Remarkable Reflections

UI dissertation prize winners challenge conventional thought in their fields

GRADUATE EDUCATION at

IOWA

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With 25 graduate programs ranked among the top 25 best programs in the nation (U.S. News and World Report, 2016), the Graduate College remains committed to fostering a diverse intellectual environment that inspires research, scholarship, and innovation.

John Keller, who serves the University of Iowa as Graduate College dean and associate provost of graduate and professional education, spoke with the Graduate College’s Office of External Relations about such topics as the college’s investment in student success, new administrative leadership, and ongoing diversity initiatives.

Q: How is the landscape of graduate education changing?

There is increasing focus on graduate education. The Graduate College’s goals are more prominent in the university’s current strategic plan and are likely to be prominent as we move into the future. Nationally, the American Association of Universities (AAU) presidents are discussing the quality of students who are coming into graduate education, the diversity of that population, as well as retention and completion and professional development opportunities. At Iowa, we are very focused on our students’ success. We are working to attract talented graduate students and support them throughout their graduate experience. We are developing comprehensive support and professionalization services: travel grants, teaching and research awards, dissertation completion awards, and career services.

Q: How are Graduate College resources impacting graduate students?

The past year, we’ve funded over 350 doctoral students, compared to about 260 students the previous year. Almost 100 more students are being supported by funding from the Graduate College. We’re redistributing the same amount of resources for different purposes and for different lengths of time. We’re trying to get as much money as we can in the hands of more students to be used as effectively as possible. The more we put resources into retention and completion fellowships—like summer fellowships, dissertation-year support, and support for students who just completed their comprehensive exams—the better off we’re going to be. Our data over the last 10 years showed us that well over 90 percent of students who received summer fellowships and dissertation-year fellowships completed their Ph.D. Students need different types of resources at different points of their graduate career to be successful. We’re moving in the right direction and our goal is to continue to move in that direction.

Q: Why is the Graduate College emphasizing professionalization offerings for graduate students?

Recently, the AAU graduate deans working group drafted a vision for doctoral education. They recognized that graduate education supplies the skillset needed for high-level leadership in industry, government, military, cultural and non-
profit sectors—not just academics. We know that only about 20 percent of our students move into tenure-track positions right out of graduate school. The question is what types of experiences do those students need to pursue these positions and where are these positions? High level research and critical thinking skills are important, but what other competencies do students need to be able to move into other kinds of careers? Do they have leadership experience? Do they have experience with high-level teaching? Do they have communication and writing skills? Talking to non-scientific groups is very important. In the past year, we have served over 1,200 graduate students and postdoctoral scholars through Graduate College professionalization offerings emphasizing these skills.

Q: How does the appointment of new administrative leadership fit into the college’s strategic plan?

We’ve appointed individuals with a student-centered view of graduate education. Shelly Campo joins us as an administrative fellow working with responsible conduct of research, postdoc initiatives and special projects. Our new assistant deans, Heidi Arbisi-Kelm and Jennifer Teitle, are running the Office of Academic Affairs and the Office of Graduate Success, respectively. Our new associate dean, Sarah Larsen, oversees how the offices work together. Dean Larsen is critical for that overall view for how students develop from start to finish.

Q: How is the Graduate College supporting diversity initiatives on campus?

We don’t have the breadth of participation in graduate education that we need to have right now. The Graduate College seeks to support the recruitment and training of diverse graduate students and postdoctoral scholars through a variety of programs. Our Summer Research Opportunities Program (SROP) draws in talented students from under-represented backgrounds to come to Iowa and work with our top researchers. Many of the SROP students go on to join our programs here. Our Office of Graduate Inclusion supports the networking, social, and cultural opportunities of all students.

Q: How does the quality of research being conducted by doctoral and master’s students at the University of Iowa compare with other institutions?

