2012 Research at Andrews

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speak Spanish, as all proposals and communiques are conducted in that language and Hayward does not. However, Briana Payne, a biology graduate student who had worked on the Seabird team in the past had been a Spanish major and “was caving about for a project,” says Hayward. “She went to work and she was the one that got this project off the ground and in terms of getting the approval.”

As the resident Spanish speaker, Payne wrote the project proposals and corresponded with personnel at the Charles Darwin Research Station and the Galapagos National Park. “In all of our meetings, they wanted to talk to me and have me sign all the papers. They insisted, ‘No, you’re the principal investigator; he’s your research assistant.’ I got some fun out of—my major professor was my research assistant,” Payne smiles.

With approval from the Ecuadorian government and an AU Faculty Research Grant in hand, Hayward, Payne and Megna “took off a little early from school” and landed in Quito, Ecuador where they met “Chavez. From Quito the team flew to Puerto Ayora, Galápagos. Before leaving for Isla Fernandina, however, the group had to go through extensive quarantine to avoid introducing foreign particles or bacteria to the pristine environment of that island. Then followed a 22-hour sail to the island on a 42-foot boat called La Pirata, helmed by a cheerful Ecuadorian named Lenin. “As in John, the Beatle?” Hayward exclaimed. Payne· “No, like the Russian!” La Pirata dropped the four researchers off on the jagged shores of the volcanic island with food and 125 gallons of water, “and we were there for three weeks.” The island is completely uninhabited and without modern conveniences, so it was just the researchers and the animals they were observing. The researchers gathered the majority of their data from continual observations of the animals in the wild. In a rotation of four shifts, the iguana observer on duty counted the animals on the beach and recorded every time an iguana left or came back from the beach.

Simultaneously, using an automated portable weather station, a tide-height pole and a solarimeter, Hayward and his team collected a wealth of environmental data including changes in temperature, relative humidity, tide level and solar radiation. “Essentially, we were counting animals entering and leaving the water and monitoring environmental data for Briana and Shandelle to model,” says Hayward. As the researchers got accustomed to living on the island, Payne noticed their behavior change as well. “We were studying these creatures to see how the environment affected their behavior, and the more time we spent there, our lives changed too. We started behaving in ways that meshed with the environment.”

“So it turns out that animal behavior, and even people behavior, is very deterministic,” says Henson. “You can’t predict what an individual is going to do, but you can predict with very high probability what a group is going to do.” The model Henson and Payne created predicts about 80 percent of the variability in the data, and shows that four factors affect iguana haulout times: solar elevation, tide, temperature and wind. “It’s possible the iguanas are attracted to a wind turbine and not disturb them in the least.” For that reason alone, the place is special, Hayward says. Its distinctive and relatively untouched coastal habits, which might not be worth preserving. “If we want to protect an organism or an ecosystem, we have to learn as much about it as possible,” says Henson. “Anything we can learn to minimize the interactions between humans and animals in environments like that will help preserve them.”

The quantity of Jermaine’s projects is a little unusual, but his involvement in research is quite normal for students in the Department of Behavioral Sciences. About a decade ago, the department internally seeded a model that integrated undergraduate research into the standard curriculum. Now, undergraduates working on research with a professor or conducting their own projects are standard in the department. The integrated research curriculum was instituted largely by Dr. McBride, research professor of sociology; Herbert Helm, Jr., professor of psychology; and Eystein LaBianca, professor of anthropology. Karl Bailey, associate professor of psychology; and his colleagues give the students a 14-item Research Skills Self-Rating instrument. The survey measures the students’ perception of the usefulness of the research experience as well as their own skills, their research anxiety, and their belief in their own self-efficacy. “When they start, they think research is useful, although they don’t think they can do it,” says Bailey. “They don’t necessarily feel calm when doing research, and about half of them feel like they have the necessary skills—which means that about half of the students don’t feel like they’re able to do research.”

But going through the class changes that students take the survey again at the end of their research Methods II, behavioral sciences professors mentor smaller groups of students on their research. Then, students begin to develop their own projects. If faculty members have research grants, students will work on them with research. “Other students work on independent projects for credit; and some students are doing projects simply out of curiosity—without pay or credit,” says Bailey. “At any given time, we probably run about 10 student-led projects in the department.”

After two more Research Methods classes, students are required to attend or present at a regional or national conference, usually the

When you look at the data, the only thing that doesn’t change is the perception of usefulness of research, and that’s because it was already at the ceiling,” says Bailey. “Everything else moves very significantly—in fact, by about half a standard deviation. We’re moving students’ perception of their skills by about a full standard deviation, and it appears that practical experience with research is what’s doing it.”

