Malleable Ph.D.

The University of Iowa focuses on preparing graduate students for a variety of career options.
The University of Iowa Graduate College focuses on preparing students for a variety of careers. While some pursue tenure-track, research, and teaching jobs inside academia, others seek positions outside the academy. Gaining the skills necessary to be marketable for a broad spectrum of careers requires coursework and professional development outside regular curricula.

Photo used by permission from iStockphoto.

Graduate Education at Iowa
Published each fall and spring by the Graduate College at the University of Iowa
Online at www.grad.uiowa.edu

Jennifer Masada—editor, designer, writer, photos
John Riehl—writer, photos

The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, national origin, color, creed, religion, sex, age, disability, veteran status, sexual orientation, gender identity, or associational preference. The University also affirms its commitment to providing equal opportunities and equal access to University facilities. For additional information, contact the Office of Equal Opportunity and Diversity, 319.335.0705.

Printed by UI Printing Department, job #W13864

The University of Iowa Foundation is a 501(c)(3) tax-exempt organization soliciting tax-deductible private contributions for the benefit of The University of Iowa. The organization is located at One West Park Road, Iowa City, IA 52242; its telephone number is (800) 648-6973. Please consult your tax advisor about the deductibility of your gift.

If you are a resident of the following states, please review the applicable, required disclosure statement. GEORGIA: A full and fair description of the charitable programs and activities and a financial statement is available upon request from the organization using its address/telephone number, listed above. MARYLAND: A copy of the current financial statement is available upon request from the organization using its address/telephone number, listed above. For the cost of copies and postage, documents and information submitted under the Maryland Solicitations Act are available from the Secretary of State, 16 Francis Street, Annapolis, MD 21401, 410-974-5521. NEW JERSEY: INFORMATION FILED WITH THE ATTORNEY GENERAL CONCERNING THIS CHARITABLE SOLICITATION AND THE PERCENTAGE OF CONTRIBUTIONS RECEIVED BY THE CHARITY DURING THE LAST REPORTING PERIOD THAT WERE DEDICATED TO THE CHARITABLE PURPOSE MAY BE OBTAINED FROM THE ATTORNEY GENERAL OF THE STATE OF NEW JERSEY BY CALLING 973-504-6215 AND IS AVAILABLE ON THE INTERNET AT http://www.state.nj.us/lps/ca/charfrm.htm. REGISTRATION WITH THE ATTORNEY GENERAL DOES NOT IMPLY ENDORSEMENT. NEW YORK: A copy of the last financial report filed with the Attorney General is available upon request from the organization using its address/telephone number, listed above, or from the Office of the Attorney General, Department of Law, Charities Bureau, 120 Broadway, New York, NY 10271. PENNSYLVANIA: The official registration and financial information of the State University of Iowa Foundation may be obtained from the Pennsylvania Department of State by calling toll free, within Pennsylvania, (800)732-0999. Registration does not imply endorsement. WASHINGTON: Financial disclosure information is available upon request from the Secretary of State, Charities Program, by calling (800) 332-4483. WEST VIRGINIA: West Virginia residents may obtain a summary of the registration and financial documents from the Secretary of State, State Capitol, Charleston, West Virginia 25305. Registration does not imply endorsement.
Cover

9 MALLEABLE PhD Iowa provides training and professional development to help graduate students prepare for a variety of career options.

Iowa’s top scholars in the news

4 COMMUNITY of PROFESSIONALS Career-enhancing connections for UI postdocs.

6 PLAYWRIGHT WINS MACARTHUR Samuel Hunter says time at Iowa aided his career.

12 PIECING TOGETHER the MEMORY PUZZLE UI grad student lands fellowship to study memory consolidation.

Features

8 PRIZE-WINNING RESEARCH Three graduate students win top dissertation honors.

10 AARON BUSS Behavior and brain activity in childhood development.

14 DAVID GAEBLER Taking math models further to test theories about our universe.

16 LAURA WHITMORE The role of white blood cell activity in inflammatory response.

12 CREATIVE COLLEGE TOWN Transforming college towns through creative entrepreneurship.

18 STUDENTS LAUNCH SYMPOSIUM UI collaborative projects serving Iowa’s incarcerated.
Community of professionals
UI postdocs create career-enhancing connections

As president of the University of Iowa Postdoctoral Association (UIPDA), Cara Hamann sees opportunities to raise the profile of the UIPDA and enhance the postdoc experience at the UI.

Hamann, a postdoctoral research scholar at the College of Public Health’s Injury Prevention Research Center, is working on a handbook for this community of professionals.

“There is a practical reason to have all our information in one place for our postdocs and mentors and the entities they encounter,” Hamann says. “This handbook would be a good resource that lays things out in black and white. There are a lot of good examples out there that we can draw from in order to not have to start from scratch.”

The handbook will include information on recreation services, salary, parking, counseling, student health, bus passes, distinctions between scholar and fellow status, and individual development plans.

Hamann also seeks to foster a greater sense of community among UI postdocs through social media. The UIPDA launched a Facebook page to promote social events and career development opportunities. The page also serves as an informal venue for postdocs to communicate.

This grass roots approach has helped increase participation in the UIPDA. Nearly every position is filled on its Council of College Representatives.

The Council includes Carol Fischer (Dentistry), Candis Hill (Education), Yi Liang (Engineering), Tianyu Liu (Liberal Arts and Sciences), Shan Qian (Pharmacy), Shabbar Ranapurwala (Public Health), and Anup Tilak (Medicine). The College of Nursing council seat is currently open. The Executive Board consists of Hamann (President), Rachel Marek (Vice President), and Gurman Gill (Secretary/Treasurer).

