

From Dreaming to Becoming...Aha! Continued

And if the results are positive? "Then we get permission to test on other companion animals," he says.

Joshua believes the more scientific lingo he learns, the better. He has also learned that one needs to be unbiased in order to avoid influencing results. Joshua says DSP has put him ahead of his peers: "DSP is like graduate school preparation, because I am already doing what graduate students do. When I enter graduate school, I will already be prepared."

"The best part about doing research is that I can make a connection between what I learn in the lab and what I am studying in microbiology. I have had a lot of Aha! moments because everything

I learn from microbiology is coming

Dr. David Renter is an Associate Professor in Diagnostic Medicine/ Pathobiology in the College of Veterinary Medicine whose research focus is on food safety and animal health research .



DEVELOPING SCHOLARS PROGRAM

From Dreaming to Becoming...Aha!

"My dream job is to be a research doctor. I could test samples and try to find cures. When you are young, it seems like make believe, but while you are in a lab, actually doing the work, and putting in the time to get results, it is not as far away as most people would think," says **Joshua Springfield**, junior and first-year Developing Scholar majoring in Microbiology and Clinical Lab Science. *"Growing up, we kids would sometimes play 'little scientist.' We lit matches and set things on fire; we tried to see if our fingers would burn, or tried to invent a magic potion to gives us super strength."*

The Developing Scholars Program offers the opportunity to do research in a safe environment with knowledgeable mentors. Joshua began his research early last summer. During his internship, he received preliminary lab training and learned the "coded language" of the microbiology

laboratory.

Now Joshua works with **Dr. David Renter**, Department of Diagnostic Medicine/Pathobiology. His project is entitled *Vancomycin Resistantinocacaus in Horses*. He chose this topic because of his interest in horses and the fact that there has been little research related to VR (Vancomycin Resistantinocacaus) in horses in the United States. (Vancomycin is an antibiotic effective against some bacterial infections.)

Joshua also works with **Dr. Tiruvoor G. Nagaraja** from the same lab. He describes the relationship with

his mentors as very amicable. "It is like one big happy family in the lab, but when it comes time to work, we get serious," Joshua points out.

Working in the lab requires patience as it takes many

steps to acquire the results. To start testing, Joshua collects samples, prepares the media, extracts DNA, and prepares PCR (Polymer Chain Reaction) gel as well as making gel out of gold agar using double distilled water.

To obtain results, he performs a series of tests using a *sensitizer*, which tells him if the bacteria is acceptable, or not. "Although it is time-consuming, it is worth it," he says, "but if you make a mistake, you have to do everything all over again. Luckily, I already knew what I was getting myself into," he laughs. *(Cont. on Page 8)*



Where in the World Are They Headed?

Jorge Mendoza: University of Wisconsin-Madison; research on two-toed and three-toed sloths in Costa Rica

Jaime Tobon: University of Missouri-Kansas City Dental School

Tamica Lige: University of Kansas or Pennsylvania State University in Art History

Anthony Garcia: University of North Texas Health Science Center medical school

Jesus Garcia: a biomedical PREP Program prior to applying for medical school

Mychal Davis: Kansas State University graduate program in Public Health

Joey Martinez: Field engineer with Hensel Phelps Construction Company working on a new facility at the UCLA Medical campus in Torrance, CA

Leonel Hernandez: Target Corporation as a Construction Executive in Training, Minneapolis

Jessica Rodriguez: South America to Santiago, Chile, then to Lima and Cusco, Peru, then Montanita, Ecuador. Finally, Quality Associate for General Mills in Rockford, Illinois

Elise Gaines has been accepted to graduate school in audiology at Wichita State and University of Kansas

Edgar Martinez, Mechanical Engineering, is graduating in May

Nathan Garcia: Accountant for Deloitte and Touche, Kansas City

Liliana Garcia: looking for employment in youth school health program or health center in KC or Pittsburg areas

Morgan Franklin: interviewing for positions in Business Management



Countries where Scholars have travelled

- | | |
|-----------|---------|
| Japan | Italy |
| Kenya | Mexico |
| Australia | Chile |
| Korea | Brazil |
| Russia | Peru |
| Honduras | Ecuador |
| Belize | France |
| Germany | Spain |

And this summer, China will be added to the list.