Our graduate students fare extremely well in terms of internal and external awards in many disciplines. The Council of Graduate Schools/ProQuest Distinguished Dissertation Award has been in place for approximately 25 years and we’ve won five of those awards and had 12 finalists. Iowa has been recognized more times than any other public university and is tied with Yale, which also has five winners. We also had five students receive National Science Foundation (NSF) Graduate Research Fellowships in the 2015-16 academic year and one student receive a grant from the Fulbright-Hays Doctoral Dissertation Research Abroad Fellowship Program. We have very high quality students doing cutting edge research.

Dean Keller plans to deliver the second annual State of Graduate Education address this spring.
Remarkable

The 2015 dissertation prize winners challenge conventional thought in their fields.

Based on their excellence in doctoral research, three University of Iowa graduate students have been recognized for having the best dissertation in their fields at the UI in 2015.

The Graduate College honors Erin Peters and Karen Thompson with the D.C. Spriestersbach Dissertation Prize and Sajan Lingala with the Rex Montgomery Dissertation Prize.

Peters, who earned her Ph.D. in art history, won the Spriestersbach Prize in the humanities and fine arts. Thompson, who received her doctorate in biology, won the Spriestersbach Prize in the biological and life sciences.

Lingala, who earned his Ph.D. in biomedical engineering, received the Montgomery Prize, which is awarded annually in the biomedical and health sciences disciplines.

Namesakes of dissertation prizes

The Spriestersbach Prize is named for Duane C. Spriestersbach, who served as Graduate College dean from 1965 to 1989. When the prize was founded over 30 years ago, Spriestersbach hoped it would “serve as tangible evidence—as ‘gold standards’—of the outstanding work of which graduate students are capable and to which all others should aspire.”

As winners of the Spriestersbach Prize, Peters and Thompson are the UI’s nominees for the Council of Graduate Schools /University Microfilms International Distinguished Dissertation Award. This national award is the most prestigious dissertation prize in the country. Iowa has had five national winners, more than any other public institution.

The Montgomery Prize is named for Rex Montgomery, an emeritus professor of biochemistry in the Carver College of Medicine (CCOM). Montgomery began at the UI as an assistant professor in 1955 and became a full professor in 1963. He was associate dean for academic affairs in the CCOM from 1974 to 1995, while also serving as associate dean of research in the CCOM and interim vice president of research.

The nexus of Roman and Egyptian temple art

Under the first Roman emperor Augustus (27 BCE-14 CE), at least 24 temples in Egypt were newly built or expanded. Erin Peters’s dissertation, “Egypt in Empire: Augustan Temple Art and Architecture at Karnak, Philae, Kalabsha, Dendur, and Alexandria,” challenges the current scholarly tendency to separate the art and architecture produced in Egypt under Augustus from that produced in the rest of the Roman Empire.

By advancing an incorporative approach that considers Augustan temples in Egypt as part of the Roman Empire, Peters enriches the current understanding of Roman art. She considers what the decorative and architectural details of temples built in Augustan Egypt can reveal about each monument’s religious and social significance within overlapping contexts and communities.

Peters’s research illustrates that, via the medium of architectural design, Augustus and his advisers were keenly engaged with the religious and aesthetic conventions of the ancient and prestigious culture they witnessed after Egypt’s annexation into the Roman Empire in 30 BCE. Peters demonstrates how architecture was used as a means to reconcile complex and changing political, social, religious, economic, and artistic contexts as Egypt was integrated into the wider Roman world.

“Her dissertation, which examines not only how the emphases of the temple complexes change in the Augustan period but also how the image of
Augustus is incorporated into temple scene after temple scene, transforms some of the basic assumptions scholars have been making about art in Roman Egypt for over a century,” says Brenda Longfellow, associate professor of art history and Peters's dissertation advisor.

Peters currently holds a joint position as an assistant curator at the Carnegie Museums of Pittsburgh and as a lecturer in curatorial studies at the University of Pittsburgh.