Six additional postdocs sit on the UIPDA’s social, policy and advocacy, and professional development committees. “We have a growing group of postdocs who are actively involved,” Hamann says. “The little things, like the Facebook page, make more of a difference than you might think.”
Improving cyclist and pedestrian safety
UIPDA president team-teaches course

Cara Hamann researches driver response to bicyclist and pedestrian behavior. Hamann, whose work is funded by the Centers for Disease Control and Prevention and the UI Injury Prevention Research Center, has also examined crash and injury records to identify typical crash scenarios and risk factors of crashes involving vehicles, bicycles, and pedestrians. In recent work, she equipped bicycle helmets with GPS cameras to record bicyclist and traffic activity and risk exposure during typical bicycle trips.

Hamann uses data from her bicycle helmet camera study to create test scenarios for the National Advanced Driving Simulator, where researchers study how drivers behave in traffic alongside cyclists and pedestrians.

In spring 2015, Hamann and her mentor, Professor Corinne Peek-Asa, will teach a new course, “Global Road Safety,” for upper-level undergraduate students and graduate students. The class will be taught in one of the UI’s eight technologically-advanced Transform, Interact, Learn, Engage (TILE) classrooms.

Students will study road safety issues around the world and the differences in traffic safety culture. “The course will help students discover ways to prevent roadway injuries and deaths. There will be a combination of an interactive hands-on and seminar feel to the course,” Hamann says. “There will be expert guest speakers and a focus on student-centered active learning.”

“The course will help students discover ways to prevent roadway injuries and death.”
—Cara Hamann

Postdoctoral scholars are essential to the research mission of the University of Iowa. The UI currently hosts nearly 350 postdocs, who, as doctoral degree holders, contribute to research in about 40 programs.

For scholars who have completed a doctoral degree, a postdoctoral appointment serves as a temporary and necessary career-building step as a transition to career independence.

The UIPDA was established in 2011 with support from the Graduate College Office of Postdoctoral Scholars headed by Minnetta Gardinier, associate dean for graduate recruitment and professional development.
Hunter wins MacArthur grant
Playwright says his time at Iowa aided his career

“My decision to apply to Iowa was probably one of the most important professional decisions I ever made.”

Playwright Samuel D. Hunter, who received a Master of Fine Arts from the University of Iowa in 2007, has been named a winner of a 2014 MacArthur Fellowship, also known as the “genius grant.”

Hunter crafts moving portraits of unlikely protagonists and explores the human capacity for empathy through the prism of his characters’ struggles. Born and raised in a small Idaho town, he sets much of his work in his native region, within the nondescript confines of staff break rooms, cramped apartments, and retirement homes inhabited by ordinary people in search of more meaningful human connections.

The Iowa Playwrights Workshop—the UI Department of Theatre Arts’ MFA Program in Playwriting—is an intensive three-year program dedicated to educating playwrights for the professional theater. Hunter received an Iowa Arts Fellowship from the Graduate College to fund his education at the UI.

“The decision to apply to Iowa was probably one of the most important professional decisions I ever made,” Hunter told the University of Iowa Theatre Arts Department. “Not only did it give me three years to find my voice as a writer, but through a nearly constant stream of guest artists I was able to get a sense of how someone gets their plays out into the American theater. I still have relationships with some of the artists I met while in Iowa.”

The MacArthur Fellows Program awards unrestricted fellowships to talented individuals who have shown extraordinary originality and dedication in their creative pursuits and a marked capacity for self-direction. Each fellowship comes with a stipend of $625,000, paid out over five years.

Recent UI-affiliated recipients include alumnus and historian Jacob Soll (2011) and Tim Barrett, former director of the UI Center for the Book (2009).

Hunter is the second Iowa Playwrights Workshop graduate to win a MacArthur Fellowship.
Wallace, a 1994 MFA graduate, received the honor in 1999.

“In the theatre, we are happy when an award like the MacArthur Fellowship goes to a playwright or a young director,” says Art Borreca, associate professor and co-head of the Iowa Playwrights Workshop. “We see it as affirming theatre as an art form, because the theatre has always historically been somewhat in the margins as an art form.”

Hunter’s work
Despite the stark realism of his settings, Hunter leavens his plays with humor and compassion for the lives he depicts, while juxtaposing the banal circumstances of his characters with literary allusions and larger themes of faith and doubt.

Hunter premiered three new plays during the 2013–14 season—The Few (2013), Rest (2014), and A Great Wilderness (2014)—that continue his interest in the poetry of everyday speech and the aspirations of those seldom celebrated on the stage, from a staff of outcasts who run a newspaper for lonely, long-haul truckers to the octogenarian residents of a rest home days away from shutting down.

In The Whale (2012), one of his most widely produced works to date, Hunter tells the story of Charlie, an expository writing instructor who has been driven by grief to a state of morbid obesity. A writing assignment on Melville’s Moby Dick becomes a leitmotif that resonates throughout the play, as its lonely and adrift characters move toward a deeper understanding of the hopes and motivations that propel one another.

“I’m really interested in writing characters who the audience has a hard time identifying with in the very beginning. Characters like a 650-pound man eating himself to death in his apartment or a fundamentalist Christian praying for the rapture,” Hunter told the MacArthur Foundation. “Ultimately if the plays are working, it’s an experiment in empathy. At the beginning, audience members are putting these characters at arm’s length. At the end, they’re letting them in their hearts and minds in a way that’s unexpected.”


He is a resident playwright at New Dramatists, an ensemble playwright at Victory Gardens, and a member of Partial Comfort Productions.

His plays have been produced at such venues as Playwrights Horizons, South Coast Repertory, Victory Gardens, Woolly Mammoth Theatre Company, Seattle Repertory Theatre, The Old Globe, and Rattlestick Playwrights Theater.