A Passion for Puzzles

Finding your passion is listening to the music playing in your heart. You wish it were as easy as figuring out if you prefer to be a Wildcat or a Jayhawk. Alas, it is a more puzzling journey! But what fun would it be if it did not

require hard work? In the Developing Scholars Program, we are all encouraged to find our passion; to find what it is that our heart

asks for, to find our drive, to find our reason for struggling and working so hard.

When it comes to finding passion, **Ariel Anib**, third-year Developing Scholar and junior in Pre-Law and Criminology with a secondary major in International and Latin American Studies, and minors in Non-Profit leadership and Spanish, confirms that it is a journey, but one that will be worth it in the end.

Ariel is working with **Dr. Nadia Shapkina**, Sociology, on human trafficking. The title



Ariel, giving a lecture at the Stop Slavery Summit

of her research is: *A Clogged Artery and Analysis of Human Trafficking in the Heart of America*. She chose this project because there is a need in Kansas for people to be aware that trafficking is not just a thing

of big cities or other countries. It happens here. Ariel says, "Because of Kansas' proximity to I-35, a lot of people use Kansas as a transit place for victims who are

trafficked." She and her mentor found cases of human trafficking in Kansas City, Wichita, and Topeka. They even found a case of a K-State student who was trafficked to Fort Riley. Trafficking can truly happen anywhere.

Dr. Shapkina says that the most common form of human trafficking is sex trafficking. She went on to say that "...contemporary trafficking happens mostly because people decide to migrate voluntarily to other places in search of better resources or better social conditions and that exposes them to dangers, vulnerabilities, and risks." For

males, trafficking most commonly occurs when they perform manual labor without being paid which is a form

of exploitation. Ariel says she found that a lot of unaccompanied minors get trafficked while trying to provide for their families. Additionally, she stated that while women and children are the most common victims, human trafficking knows no skin color, no socio-economic status, nor gender. In order to prevent trafficking, Ariel explained that it will be necessary to look at the laws currently in place as Kansas does not have an anti-trafficking law. Ariel and Dr. Shapkina plan to bring this to the attention of the Human Trafficking Advisory Board in the office of the Attorney General.

Ultimately, Ariel would like to do what she is most passionate about: "I think everyone should find out what their strengths are and perfect those strengths to meet their passion," she said. According to Ariel, her passion is to help people and specifically to help victims of human

Ariel Anib and her mentor, Dr. Nadia Shapkina discussing research plans



trafficking, which is something that is "near and dear to her heart." She hopes to work one day for the International Justice Mission. Her back-up plan is to volunteer for the Peace Corps after graduation. Ariel hopes her research this year will offer one solution to the problem.

Ariel found her niche by searching. "If, while doing your research, you get interested in something else, take the steps to research about that because you never know what you might find. Your research is not just about getting a paycheck; it is about finding something that you are passionate about and making it your vocation. Finding your passion is indeed a journey, or as Ariel puts it, "putting



Note: Ariel was recently contacted by the U.S. Department of Homeland Security who is interested in her research findings and has provided her with further networking for her future studies on human trafficking.

Mentors Maximus

Faculty mentors are integral to the Developing Scholars Program. They oversee Scholars' research, help to network, give advice, and collaborate to foster educational growth. Three mentors, **Dr. Annelise Nguyen**, Veterinary Medicine-Toxicology, **Dr. Warren White**, Mechanical Engineering, and **Dr. Stefan Bossmann**, Chemistry, work with multiple Scholars.

For Dr. Nguyen, work and vacation can become intertwined: "Once I was at Machu Picchu hiking, and got a call from my lab." Why would she take a call when in another hemisphere on vacation? She explained, "It can change experiments!" Dr. Nguyen oversees three Scholars focusing on cancer research: **Luis Chavez**, **Morgan Armbruster**, and **Kristina Bigelow**. The Scholars have different projects. "I challenge each student in a different way, because in my lab everyone plays a major part," Dr. Nguyen explains.