Understanding how neurons find their targets

To gain a better understanding of how sensory and motor neurons navigate the sensory cells of the inner ear, Karen Thompson experimented on frogs, surgically transplanting their ears. Her dissertation, “Ear Manipulations Help Model Neuroplasticity Limitations,” shares her unique findings.

Transplantation of developing tissues has long been used to test the potential of developing brain tissues to interact with novel targets. While three-eyed frogs were first studied in the 1970s, Thompson's study extended this work to the auditory system by transplanting ears to generate “three-eared” frogs.

By transplanting ears to new locations in the frog or by adding a third ear, Thompson created a novel situation to study how the brain adapts to a new sensory system. In addition, by removing a frog's existing ear, she examined the influence on the development of neurons in the brain. Sensory neurons convey impulses from sensory organs toward the central nervous system, which includes the spinal cord and brain.

Her results indicate that auditory and visual systems appear to use similar molecular and physiological mechanisms to properly integrate information within the brain.

“The impact of her current and future research will change the way we think about developmental neuroplasticity as her work will allow scientists to mechanistically understand how molecular pathfinding cues interact with neuronal activity to fine tune neurosensory maps of the human balance system onto the brainstem for motor control,” says Bernd Fritzsch, professor of biology and Thompson's dissertation advisor.

Thompson is continuing her work as a postdoctoral research fellow in biology at the University of Iowa.

Next generation rapid MRI technology

Sajan Lingala’s dissertation, “Novel Adaptive Reconstruction Schemes for Accelerated Myocardial Perfusion MRI,” addresses fundamental slow imaging speed limitations of magnetic resonance imaging (MRI) and provides tools for rapid MRI technology.

While an MRI is a non-invasive procedure, traditionally it has also been slow and complicated, which greatly limits its clinical translational value for a cardiac workup. The rapid MRI tools in Lingala’s dissertation positively impact diagnosis and treatment selection for coronary artery disease, which is associated with many types of cardiovascular disease (CVD).

According to the latest heart and stroke statistics from the American Heart Association, CVD is the leading global cause of death, accounting for 17.3 million deaths per year.

Lingala’s dissertation develops advanced MRI techniques to improve the sensitivity and specificity of myocardial perfusion MRI. Myocardial perfusion MRI is a promising tool to identify cardiac muscle tissues that are “at risk” by measuring the underlying blood flow.

“Lingala produced novel, innovative rapid MRI imaging tools targeted towards enabling whole heart free breathing myocardial perfusion MRI, which was not possible before and has high clinical prognostic value in assessing perfusion defects over the whole heart,” says Mathews Jacob, associate professor of electrical and computer engineering and Lingala’s dissertation advisor. “This reliably identifies sub-endocardial defects—all of which are targeted towards improved diagnosis and management of coronary artery disease patients.”

Lingala is working as a postdoctoral research associate in electrical engineering at the University of Southern California.

The dissertation prize winners will be honored during a ceremony at the James F. Jakobsen Graduate Conference on March 26, 2016.
Savvy graduate students understand they must start early to secure funding for their graduate research.

Eli Asikin-Garmager, a doctoral student in linguistics at the University of Iowa, wasted little time learning how to conceptualize a project that benefits the people in his geographical research area.

Asikin-Garmager used his project experience to earn a grant from the Fulbright-Hays Doctoral Dissertation Research Abroad Fellowship Program. The fellowship provides opportunities for doctoral candidates to engage in full-time dissertation research abroad in foreign languages and area studies.

The Fulbright-Hays application process is lengthy and rigorous. An applicant’s proposal, letters of affiliation, and letters of recommendation must demonstrate the project’s feasibility, prior work experience in the designated country, and a strong knowledge of the foreign language to be studied.

Asikin-Garmager is only the fourth UI graduate student in the last decade to receive the prestigious fellowship. The Cedar Falls native credits his advisor, Professor William Davies; other professors in the Linguistics Department; and the Office of Graduate Student Success for helping him achieve this honor.