“Sam has found directors and artistic directors who have taken a real interest in getting his work onto the stage,” says Borreca, Hunter’s academic advisor at the UI. “That’s certainly a result of his talent, but also because his plays are speaking to something that audiences are interested in.”

Story courtesy of the UI Office of Strategic Communication.

Read LA Times article on Hunter. tinyurl.com/HunterMacArthur
Growing up in a rural town of 2,000 in central Iowa, Mary Huff remembers supportive teachers who fostered her interest in science.

Huff is a doctoral student in psychology at the UI. Her hometown is Greenville, located almost 60 miles southwest of Des Moines. “I didn’t know any researchers doing work similar to what I am doing now; but I was lucky to have wonderful science teachers from grade school to high school who always made learning fun and exciting,” she says.

After earning a psychology degree from Simpson College in Indianola, Huff decided to attend the UI for her graduate education because of its reputation for academic excellence, specifically in the psychology department.

Huff says she discovered an outstanding mentor in Ryan LaLumiere, assistant professor of psychology in the College of Liberal Arts and Sciences.

“You need to pick what’s important to you in selecting a mentor. I wanted to work in a small lab for someone who is just getting his feet off the ground,” Huff says. “I knew I was going to be able to consult Ryan a lot.”

Huff was recently awarded a National Research Service Award (NRSA) from the National Institutes of Health to fund her research on the roles of different neural pathways during memory consolidation in fear conditioning.

She believes LaLumiere’s consistent guidance and close attention to the details of her research process helped her obtain this highly competitive award.

Treating memory-related disorders
Understanding the neurobiology of memory consolidation is crucial for treating memory-related disorders and injuries, such as traumatic brain injury and Alzheimer’s.

Huff, a fourth-year scholar in the Behavioral and Cognitive Neuroscience Program, researches the basolateral amygdala (BLA), a small area of the brain that has long been implicated in disorders such as phobias and post-traumatic stress disorder. The BLA has also been shown to modulate memory consolidation for many types of learning.

This ability to influence memory consolidation is thought to be controlled through discrete pathways to distinct brain regions, including the nucleus accumbens (NA).

“Even though the amygdala does a lot in terms of fear memories specifically and many memories generally, other brain regions could be processing individual aspects, such as the emotional components, of memory,” says Huff. “There are multiple parts of a memory, and it takes the brain as a whole to put it all together.”

Using the newest research tools
Huff uses optogenetics on rats to isolate activity in neural pathways leading from the BLA to the NAs’ two sub-regions, the core and shell. With optogenetics, researchers are able to use light to control neurons that have been genetically sensitized to light. This allows researchers to track neural activity.

“I really got into the learning and memory research because of my mentor, Ryan LaLumiere,” Huff says. “There are always multiple projects going on in our laboratory and early in my time in the lab, he asked if I would be interested in seeing how the experiments are run and possibly being involved in learning/memory research. The questions being asked seemed very exciting, and this was enhanced by the use of optogenetics, which is a cutting edge tool for investigating how the brain works.”

Prior to the development of optogenetics a decade ago, scientists had no reliable method to control and measure connections between brain regions.

LaLumiere emphasizes the importance of using the most recent research tools. “We want to use optogenetics to help us determine the roles of these two different pathways in different aspects of learning. That’s a tremendous advance in our knowledge of how the brain works,” he says.

Prior studies suggest that the NA sub-regions may have distinct roles in memory processing related to contextual learning and nociceptive responses (resulting from painful nerve stimulation), such as those involved in contextual fear learning.

“We want to know what these pathways leading out of the amygdala are doing,” Huff says. “We know the amygdala projects to the nucleus accumbens, and both regions play a role in fear memory. We don’t know for sure how they are interacting.”

Huff optically stimulates and inhibits the BLA-NA pathways to understand their respective roles in the brain’s consolidation of contextual learning and nociceptive learning (via foot shock).
She plans to finish her doctoral degree by May 2016 and is currently in the early stages of looking for a postdoctoral fellowship.

**NRSA Award**

The National Research Service Awards (NRSA) is a family of grants provided by the National Institutes of Health (NIH) for training researchers in the behavioral sciences and health sciences. They are a highly selective source of funding for doctoral and postdoctoral trainees.

The NIH’s National Institute of Mental Health awarded a two-year grant of $58,838 to the UI in support of Huff’s project. The award number F31MH105187 will cover Huff’s stipends, tuition and fees, and institutional allowance (health insurance, research supplies, etc.).

“Mary showed excellent potential, which is one of the things the NIH looks for in an NRSA application,” says LaLumiere, adding that Huff already had a strong publication record when submitting her application. “Her research plan was well thought out and straightforward. She wasn’t proposing the moon, shall we say. She was proposing something that was reasonable to accomplish.”

Believed to be the UI’s only NRSA recipient in this cycle, Huff worked on her application the entire 2013 fall semester. She submitted materials such as a research training plan, biographical statement, and letters of reference.

“There are students at this university doing great things, but they don’t think it’s possible to get an NRSA and stay in their comfort zone,” Huff says. “I can’t lie to anyone and say (the application process) was easy. I had to rearrange some priorities. I did my application while taking classes and doing research. I had to decide how I was going to make it all fit without falling behind.”

Huff adds that even if she hadn’t received an NRSA, she would still consider her time completing the application well spent.

“This has given me a better understanding of what it takes to get funding,” Huff says. “It has given me a realistic glimpse into what it’s like to do research.”
Can you say that in plain language?
Explaining your graduate work to a general audience

Whether you are a geneticist, a historian, or a playwright, you have likely been asked to explain your work to those outside your field of expertise.