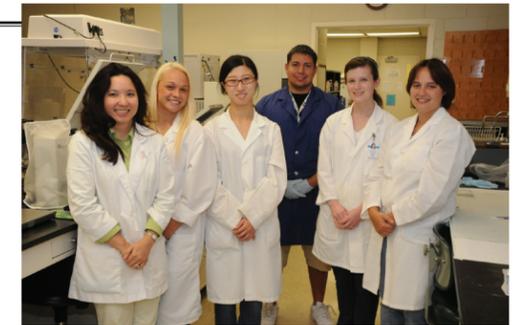
Dr. White has three Scholars as well. **Joshua Ames**, **Miguel Valdes**, and **Victor Salazar** are working as a team to produce a device for an undergraduate engineering lab. The device, a *motorlab*, is an integral part of the Dynamic Systems and Controls Laboratory. The team is redesigning and compiling data about the manufacturing of the motorlab. Dr. White wants to market the motorlab to other universities in order to fund K-State's laboratory. "Technology can change and you need to have the means

to incorporate new ideas. Changing labs is very labor intensive," Dr. Warren points out. Their research hopes to sustain itself and to pave the way for future Scholars.

Dr. Bossmann's two scholars, **Pamela Maynez** and **David Villanueva**, are working with *oligo peptides* in cancer research. Dr. Bossmann says there is one essential quality: "You have to be self-driven. If you don't want to reach certain goals for yourself, you cannot work in a research lab. You have to have a vision for yourself and you have to have imagination." Not surprisingly, Dr. Bossmann also mentioned enthusiasm as a beneficial quality, and he observes that successful Scholars "are energetic and excited in what they're doing."

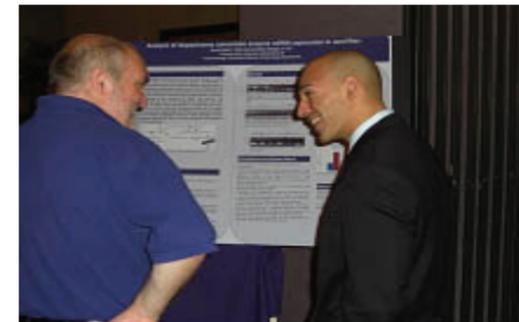
The mentors wish to prepare their Scholars for life after their undergraduate degrees. Dr. Bossmann wants his students to be independent. "Students have to become active, have to look for their own methods and contributions. I believe in helping them early to see if this is something for them."

Dr. Nguyen says, "The first thing I ask them is what they want to do after they are done in my lab. Most say veterinary or medical school. What makes you stand out is doing things besides the MCAT and your GPA. Research is one of them--not only research but meaningful publication. I can help them toward that to make their application more

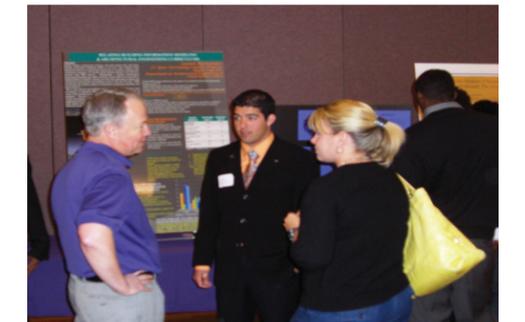


Dr. Nguyen's Lab
Photo by Dave Adams

desirable." The main quality that mentors need, according to students, is a good rapport with students. Armbruster said, "I expect [my mentor] to help me when I am unsure of my work." Bigelow expects "communication and advice," and Villanueva expects his mentor to "be there to help with any question I have." Maynez, a transfer student, found that having a fellow Scholar to research with is beneficial as well. "I came here and I didn't know anyone. [David Villanueva] was the first person I met and made friends with here, and in the lab that's really helpful." Salazar seconds this opinion: "Working in groups requires that all people work in tandem and in an effective manner." Overall, the Scholars are able to explain their research with impressive composure and eloquence, and that is truly a testament to both the Scholars and the mentors' hard work and dedication.



Dr. Bossmann with Jaime Tobon at Symposium



Dr. White talking to students at Symposium

The Achievement Advantage

Classes and research and a social life...oh my! The life of a Developing Scholar is a busy one, yet some Scholars have still managed to achieve a grade point average of 4.0. The Scholars who achieved a 4.0 in 12 hours or more in Spring 2010 are **Jaime Arreola**, junior in Psychology; **Eduardo Alvarado**, senior in Philosophy and Economics; **Anthony Garcia**, senior in Kinesiology/Pre-Medicine; **Matthew James**, senior in Industrial Engineering; **Evgeniy Shishkin**, senior in Chemical Engineering.