“The competition for the Fulbright-Hays Fellowship is intense. By winning, Eli has joined the ranks of top researchers studying pressing problems across the globe,” says Jennifer Teitle, assistant dean of graduate development and postdoctoral affairs. “Not only will he be able to fund his research abroad, but he will improve his chances for future funding and his career options.”

Teitle gave Asikin-Garmager technical reviews from UI faculty members who received Fulbright-Hays Fellowships.

“I was able to get a sense of what the reviewers like, and that was a huge help,” Asikin-Garmager says. “Obviously, they have to like the project. But I do think feasibility plays a large role based on some of the comments I received.”

Alex Schott, a postdoctoral research scholar in the Office of Graduate Student Success, provided valuable feedback on Asikin-Garmager’s proposal and letters of affiliation during the revision process.

“You really need someone, even if they have a technical background in your field, who is coming into it cold, to review your proposal and documents” Asikin-Garmager says. “I submitted a letter of support from the University of Mataram (located in Mataram, West Nusa Tenggara, Indonesia), and Alex gave me comments on what my collaborator there should mention and include.”

Understanding the Sasak language

Asikin-Garmager will travel to Indonesia in January for eight months of Fulbright-Hays research on Sasak—a language spoken on Lombok Island in Eastern Indonesia. While Sasak is spoken by 2.5 million people, there is relatively little documentation of the language.

This will be his third trip to Indonesia since summer 2014. During his first two visits, Asikin-Garmager conducted fieldwork in a northern Lombok village, and he established connections with University of Mataram faculty and students who will help recruit study participants and assist him with the
research. These relationships, including one with his primary collaborator, Professor Nur Ahmadi, helped Asikin-Garmager demonstrate the project’s feasibility on his Fulbright-Hays proposal.

“Planting seeds that sprout later can make a difference,” says Asikin-Garmager, who taught English in Costa Rica from 2006-2008 and in Jakarta, Indonesia in 2009.

His Fulbright-Hays project has three goals. First, he intends to investigate how speakers map different meanings to grammatical structures. While the English language has an active and passive construction, Sasak has four different constructions available to express the same event. Asikin-Garmager will study what influences Sasak speakers’ decisions about which structure to use in a given situation.

Second, Asikin-Garmager wants to continue his work of documenting the Sasak language. Last June, Asikin-Garmager traveled to Lombok Island on a Graduate College Summer Fellowship and worked with Professor Ahmadi and others from the University of Mataram to transcribe and translate 25 narratives, approximately half of which they recorded themselves.

“While English has huge databases available for analysis, similar written records don’t exist for Sasak,” Asikin-Garmager says.

His final research aim focuses on variability of word order in Sasak. The nature of any language is such that words are placed in a certain order according to not only the grammar of the language but also other universal constraints on production. The precise inventory of these constraints remains an open question. Asikin-Garmager wants to know what constraints might be operating in Sasak, a language that allows considerable word order flexibility.

“There’s the idea that we put the shortest thing first because it’s the easiest to recall from memory,” Asikin-Garmager says. “I’m also trying to see if we can demonstrate a similar effect for animacy or humanness in Sasak. Is the animate or human thing ordered first? When languages allow flexibility, what determines what goes first?”

While he is conducting research 10,000 miles from home, Asikin-Garmager believes Iowans can benefit from a better understanding of the Sasak language.

“Documentation of a wider range of languages helps us better understand the diversity found in human language,” Asikin-Garmager says. “Since languages vary greatly, such work can expand our understanding of how we use and process language in general.”
The Graduate College’s Office of Graduate Inclusion (OGI) has recently developed programming that focuses on scholar activism, public engagement, building community, and tips and strategies for navigating the academy.

OGI has offered three workshops this semester designed to serve and support under-represented students as they pursue their graduate degrees.