While summarizing the essence of your work in 250 or fewer words can be challenging, the benefits far outweigh the difficulty. Time spent crafting a solid technical/scientific abstract is worthwhile, allowing you to communicate key findings and search phrases that can lead to connections with researchers in your field and related disciplines.

Equally important is the public abstract—a summary of research that translates from technical language to lay terms. The public abstract is not a watered-down version of your technical abstract; rather, it functions as an “elevator pitch” for your research. A well-written public abstract summarizes your work in clear, concise, and compelling language that an intelligent person from any discipline can understand.

This general-audience summary should:

- Reveal your professional competence in articulating the value and/or purpose of your research.
- Help you illustrate the purpose of your research to broader audiences, including legislators, the media, and members of the public.
- Prepare you to speak succinctly and conversationally about your work.

Speaking in clear terms about your research helps you prepare proposals for funding, kick-start your career search, relate to researchers in other fields, explore interdisciplinary connections, and explain your work to your friends and relatives. Below are examples showing the use of two writing styles to summarize the same dissertation.

**Example 1:**
Excerpt from an well-written scientific abstract

“Scientists worldwide have been researching alternatives to treat hematologic disorders and have explored induced pluripotent stem cells (iPSCs) and the conversion of one cell type to another... ... The goal of this research was to expand the knowledge of stem cell reprogramming, specifically the reprogramming of iPSC cells.”

**Example 2:**
Excerpt from an effective public abstract

“Many human diseases are linked to cell malfunction. In their search for ways to replace cells, scientists use skin cells to generate “induced” stem cells, which, under the right conditions, can mature into a variety of cell types (e.g., pancreas, liver, eye, brain, and blood). Our research goal is to generate a sufficient quantity of high quality blood cells that have direct clinical applications.”

Excerpts from “Molecular and Cellular Basis of Hematopoietic Stem Cells Maintenance and Differentiation,” Khanh Duong, Ph.D. 2014. Printed with the author’s permission.

---

**Coming in Spring 2015**

**Public abstracts**
The Graduate College and campus partners are collaborating to organize workshops and individual sessions on writing for a general audience. Keep an eye on our events feed at [grad.uiowa.edu](http://grad.uiowa.edu).

**3-Minute Thesis (3MT)**
3MT is a competition modeled after the 3MT event at The University of Queensland, Australia. Department-level competition winners will move on to a campus-wide competition, split into broad discipline areas. To date, organizers are the Graduate College, Graduate Student Senate, and the Department of Rhetoric. More info will be released soon for faculty interested in judging the competition and for graduate students interested in competing.
Spriestersbach Dissertation Prize
Aaron Buss and David Gaebler have each earned top recognition from the University of Iowa’s Graduate College for excellence in doctoral research.

The 2014 D.C. Spriestersbach Dissertation Prize in social sciences was awarded to Buss for his dissertation, “Closing the development loop on the neurocognitive dynamics of task switching.” Buss is originally from Omaha, Neb.

Gaebler, a native of Cedar Rapids, Iowa, received the 2014 D.C. Spriestersbach Dissertation Prize in mathematics/physical sciences/engineering for his dissertation, “Unital dilations of completely positive semigroups.”

The students were nominated by members of their dissertation committee and will be honored during a ceremony in April 2015.

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.”

Winners of the Spriestersbach Prize are the UI’s nominees for the Council of Graduate Schools (CGS)/University Microfilms International (UMI) Distinguished Dissertation Award. This national award is the most prestigious dissertation prize in the country.

Iowa has had five national winners, more than any public institution. Twelve more Iowa nominees have been finalists in the national competition.

Montgomery Dissertation Prize
Laura Whitmore, who earned her Ph.D. in the Interdisciplinary Graduate Program in Molecular and Cellular Biology in 2014, received the Rex Montgomery Dissertation Prize for her dissertation, “The roles of neutrophil NADPH oxidase in resolving systemic inflammation.”

The Montgomery Prize is named for Rex Montgomery, an emeritus professor of biochemistry in the Carver College of Medicine (CCOM), and is awarded annually in the biomedical and health sciences disciplines. Montgomery began at the U1 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. During this time, Montgomery also served the CCOM as associate dean of research and interim vice president of research.
During infancy and early childhood, humans begin to develop abilities to think, act, and respond in the world. These abilities, called executive function, continue to develop through young adulthood as we learn to use memory and reason to plan and complete tasks.

Aaron Buss’ dissertation addresses issues about the nature of executive function and how it changes during learning and development. He developed a theoretical framework to describe the development of executive function, creating a mathematical model to map children’s behaviors and the brain activity occurring during those behaviors. Buss went on to test this model with young children. He found that the model is a reliable tool for predicting behavior based on neural activity.

“Conditions like autism and ADHD are related to executive function and organization of behavior,” says Buss, who earned his Ph.D. in psychology in 2013 at the University of Iowa. “This model gives insight into what’s going on cognitively and how it relates to neural function. This involves determining what types of neural processes are not developing properly. Then you design interventions and recruit neural regions for better developmental outcomes based on what the healthy population is showing.”

Buss’ novel research approach combines behavioral studies of human development with computational analysis of the neural activity collected during behavior observation.

“Addressing this topic required bringing together a host of interdisciplinary tools—computational modeling, innovative empirical methods, and two neuroimaging modalities (fMRI and fNIRS),” says John Spencer, UI professor of psychology and Buss’ dissertation advisor. “Aaron’s dissertation research is a cut above any other dissertation I have seen. Aaron is creating a unique research trajectory.”

Executive function in early childhood

According to the National Center for Learning Disabilities, executive function is a set of mental processes that helps connect past experience with present action. People use it to perform activities such as planning, organizing, strategizing, paying attention to and remembering details, and managing time and space.