And practical research experience is liberally sprinkled throughout the behavioral sciences curriculum. Most students take two classes, Research Methods I & II, in their first or second year. Research Methods I introduces
Don’t think about the white polar bear. And now that you’re trying not to think about the polar bear, please proceed to read the rest of this article. You may find yourself not wanting to finish the article, perhaps due to something known as ego depletion.

“We think of self-control as a muscle,” says Arianna Lashley, senior behavioral sciences major. “In the short term, it can be depleted, but in the long-term, it can be strengthened. Ego depletion suggests that after completing one task, we deplete our finite resources of self-control enough so that mustering the self-control to complete a second task is much harder.”

Arianna’s research draws on the principles of ego depletion, and “my own twist was how religion can affect restoration of self-control.” Working under a faculty research assistantship, she designed a multiple-object tracking task (MOTT) and selected theologian Jonathan Edwards’ writing to measure ego restoration after positive and religious narratives. Her first study tried to produce the effect of ego depletion by using the white bear task like you experienced above. “You’re thinking about the white bear again, aren’t you?” But the results didn’t come out quite as expected. “The white bear task should have worked—all the literature said it should have—but it didn’t. We changed a lot of variables, but kept getting the same results. This may have been caused by the population we were testing—college students didn’t have as high of a self-control.”

Arianna then wondered if religion was actually motivating and restoring self-control. After asking her subjects to rate their emotions, she had them read one of two passages: one from Jonathan Edwards’ fire-and-brimstone sermon “Sinners in the Hands of an Angry God,” and a more hopeful one from Edwards’ “resolutions.” Then she had them re-rate their emotions and re-rate ego depletion after finishing the article and thinking about religion. “I realized that research wasn’t easy, and it was time consuming, but it was definitely doable. And I discovered that I really enjoy doing research.”

More than 50 Andrews University students and faculty attended the 118th annual Michigan Academy of Science, Arts & Letters Conference at Alma College in Alma, Mich. on March 2, 2012. Many students presented their own research at the conference, others presented jointly with their professors, and a few awarded simply to gain the experience.

The University annually brings students to the MASAL conference, but according to Gary Burdick, associate dean of research, twice as many students presented than in previous years. Two of the presenting students were Earhart Emerging Scholars: Sarah (Gane) Burton and Kristina Penny. They sat down to talk about the scholarship, their research and future plans.

FOR: What are Earhart Emerging Scholars, and how did you become one?

KP: My teachers nominated me, and at the time I didn’t really know it was a scholarship. For my job, I fill out and sign a lot of papers, so when they gave me the forms I signed them but didn’t realize until later that it was a scholarship.

SG: My research, overseen by Kristin Witzel and Øystein Lallaïnna, grew out of an under-graduate research assistantship to Dr. Lallaïnna in the spring of 2011. I’m exploring national identity in Jordan, especially the effects of Palestinian immigrants on concepts of national identity. Jordan itself is a relatively new state, created in the early 1900s, and has quite successfully begun creating its own identity. Jordanian national identity celebrates tribalism, which is essentially finding one’s identity in a tribe rather than a nation or ethnicity. The problem they’re having now is that with the influx of Palestinians, a more agricultural people, what does it mean to be Jordanian? When I was in Jordan two summers ago, I conducted interviews with Jordanians and Palestinians—five Jordanians and three Palestinians, and interacted with many more that didn’t want to be interviewed. There hasn’t been much case-study research since 2003, which is surprising since there has been a lot of political upheaval in the Middle East since then.

KP: I also worked in Jordan, documenting the work of the Jordan Field School with Patrice Jones, assistant professor of communications. Our project was an exposé on what’s happening in the Jordan Field School. The Field School prides itself on involving many different departments—archaeology, architecture, art history, and anthropology—just to name a few. Each department is conducting a different project, and archaeologists current project is to design and construct a visitor Center at Tal Hisban. Part of our project was to do some ethnography and find out what the community needed from the Center—a question like, “If there were a center, would you go? What would you need to do it? What about your culture do you not know or would you like to find out?”

SG: For: What got you interested in these projects?

SG: I chose my project because of a conversation I’d once had with two Jordans. I asked them if there could be such a thing as a Palestinian Jordanian. One said no, and the other, who was younger and had more experience with the West, said yes. I was very interested in the difference of opinion.

FOR: Sarah, what did you discover in your research?

SG: In general, the celebrations of Jordanian tribalism make the Palestinians feel excluded, since they are not natively tribal, but a more agricultural people. The Palestinians I interacted with felt that Jordanians are prejudiced and treat them as second-class, and don’t allow them to get good jobs or to participate in government. On the other hand, Jordanians feel that Palestinians, who actually hold some government positions, are usurping those positions. They believe that Palestinians only want a Jordanian passport and papers. But most importantly, Jordanians are afraid of the Palestinians, who have no state of their own and whose identity is now largely centered on displacement, will try to turn Jordan into a Palestinian state.