In September, Keisha Blain, assistant professor in the UI’s Department of History, hosted a workshop titled “Lessons from the #Charleston syllabus,” in which graduate students and postdocs learned strategies for effective public engagement as well as resources for teaching.

Blain is co-developer of the #Charleston syllabus, a Twitter movement and crowd-sourcing list of reading recommendations created in response to the racially motivated shooting in Charleston, S.C., in June 2015.

“OGI graduate students don’t have the opportunity to hear from and have conversations with faculty of color,” says Diana Sproles, diversity and inclusion coordinator at the Graduate College. “It’s important that they be able to utilize faculty outside of their programs as mentors and part of their community of support.”

In October, Blain also led an informal discussion focusing on strategies that students of color can use to navigate the academy and create a balance between coursework, writing, teaching, and public engagement.

“Providing workshops is essential. We can go weeks without seeing people of color, which can be difficult if you’re coming from a diverse city, have classes with few people of color, and do not know people in this new environment,” says Lisa Covington, a doctoral student in sociology.

Covington’s major takeaway from Blain’s recent talks was not to be afraid to do research that impacts the communities that students of color call home.

“Doing research you’re interested in benefits those communities, paves the way for students who come after you, and sets the tone for a career that values contributions by scholars of color,” says Covington, who studies African-American girls’ experiences in schools, families, and communities.

OGI offers valuable resources

OGI is committed to serving and supporting under-represented graduate students to be successful in their pursuit of graduate degrees.

OGI assists students by helping create an inclusive and supportive community. OGI provides a safe space for students to have conversations and address concerns, serves as a liaison for connecting students with campus and wellness resources, and offers programming and networking opportunities to help students negotiate the challenges of graduate school.

“We want to make the students feel like they are supposed to be here and shouldn’t have to be questioned about where they came from,” Sproles says. “The students deal with that consistently, but don’t really have a place to go to get their issues resolved.”

Sproles and Joe Henry, OGI’s outreach and recruitment coordinator, welcome all questions and concerns from students. OGI also created a seven-member advisory council to give a voice to graduate students from under-represented populations. Council members are graduate students Lisa Covington, Gifty Crabbe, Reinaldo Franqui, Jasmine Mangrum, Eric Moy, Cristina Munoz, and Bryan Range.
Creating Community

“I know Ms. Sproles and Mr. Henry will be receptive to listening to ideas, thoughts, and experiences of graduate students of color. It is one of the few places on campus where I speak and know that I will be heard,” Covington says. “Institutionally, racism has to be addressed for things to change, and the OGI Advisory Council is a good start to that.”

Covington, who earned her master’s degree at San Diego State University, believes it’s important for students of color to understand the sacrifices their parents, grandparents, and ancestors made for them to “be here to do this work.”

“I have ancestors who were punished for being able to read and because of that I get to read books all day,” Covington says. “If you’re not thinking in terms of standing on the shoulders of people who sacrificed for you to be in graduate school and thinking that ‘I’m meant to be here, this research is very important, and I’m very smart’ then you leave your feelings and credentials in the hands of people who can subjugate them.”

OGI’s November workshop will focus on what it means to be a scholar activist. OGI also will offer a workshop about the importance of mental and physical health in graduate school as well as establish blogs for students to discuss critical issues in higher education.

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— Lisa Covington
PhD student, Sociology
Sheri Martin
2015 Graduate College Summer Fellowship
Candidate for the Ph.D. in Political Science

Adopting insight from social psychology and using survey and experimental methods, Sheri Martin’s dissertation investigates the political significance of the Chinese Government’s traditional values. The Chinese government has recently begun promoting traditional cultural values in high schools, universities, and other public channels.

“The Graduate College Summer Fellowship was an opportunity for me to devote time toward completing my dissertation, building on momentum from last year’s field research in China, and affording an opportunity to establish competitive credentials on the academic job market.”

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