Buss’ research examines processes that underlie changes in executive function and task-switching. His work is grounded in dynamic field theory, a well-established theory of psychology that examines patterns of interaction between an individual and all aspects of that person’s living environment.

In dynamic field theory, an individual’s behavior is the result of their unique responses to a constantly changing stream of interrelated facts. The theory also holds that an individual’s behavior is influenced by past experiences, future goals, and subjective perception of the present situation.

Buss developed a computational model that shows how, behaviorally and neurologically, young children learn to follow rules and how they learn to switch with ease from following one rule to following another. As they develop, most children see improvements in their abilities to retrieve and use rules to guide their behavior and at flexibly switching between these rules. Buss wanted to know how these abilities correspond to neurological changes that support executive function.

Buss tested the model with 3- and 4-year-olds, using near-infrared spectroscopy (NIRS)—a non-invasive technology that assesses brain function by detecting changes in blood hemoglobin concentrations associated with neural activity.

Buss is among the first cognitive neuroscience researchers to construct a real-time neural process...

The UI’s Top Dissertations

Brain Activity

AARON BUSS earned his Ph.D. from the UI in 2013 and is an assistant professor of psychology at the University of Tennessee in Knoxville.

Model that successfully predicts behavior (observed) and neural dynamics (measured with NIRS).

“Executive function is an especially important topic of study in early childhood when control and flexibility first emerge and undergo dramatic and lasting changes,” says Buss, who is now an assistant professor of psychology at the University of Tennessee. “Measures of executive function during early childhood predict physical health, substance dependence, personal finances, and criminal offending outcomes nearly three decades later. Furthermore, preschool interventions aimed at improving executive function have produced significant increases in school achievement and behavioral function.”

UI Training Makes the Difference

Buss’ experiences as a UI graduate student prepared him well for the job market. During his graduate studies, Buss was the primary author for four peer-reviewed articles. In addition, the training he received in Spencer’s laboratory helped him develop key skills he needed to find, describe, and measure detailed data, and then to make sense of those details by developing and testing overarching theories.

“You spend your graduate student career answering specialized questions, but it’s about the big picture. What theoretical perspective are you trying to develop? The big picture theoretical perspective is more appealing to employers on the job market,” says Buss.

Buss values the learning environment in Spencer's laboratory, which has a history of training successful researchers. Buss is the second student of Spencer's in the last five years to win the Spriestersbach Prize. Vanessa Simmering received the honor in 2010.

“You are exposed to high standards and expectations working in his lab,” Buss says. “Previous students set a precedent that you try to live up to. Winning the Spriestersbach Prize is really an honor for psychology and John’s lab. It means the world to me to have this recognition and to have been able to maintain the high level of expectations put forth.”
“In every respect, Dave’s dissertation is an outstanding and very original piece of scholarship. The craftsmanship is stunning, the exposition is delightful, and the discoveries in it are profound.”

—Paul Muhly, professor of mathematics and statistics and actuarial science

Looking to expand our understanding of the physical world, David Gaebler’s research lies in the intersection of mathematics and physics, addressing questions explored through both classical and quantum mechanics.

Time, space, energy, and matter interact in ways that can be difficult to predict with theoretical models. Modern physics and mathematics bring us closer, closing gaps in understanding left open by classical physics.

Still, questions remain. What accounts for large- and small-scale changes in the inner workings of the universe? How can we learn to identify and understand the dynamic systems that comprise our world?

To track, quantify, and describe our universe, researchers like Gaebler, who earned his doctorate in mathematics from the University of Iowa in 2013, use mathematics as a testing ground for theories. His research gives theorists a deeper understanding of the relationship between a quantum thermo-dynamical system and its environment, and how this relationship develops over time.

Gaebler’s dissertation combines the theories of French mathematician Jean-Luc Sauvageot and American mathematics professor William Arveson to show that it’s possible to satisfy the mathematical conditions necessary to build a closed system that contains a given open system, not only in classical thermodynamics, but also in quantum thermodynamics.

“If you write out the kinds of criteria that must be satisfied and describe the system quantum-mechanically, David can tell you what you need to do to put it into a closed system,” says Paul Muhly, UI professor of mathematics and statistics and Gaebler’s dissertation advisor. “People had claimed they did this, but had never showed how they might be doing it. The real contribution David made was understanding how certain mathematical concepts interrelate.”

Proving a math theorem

What are closed and open systems, and why do they matter? Gaebler provides an example: our planet and solar system.

Planet Earth is an open system because it receives energy from the sun while also receiving matter and radiation from outer space. The solar system is a closed system because it does not exchange energy and matter with distant stars. The universe, which includes all matter found in galaxies and intergalactic space, is also a closed system.

A property of physics states that an open system must be contained within a closed system. In this case, Earth is part of two closed systems: the solar system and the universe.

In the above example, Earth sits inside the universe. One semigroup describes the time evolution of the smaller system (Earth), and another semigroup describes the time evolution of the bigger system (universe). The relationship between these two semigroups is called a dilation.

Gaebler focuses on two properties of dilations: continuity and unitality. Continuity refers to systems that don’t “jump” from one state to a drastically different state, but travel smoothly.

Unitality is a more complex concept. For example, consider a system made of one molecule bouncing inside a box. If the molecule is released into a bigger box, it has more places to go, but the system still contains only one particle. Now consider a bigger system that includes a second particle, which adds the complication of multiple particles moving—and possibly interacting—inside the box.

The first example is a non-unital dilation. The second example is a unital dilation.

Previous research had proved the existence of dilations, but only non-unital ones; that is, not containing multiple particles. Sauvageot’s approach overcomes this problem, but leaves unclear the continuity of the dilation semigroup.