Scholars who achieved a 3.80-3.99 GPA in 12 hours or more in Spring 2010 are **Michelle Foster**, junior in Political Sciences and Women's Studies; **Ariel Anib**, senior in Sociology and Modern Languages; **Jorge**

Mendoza, senior in Biology.

Scholars who achieved a 4.0 GPA in 12 hours or more in Fall 2010 are **Eduardo**

Alvarado, senior in Philosophy and Economics; **Jaime Arreola**, junior in Psychology; **Kristina Bigelow**, junior in Biology/Pre-Medicine and Gerontology; **Emma Brace**, sophomore in Biological Engineering; **Johanna Diaz**, senior in Biology; **Laura Gonzales**, freshman in Hotel and Restaurant Management;

Tamica's Secret: she watches the YouTube video; How Bad Do You Want Success by Eric Thomas

Tyler Johnson, sophomore in Business Administration; **Tamica Lige**, senior in Art History; **Stephanie Skinner**, sophomore in Animal Sciences.

Students who achieved a 3.80-3.99 GPA in 12 hours or more in Fall 2010 are **Ariel Anib**, senior in Sociology and Modern Languages; and **Evgeniy Shishkin**, senior in Chemical Engineering.

A Sweetheart of an Opportunity

The Edgerley/Franklin Urban Leadership Scholarship hosted its 4th annual Leadership Day on February 14, 2011. The Leadership Day gave 12 scholarship finalists the opportunity to interview with the selection committee. Throughout the day the candidates interacted with current scholars and campus representatives to learn more about the program and the university. The purpose of the scholarship is to shape the next generation of great American

urban leaders. Scholars will have the knowledge to make sound judgments, the character to flourish under the pressures of leadership, and the vision to bring new solutions to our nation's most pressing urban needs. Four recipients, **Jonathan Bernard**, **Ismael Hernandez**, **Zachary Jones**, and **Chayce Wynn** are poised to join the Edgerley/Franklin leaders this fall. Additionally, the overall quality of the students' interviewed prompted the committee to extend an

invitation for all finalists to join the Developing Scholars Program.

Current Edgerley-Franklin Urban Leaders, **Michelle Foster**, **Mary Jackson**, **Edmond Rivera**, **Oscar Rodriguez**, **Miguel Valdes**, and **Derrick Wiggins**, along with graduate assistant **Nate Garcia**, spent the first half of their spring break on a Kansas City urban service trip.

Dr. Bernard Franklin arranged meetings with civic organizations and leaders.

"It was a great experience. The scholars dedicated their time during spring break to learn about urban issues and the types of actions regular people around Kansas City are making to bring about positive change."
-Nate Garcia

Rake N' Run



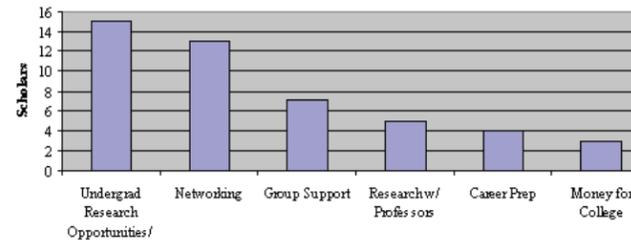
A Transformative Journey

"Through the Developing Scholars Program students are transformed as they slowly embark on a voyage towards higher learning," states **Jaime Tobon**, third-year Scholar and senior in Biology. The purpose of student participation in the Developing Scholars Program is to explore an area of interest much earlier than previously afforded. This opportunity often serves as the foundation of a desire for further

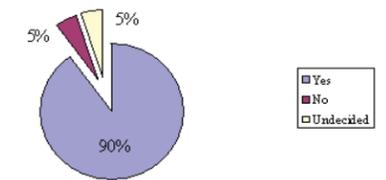
learning within Scholars. In fact, most students who participate in the program stay committed to the program for the maximum three years. Of those students, most decide to continue on to achieve a degree beyond their bachelor's degree.

