergradu-

ate majoring in neuroscience, having a position in the lab where I conduct research is a dream come true."

Patel worked with faculty mentor Deborah Little, adjunct assistant professor of anatomy and cell biology. This research arrangement offered her flexibility, along with a sense of responsibility and accountability.

"LASURI has enriched my undergraduate experience in an unexpected way," Patel said. "One of the best motivators for success is to get a little taste of it early and this is exactly what this program has done for me. To know that the work I am doing is not going unnoticed and unsupported by my university is a great feeling that is really propelling me forward."

"Through this experience, I am honing my own critical thinking skills, gaining research experience, and perhaps most importantly, I have rekindled the sort of curiosity in science that I remember having as a child."

Amela Jakupovic, a senior majoring in Biological Sciences, has been familiar with birds all her life. Her father has bred fancy pigeons for more than 30 years. Applying for a position working on the Chicago Parakeet Project with Professor Emily Minor seemed like a perfect fit for Jakupovic.

The project focused on the mapping and analysis of Monk Parakeet (Quaker Parrot) nests throughout Chicago. The aim was to determine factors important to nesting Monk Parakeets and to predict probable areas where new parakeet populations will settle. Jakupovic's research methods included an online citizen survey of nest sightings, GIS computer software to map next locations and GPS technology in the field. She presented a poster at the Chicago Nature and Wildlife Research Summit in November. Jakupovic enjoyed the close collaboration she developed with Minor.

"I feel the LASURI support gave me an advantage over other Biology majors and classmates at UIC," said Jakupovic. "There are a great number of accomplished students in many of my classes, but few have hands-on experience with biology outside the classroom. This project involved going out into Chicago's neighborhoods and suburbs and actually doing ecological research in an urban space, which I thought was very unique considering we were studying an invasive species. I had never considered actually becoming a scientist before this program."

But LASURI doesn't just enrich the students' learning experience. It also enriches that of the faculty members partnering with the students.



Shama Patel examines brain scans in the lab. Photo courtesy of Shama Patel

"Amela has contributed substantially to the Chicago Parakeet Project," Minor said. "She is a coauthor on a talk I will be presenting at the upcoming US-International Association of Landscape Ecology conference in Athens, Georgia, and she will also be a coauthor on the publications that come from this research. I have greatly enjoyed working with her and appreciate the opportunity provided by LASURI."

Similar sentiments were expressed by Andrew Dombard, assistant professor of earth and environmental sciences, who mentored Yaser Kattoum in a project re-analyzing the heat flow data acquired from the lunar surface during the Apollo 15 and 17 missions to the moon (See sidebar page 10).



Amela Jakupovic, right, birdwatches with her faculty mentor, Emily Minor, assistant professor of biology. Photo by Kathryn Marchetti



Monk parakeet, an invasive species of Chicago. Photo by Kathryn Marchetti

Dombard said the project would have been impossible without a piece of specialized software which LASURI support helped provide. "This is the real power of LASURI: it facilitates the execution of focused studies that are ideal for talented undergraduates."

Sebastian Anderson, a December 2009 graduate in Classical Languages and Literatures, investigated the striking similarities between the archaic Greek conception of the cosmos and that of Ancient Egypt. The project focused on understanding the connections between early Greek philosophy and Egyptian theology, and on mapping out the conceptual space of paradise and after-life beliefs in these two cultures. Anderson said that Hesiod had imagined the world as a sphere with

A year in review with the LAS Alumni Association



Yaser Kattoum at the LAS Undergraduate Research Forum, April 2010. Photo by Matthew Kaplan

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Heat Flow from the Moon By Yaser Kattoum

I conduct planetary geophysics research alongside planetary scientist, geophysicist and assistant professor of earth and environmental sciences Andrew Dombard. Our LASURI project involves re-analyzing the heat flow data collected from the Apollo 15 and 17 missions to help solve a controversial issue on the thermal evolution of the Moon. The cause of a secular increase in sub-surface temperatures on the Moon is debated between different studies. Our goal is to have a clear answer to this debate. With the renewed interest in lunar exploration, we hope that our results will facilitate new lunar heat-flow experiments.

My time at UIC has been exceptionally great and I never thought I would have achieved the things I have. My faculty mentor Professor Dombard and I have also just submitted a manuscript for publication on the calculation of topography of the asteroid Vesta. I was able to give a talk on this project at a planetary science conference in Puerto Rico, and I will present my research at NASA's National Lunar Science Forum in July.

The LASURI program has given support for my life's endeavors and has helped me to think about all the wonderful opportunities available at UIC and elsewhere that we can all have if we are willing to take that extra step. The research I have conducted alongside my mentor has already opened up numerous doors for me. I am currently applying to graduate schools and I am hoping that my research experience will set me apart in a highly qualified applicant pool.

One thing that keeps me going in my career is my love for the mystery that makes our world such a fascinating place.

outer and inner layers. While current scholarly consensus claims that Hesiod's cosmic map is incoherent, Anderson has aimed to restore what he found to be a highly-conceptual depiction of the cosmos.