THE UI’S TOP DISSERTATIONS

models further
workings of our universe through mathematics and physics

“The importance of math theorems
Throughout human evolution, our abilities to identify and respond to changes in our world have affected our very survival. For example, changes in habitat, such as seasonal shifts, can affect the availability of food and shelter. How can we learn to identify and understand the dynamic systems that comprise our world? Modern mathematicians work beyond empirical observations, posing and answering questions about elements we cannot observe directly, such as the movement of gases. Their research is crucial to the basic science that lays the foundation for work on large-scale problems such as global warming or epidemiology. Although the path from math theorem to applied science is long and complex, mathematicians play an undeniably important role.

Continuity and discontinuity in math: how are these ideas useful?

In scientific experiments
“If a physical law involves discontinuity, it can lead to situations where a tiny measurement error can have huge ramifications; on the other hand, if the basic laws governing a system are continuous, then a small change in the initial data will lead to small changes in the behavior over time.”

In real life
“If I’m riding the bus, the time at which I arrive at my destination is a discontinuous function of the time at which I arrive at the bus stop. If I’m one second later than the bus, I might be 15 minutes later in getting to my destination!”

In our understanding of the universe
“Continuity also has something to do with our basic picture of the universe. Most physical laws with which we are familiar, whether it’s gravity or electromagnetism or even relativity, involve continuous functions. A physical law with a discontinuity corresponds to something “bizarre” that the universe is up to, which requires explaining!”

—Responses from David Gaebler, now an assistant professor of mathematics at Hillsdale College in Hillsdale, Michigan.

“...an outstanding and very original piece of scholarship,” says Muhly. “The craftsmanship is stunning, the exposition is delightful, and the discoveries in it are profound. Dave’s thesis is arguably the most well-written dissertation in mathematics that I have seen in my 45-year career at the University of Iowa.”

DAVID GAEBLER earned his PhD from the UI in 2013.
Limiting systemic inflammation

“A potentially life-threatening condition, systemic inflammation affects more than 50 percent of intensive care unit patients. UI researcher Laura Whitmore demonstrates that the neutrophil NADPH oxidase 2 is critical for limiting systemic inflammation and necessary to resolve chronic inflammation.

Following an inflammatory stimulus, infection-fighting white blood cells (neutrophils and monocytes) rapidly migrate toward the site of inflammation where they release molecular mediators, including reactive oxygen species (ROS) generated by the NADPH oxidase 2 (Nox2) enzyme complex.

It is well established that Nox2-derived ROS are necessary for eliminating certain pathogens, but excessive ROS can cause host tissue injury. However, Whitmore’s research shows that Nox2-derived ROS also have an anti-inflammatory function.

“We don’t know exactly what triggers these white blood cells to become active. We don’t know what regulates the cell activity,” says Whitmore, a native of Denver, Iowa. “We think this Nox2 protein has to be activated to control the activity of the cells. Somehow, Nox2 is making these oxygen radicals that are needed to suppress the inflammatory response.”

“Dr. Whitmore has intense scientific curiosity and very appropriate excitement about her results.”

—Jessica Moreland, professor of pediatrics and microbiology at UT Southwestern Medical Center in Dallas, Texas

Dr. Whitmore hypothesized that Nox2-deficient mice would have higher mortality rates and more severe illness during SIRS than normal mice.

To test her hypothesis, Whitmore and her colleagues induced SIRS in Nox2-deficient mice and normal mice. The Nox2-deficient mice had significantly greater mortality and prolonged illness than normal mice, while presenting low body temperatures and blood pressures and more weight loss.

The Nox2-deficient mice also had large numbers of activated neutrophils in their lungs, kidneys, spleens, and livers. In these locations, toxic products are secreted by activated neutrophils, causing organ damage and failure.

These results suggest that Nox2 function is required for the mice to resolve the inflammation and be protected against organ damage and mortality. Whitmore used this data to write first-author papers in the Journal of Innate Immunity and the American Journal of Lung, Cell and Molecular Physiology.

“These two papers provide a molecular mechanism to account for the chronic inflammatory complications that have been recognized to occur in human CGD (chronic granulomatous disease) patients for decades,” says Lee-Ann Allen, professor of internal medicine and microbiology and a member of Whitmore’s dissertation review committee. “Her work also

The anti-inflammatory response

Whitmore’s work has important implications for developing therapies that modulate neutrophil activation and for determining risk level and treatment plans for patients who may develop potentially fatal conditions such as Systemic Inflammatory Response Syndrome (SIRS).

Patients diagnosed with SIRS exhibit symptoms such as abnormalities in body temperature, elevated heart rate, elevated respiratory rate, and abnormal white blood cell count, including elevated counts of immature neutrophils. SIRS can be caused by multiple injuries, including trauma and burns. The most common cause of SIRS is infection. SIRS caused by infection is called sepsis.

Nox2 limits inflammation

Whitmore hypothesized that Nox2-deficient mice would have higher mortality rates and more severe illness during SIRS than normal mice.

To test her hypothesis, Whitmore and her colleagues induced SIRS in Nox2-deficient mice and normal mice. The Nox2-deficient mice had significantly greater mortality and prolonged illness than normal mice, while presenting low body temperatures and blood pressures and more weight loss.

The Nox2-deficient mice also had large numbers of activated neutrophils in their lungs, kidneys, spleens, and livers. In these locations, toxic products are secreted by activated neutrophils, causing organ damage and failure.

These results suggest that Nox2 function is required for the mice to resolve the inflammation and be protected against organ damage and mortality. Whitmore used this data to write first-author papers in the Journal of Innate Immunity and the American Journal of Lung, Cell and Molecular Physiology.