This year, we decided to ask the Scholars, "What are your reasons for participating in the Developing Scholars Program? With the program at its largest with about 75 scholars, we were able to obtain a multitude of different responses. The responses ranged from experiencing exposure to gaining new ways of learning. The top five answers included:

Leading Reasons Scholars Participate in DSP



Percentage of Scholars Who Plan to Attend Graduate/ Professional School



an opportunity in undergraduate research, the ability to network, the support system the DSP family creates, research with knowledgeable professionals, and early career preparation.

We were also interested to see how many of the Scholars in the current group had made the decision to advance their education past their bachelor's degree. Around 90% of the responses received stated that they planned to continue with school after their undergraduate studies.

DSP gives people the opportunity to become comfortable. There is nothing that has helped me more than standing in front of my project at the end of the year and having people first me. This past semester I was in the inter-law school moot court competition where I was asked to present my arguments to a panel of professors in an appellate-style format in which they can interrupt and ask whatever they want. That reverted me back to freshman year being so nervous in my nice clothes while answering questions about my project. Because of that experience, I felt more comfortable while doing my arguments some 5 years later. The reason it works is because it is like family. The atmosphere that is created by the staff of DSP is one of loving accountability. The program is a safe haven where you know that they genuinely care about you and your education, but at the same time you are not coddled. What you are asked to do must be done. All in all it helped to put me where I am today.

Dwight Alexander, KU Juris Doctor, 2011

Reflections of a First-Year: Gavin Talking to the Law

As I complete my first year in the DSP, it is impossible for me to ignore the changes that I have undergone. I have developed opinions and ideas about my profession and have spoken to representatives of national organizations and individuals in the design profession. Students of the College of Architecture are awake for hours. However, Seaton Hall is full of teachers who believe in students making intriguing discoveries. Former Dean and current professor, Dennis

Law, is no stranger to the Developing Scholars Program.

I was able to catch up with him and ask him a few questions: "I always went to the DSP Symposium events. It's a wonderful venue for students," Law said. "The hardest thing for [architecture students in DSP] is balance. I would ask them, 'How bad do you want this?'" Professor Law said he was impressed with the work of the students and he expects great things to come to fruition within the Developing

Scholars Program.

There were many long nights where the research hit a dead end, but I have learned that much like the design profession, research is continually refined. This lesson is one that I can apply to other aspects of my life, and for that I am thankful.



Scholars Hunger to Compete

In the post-apocalyptic world of *The Hunger Games* by Suzanne Collins, being a teenager means putting your life on the line every year. One boy and one girl are chosen from each of the twelve districts and forced to fight to the death in a televised game shown by the Capitol in retribution for a failed rebellion.

Stephanie Skinner said *The Hunger Games* is about more than just a battle. It is about surviving, and what it means to live in a dictatorship where not even the lives of your children are safe. It is a commentary on American culture, consumerism, and egocentrism. The people of the Capitol see the tributes from the districts only as a source of entertainment, not as brothers and sisters, sons and daughters. How different is this world from ours today? Do we ignore what is unpalatable and forget that there are indeed other countries, cultures, and histories different from our own?

This book is part of Kansas State's

university-wide common reading program, the K-State Book Network (KSBN). DSP's annual *Food for Thought* potluck brought in **Dr. Tara Coleman**, Assistant Professor in Hale Library, **Dr. Steve Keifer**, Director of the University Honors Program, and **Dr. Greg Eiselein**, Professor of English, to lead a conversation about the book. Students shared their opinions about parallels between *The Hunger Games* and contemporary society. **Mary Jackson** wrote, "Suzanne Collins has created a novel...packed full of true-to-life relatable characters to the point that a reader is hard-pressed not to get dragged in and tangled up in the cut-throat world that is this book. And it is hard not to read more into this story than just what is written in black on white paper. Reading between the lines is the only way to go with Suzanne Collins' blueprint of inescapable intrigue and perfectly played-out poetry that somehow comes out as prose and makes this novel truly novel."

In the book, competitors often fought over precious resources to ensure that they would have the energy and strength to fight another day. In our society, there are people less fortunate who do not have the means to provide for themselves. For our DSP annual *Food Drive*, the scholars were split into "districts" and competed against each other to see who could donate the most non-perishable food items and mittens for the Flint Hills Breadbasket.