"Finding these interconnections in some of man's most ancient traditions was extremely exciting and rewarding work," Anderson said. "And by working on this project, I established an excellent collaborative relationship with Professor Marinatos."

Nanno Marinatos, professor of classics, couldn't agree more.

"The LASURI project was one of the best experiences I've had at UIC," she said. "The project became both more exciting and more manageable through the collaboration and will result in two distinct publications which are both very near completion."

Ekaterina Khramtsova is a senior double-majoring in anthropology and biology. Knowing very little about anthropology before coming to UIC, she soon realized that she was intrigued by human origins and evolution, language development, traditions and material culture, particularly in East Asia.

Her project focused on the ceremonial feasting patterns in Prehispanic and Colonial Philippines. The materials at the core of her research were broken earthenware vessels recovered in archaeological excavations in the Central Philippines, which she measured to understand patterns of food storage and consumption.

"The LASURI funding allowed me to attend the American Association of Anthropologists conference in December 2009 in Philadelphia, where I made a poster presentation," Khramtsova said. "I feel very lucky to have had such a great opportunity so early in my research career. I not only had the opportunity to present my work, but also to speak with world renowned researchers and attend lectures and seminars."

Khramtsova said that her work allowed her to further develop dexterity skills which are essential in archaeology. "I have learned much more than any course on research can teach me," Khramtsova said. "Under Professor (Laura) Junker's mentorship, I learned how to design a study, collect and perform statistical analysis of data, and write grant proposals, which are critical skills in any research field." Studying anthropology also broadened her knowledge of global medical issues and how they are seen in varying social and cultural environments. She will put this connection to use next year in the PhD program in Molecular Pathogenesis and Molecular Medicine at the University of Chicago.

And that's just the beginning. As LASURI enters its second year, a new batch of ambitious undergrads will work on their own inspired research projects.

For more information on the LAS Undergraduate Research Initiative, visit the program's web page at <http://www.uic.edu/las/students/lasuri/>.



Ekaterina Khramtsova displays her research at the American Anthropological Association's annual conference in Philadelphia, December 2009.

Photo courtesy of Ekaterina Khramtsova

The Fall Move-In Day



The 14th Annual LAS Recognition Dinner



The First Annual Sociology Alumni Networking Event



The Annual Alumni in the Law Panel



The Annual Physics Student Awards



The LAS Alumni Association is committed to helping alumni and students develop and maintain lifelong relationships with each other and UIC faculty and staff. This year, alumni attended several events, both on and off campus, to volunteer their expertise and to network with students and other alumni.

Fall Move-In Day in August was a perfect time for LAS alumni to welcome future alumni of 2013. LASAA Board of Directors members **Jesse Mendez** ('87, Psychology), **Gina Giglio** ('08, Chemistry and Biological Sciences) and **Charley Nelson** ('01, History, pictured at left) greeted incoming freshman and their parents, and used the traditional "move-in carts" to help carry belongings from cars to new dorm rooms. *Photo by KJ Hardy*

The College honored LASAA Merit Award recipients **Jennifer Veilleux** and **Neha Agnihotri** in November at the 14th annual LAS Recognition Dinner. Now in its 15th year, the award is presented to students based on academic merit and community involvement. The recipients are pictured with LASAA Board members, from left, **Jesse Mendez**, **Gina Giglio**, **Jennifer Veilleux**, **Neha Agnihotri**, **Charley Nelson**, **Mariam Mazboudi** and **Jacob Ehrensafft**. *Photo by Renee Gooch*

Sociology alumni gathered at the first annual Sociology Alumni Networking Event in February. **Dan Lowman** ('96, Sociology) hosted the get-together at his firm, Grenzebach Glier and Associates. Alumni and faculty reconnected, reminisced and learned about current student research in the department. Pictured from left, **Dan Lowman**; **R. Stephen Warner**, professor emeritus of sociology; and **Barbara Risman**, Sociology Department Head. *Photo by Renee Gooch*

In March, several attorneys and a judge shared anecdotes with students about UIC, the LSAT, law school and their careers during the annual Alumni in the Law Panel. The event was cosponsored by the Honors College. Panelists, pictured from left, **Ryan Dahl**, **Ana Petrovic** ('05, English), **Judge Jesse Reyes** ('79, History), **Jennifer Welch** ('90, Psychology), and **James Wooten** ('78, Criminal Justice). Panelists not pictured: **Mamie Alexander** ('98, Criminal Justice), **Alon Stein** ('98, Psychology), and **Andrew Yassan** ('04, Criminal Justice). *Photo by KJ Hardy*

"Can a Physicist Beat the Financial Markets?" At the Physics Student Award Ceremony in April, alumnus **Francisco Vaca** ('92 MS, '95 PhD, pictured center) attempted to answer this question. During his talk, Vaca shared how he has harnessed his physics degrees into a successful career as CEO and CIO of Vaca Capital Management. *Photo by KJ Hardy*

If you took a class in LAS or graduated with your degree, you are automatically a member of the LASAA. The LASAA Board of Directors wants to help you connect with your College and be part of the brilliant future of LAS. Is it time for you to reconnect with LAS? Let us help you do it. E-mail us at LASconnect@uic.edu today!