“These two papers provide a molecular mechanism to account for the chronic inflammatory complications that have been recognized to occur in human CGD (chronic granulomatous disease) patients for decades,” says Lee-Ann Allen, professor of internal medicine and microbiology and a member of Whitmore’s dissertation review committee. “Her work also
ic inflammation
The role of white blood cell activity in inflammatory response

Whitmore’s work has important implications for developing therapies that modulate neutrophil activation and for determining risk level and treatment plans for patients who may develop potentially fatal conditions such as Systemic Inflammatory Response Syndrome (SIRS).

LAURA WHITMORE, a native of Denver, Iowa, has accepted a position as a postdoctoral scholar in internal medicine at the University of Iowa. She is studying H. pylori, a bacterium that can cause stomach ulcers and gastric cancer.

“Whitmore’s work has important implications for developing therapies that modulate neutrophil activation and for determining risk level and treatment plans for patients who may develop potentially fatal conditions such as Systemic Inflammatory Response Syndrome (SIRS).”

provides a framework for further studies of the underlying molecular mechanisms of the anti-inflammatory response that is essential to prevent excessive tissue destruction and death following infection and injury.”

Next phase of research
After completing her Ph.D., Whitmore accepted a position as a postdoctoral research scholar in internal medicine at the UI. She works in Allen’s laboratory, studying ways in which neutrophils interact with the bacteria Helicobacter pylori.

“This is a bacteria that causes stomach ulcers and gastric cancer. You ingest the bacteria, and it can infect the mucus lining of your stomach,” says Whitmore.

“These white blood cells go there, but instead of killing the bacteria, they seem to thrive, and we don’t know why. The cells eat the bacteria, but the bacteria don’t seem to die. The cell, instead of killing the bacteria, acts like a factory to help it replicate,” she says.
As the job market continues to shift for Ph.D.s, the Graduate College works with campus partners and higher ed experts to help our students find fulfilling careers.

UI Grad Success offers a range of services and workshops to assist students and their faculty mentors with student career development, including the Malleable Ph.D. workshop held in October 2014.

Students and faculty attended the workshop to learn about the current academic job market and expanded career options outside the academy.

Guest speaker Maren Wood earned a Ph.D. in History from the University of North Carolina at Chapel Hill. In 2012, she started Lilli Research Group, which specializes in helping Ph.D.s prepare for careers beyond the professoriate.

She offers a national perspective on career options, having been hired by the American Historical Association to track career outcomes for history Ph.D.s nationwide. She is a frequent contributor to The Chronicle of Higher Education and other higher ed journals on alternative career paths for Ph.D.s.

Wood also provides career coaching for individual job seekers and research support to graduate programs and departments.

Faculty members Kristy Nabhan-Warren (religious studies) and Ali Hasan (philosophy) organized the event as part of their efforts with the Humanities Advisory Board—a joint project of the College of Liberal Arts & Sciences (CLAS) and The Office of the Vice President for Research and Economic Development (OVPR&ED). The Graduate College and the Obermann Center also served as event sponsors.

The workshop was filled to capacity, with 90 students and 43 faculty from a variety of disciplines.

Given the demand, the Graduate College plans to offer similar workshops and services tailored to the needs of graduate students and designed to complement graduate program’s offerings.

Students report successes

“I met with Alex one-on-one before pursuing non-academic job opportunities. He gave me a lot of good advice related to developing a professional online identity, using Twitter, revising the resume, networking, and so on. I also attended one of your free sessions about preparing for the “alt-ac” job market. I did all of these things while finishing the dissertation (French economic history), and I am now starting a job as a Data Manager for the United Way of Greater Milwaukee! It is a great job that draws on the skills I developed getting a Ph.D. in the humanities, and I have nothing but positive things to say about the advice I received and the value of graduate school. So, thank you for the help you gave me. Your work is very important to a lot of people and has a real impact. There is no doubt your office added value to my graduate education and gave me some tools to succeed on the job market.”

—Christopher McFadin (history)
Providing graduate students with resources to prepare for a variety of career options

Ongoing services for career prep
In a challenging job market, it’s no surprise that some graduate students delay graduation while they look for career options. Expanding their job search can help. The Graduate College’s success services staff offer individual sessions with students seeking:

**Career Advising.** Explore expanded career options for Ph.Ds and tour the Versatile Ph.D. website. Also, learn how to search for jobs, and how to conduct an effective informational interview.

**Professional online identity.** Up to 92% of recruiters perform an online search of a candidate before staging a face-to-face interview. Use this appointment to learn about developing a professional online presence through LinkedIn, Academia.edu, Twitter, and other resources.

**Job materials review.** Available at Gilmore Hall and MRC. Career advisors will review your job application materials, including résumés, CVs and cover letters. Please send materials five (5) days in advance of your appointment.

**Funding consultations.** Available at Gilmore Hall and MRC. Learn to conduct effective funding searches, to use the available databases, and to time-manage the funding search and application processes.

**Proposal review.** Available at Gilmore Hall and MRC. Get detailed and comprehensive advice on your proposal drafts before you send them to the funder. Please send proposals 5 days in advance of your revision deadline for an appointment.

Appointments are available at Gilmore Hall east of the river and the Medical Research Center west of the river. In a year, UI Grad Success has provided 550 hour-long funding/career appointments. In addition, 850 students attended UI Grad Success professional development, and 140 students attended the Careers Outside the Academy workshop.

### Number of career appointments 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities</td>
<td>82</td>
</tr>
<tr>
<td>Biological and Life Science</td>
<td>87</td>
</tr>
<tr>
<td>Physical sciences</td>
<td>62</td>
</tr>
<tr>
<td>Social sciences</td>
<td>107</td>
</tr>
<tr>
<td>Unspecified</td>
<td>13</td>
</tr>
</tbody>
</table>

### Number of funding appointments 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities</td>
<td>80</td>
</tr>
<tr>
<td>Biological and Life Science</td>
<td>27</td>
</tr>
<tr>
<td>Physical sciences</td>
<td>10</td>
</tr>
<tr>
<td>Social sciences</td>
<td>64</td>
</tr>
<tr>
<td>Unspecified</td>
<td>9</td>
</tr>
</tbody>
</table>
The Graduate College has invested in a new career resource for UI graduate students. The Versatile PhD offers support for doctoral students seeking work outside traditional academic career paths.