District Nine, led by **Ariel Anib**, contributed 133 items. Other team members were **Eduardo Alvarado**, **Laura Gonzales**, **Valerie Rito**, and **Brooke Williams**. The



leading individual contributors were **Caleb Wurth**, **Alejandro De Luna**, **Edmond Rivera**, **Isaac Falcon-Campos**, and **Miguel Valdes**. The drive raised over 600 pounds of food and 41 pairs of mittens, demonstrating how Developing Scholars are developing their civic-mindedness as well their intellects.

Disclaimer: No competitors were harmed in this competition.

Note: Stephanie Skinner and Abe Denner have both been invited to serve on the selection committee for the KSBN 2012.



Congratulations to Kale Lothamer, Joshua Ames, and Abraham Denner for being awarded the Ecological Genomics Institute (ECOGEN) Undergraduate Research Scholarship. ECOGEN supports integrative research that seeks to understand the genetic mechanisms underlying adaptive responses of organisms to their environment. The scholarship includes a \$15,000 a year stipend, excellent support for professional development, hands on research experience, and summer housing.

Sharp to Study in Grand Tetons

Jasmine Sharp, third-year Scholar in Wildlife Biology, was chosen for the Grand Teton Internship program working in the Grand Teton National Park in Wyoming. Jasmine is interested in the conservation of endangered wildlife and the maintenance of biodiversity, and this summer internship will allow her to gain more insight and knowledge in these areas.

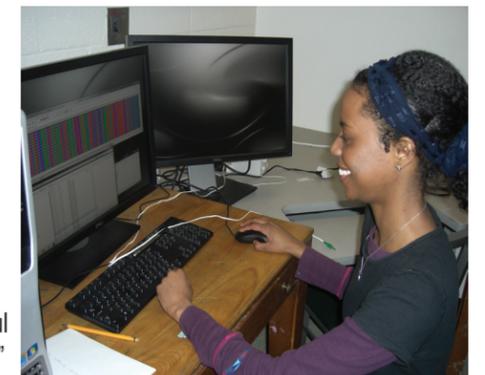
Jasmine hopes to get better acquainted with other biologists and to learn more by being in the field. One of her duties will be



to assist in monitoring the breeding success of several sensitive birds: bald eagles, trumpeter swans, great blue herons, ospreys, sage grouse, peregrine falcons, and others. She will observe these species using a spotting scope or binoculars and record information on their occurrence, habitat, and nesting status.

Jasmine is eager to further her experiences in the area of Wildlife Biology. She feels fortunate and privileged to be working with **Dr. Samantha Wisely** in the Department of Biology. "Dr. Wisley is very knowledgeable in the field of molecular ecology and she answers a lot of questions I have in regards to wildlife biology," Jasmine said. Jasmine also attributes many of her successes to the Developing Scholars Program. "DSP has helped me a lot, not only providing me with undergraduate research but also in having the privilege of being connected with helpful and knowledgeable people in the program."

Jasmine Sharp and Alexia Sampson-Bellot have been selected to participate in the Ecological Society of America SEEDS program. This program encourages underrepresented students to explore fields in ecology. Both scholars will take part in an all-expenses paid field trip to the Florida Everglades in May.



DSP Mathematician Earns Prestigious Internship

What are your summer plans? This is a question most college students face this time of year. **Perla Salazar**, senior in mathematics, has her answer: She has been accepted into the Real Industrial Mathematics Program (RIPS) through the Institute for Pure and Applied Mathematics at the University of California, Los Angeles. "We suggested Perla apply because it is an industrial mathematics program with real industry problems," Dr. Korten stated. "My impression is that Perla may be 'wired' for pure math, but we wanted her to explore applied mathematics in time for her to make her graduate school choices so that they match what she wants to do rather than by default."

"We are very proud of Perla, as RIPS is extremely competitive. Not only did Perla make RIPS, she did so without any help

from our professional networks. Now I am telling her to be prepared to do the cramming of her lifetime while she is there. Even if she does not go into applied math, the people she will meet at RIPS she will meet professionally again, as they are members of the same generation and will move through their career stages at about the same time. They will be a resource for each other."

Perla's mentors are **Dr. Marianne Korten** and **Dr. Charles Moore**, Department of Mathematics.



Each RIPS team is comprised of four students, an academic mentor, and an industrial sponsor. The research problem is developed by the industrial sponsor in consultation with IPAM; it is always a real problem of serious interest to the sponsor and that offers a stimulating challenge to students.