With the Graduate College’s subscription, students gain free access to Versatile PhD resources. Students can log in with their HawkID through the Graduate College homepage.

The Versatile PhD helps students:

- **Discover interesting career paths**—find career options in humanities and social sciences or STEM fields. Information includes skill sets, preparation, success stories, sample cover letters, and more.

- **Consult the community**—An archive of panel discussions on specific career paths such as entrepreneurship for humanists and social scientists, careers in policy analysis, etc. Students can also find robust discussion forums on a broad range of career prep topics.

- **View job listings appropriate for PhDs**—All jobs listings are posted by volunteers from the Versatile PhD community. Anyone, including recruiters and company representatives, may post a job for free. VPhD registration is required, which is also free of charge.

- **Network with successful PhDs nationwide**—with over 48,000 active members, VPhD offers access to professionals in many fields. Students can search by discipline, city, or word/phrase.

More VPhD features

**Hired**—Authentic resumes and cover letters that got real Ph.D.s their first jobs away from the faculty track. Materials include detailed analysis describing how they made the non-academic pivot and shows the application and hiring process step by step.

**Bio**—Inspiring first-person stories by experienced non-academic Ph.D.s describing how their careers evolved over several years after moving out of the academy, including promotions, advancement, and signature accomplishments.

**Panel**—Detailed inside information on a wide range of specific Ph.D.-friendly careers provided by Ph.D.s in those careers, along with their answers to grad student questions.

**JUMP START your career search**

- **Read** about specific careers in Ph.D. Career Finder

- **See** winning resumes and cover letters written by real Ph.D.s who landed good non-ac jobs

- **Find** someone to informational interview and then contact them

- **Update** your profile so employers can find you

Log on to VPhD here: tinyurl.com/VPhDiowa
Grad students in the community

Are you a University of Iowa graduate student looking for opportunities to speak to a general audience about your work?

Talking to people outside your field of expertise involves careful translation of the technical aspects of your research. Speaking to a general audience in ways that engage and inspire takes preparation and practice.

Savvy graduate students look for a variety of presentation venues, including community organizations, non-profits, K-12, and more.

Reaching out to local schools can be a good place to start, as faculty and administrators continually seek quality enrichment activities for their students.

Michael Ayers, a faculty member at John F. Kennedy High School in Cedar Rapids, wants his students to hear about research and creative work at the graduate level. And, having earned a Ph.D., Ayers knows graduate students need to practice to hone their abilities to speak about their work in concise, clear, and compelling terms.

Ayers invites UI graduate scholars to deliver short, powerful presentations to Kennedy students at a forum called Smart Lunches, a format similar to TED talks.

Recent Smart Lunches at Kennedy

Sebastian De Pascuale, doctoral student in physics and astronomy—De Pascuale spoke about his path to finding his passion in science. His talk drew over 90 students.

Amy Belfi, doctoral student in neuroscience—Belfi discussed her research about how the brain associates music with particular memories. Over 100 students attended.

Mark Pooley, doctoral student in neuroscience—Pooley talked about the local and global impact of developing infrastructure that supports sustainable living. He showed the positive effects of bike paths by processing data during the presentation to create maps based on the Kennedy High School attendance area.

Tina Tootle, assistant professor in anatomy and cell biology—Tootle talked about how scientists use model species to learn important details about human medicine and disease.

Smart Lunch at Kennedy High School is a forum for short, powerful talks about research and creative work at the University of Iowa. This and similar forums are available to UI graduate students seeking to inspire future graduate scholars.
Iowa City is a classic college town. Besides the University of Iowa campus, the nearby downtown area attracts both students and residents to its coffee houses, restaurants, and unique shops.

While the espressos, food, and shopping remain, college towns are beginning to transform from places of consumption to places of creativity and entrepreneurship. In communities like Iowa City, new businesses, technology startups, art galleries, and fine arts performance venues drive economic growth.

**Conference on urban transformation**

The Midwest Creative College Town Conference, held September 20 at hotelVetro in downtown Iowa City, explored opportunities for economic growth and innovation in Midwestern college communities.
As part of the UI School of Urban and Regional Planning’s 50th anniversary celebration, the conference featured presentations by business and cultural startup leaders from Iowa City, East Lansing, Mich., and Lincoln, Neb.

“Planning is about taking a place that has a certain trajectory, a certain economy, and trying to reinvent it as a different place,” says Chuck Connerly, UI professor and director of the School of Urban and Regional Planning. “This is about partnerships that involve planning, government, the private sector, and the educational sector.”

**Creative placemaking in college towns**

For urban planners and economic developers, creative placemaking has become a powerful tool for reinvigorating cities. Creative placemaking emphasizes the importance of local collaborations, according to the National Endowment for the Arts (NEA). A 2010 NEA report states, “In creative placemaking, public, private, not-for-profit, and community sectors partner to strategically shape the physical and social character of a neighborhood, town, tribe, city, or region around arts and cultural activities.”

Creative placemaking is changing the face of downtown Iowa City. The city has gained vitality through innovative business startups and collaborative fine arts projects.

Mark Ginsberg, owner of M.C. Ginsberg Jewelers in Iowa City, has a long history...
of spearheading and funding cultural offerings. Working with the UI and the City of Iowa City, Ginsberg launched events such as free outdoor movies and the Iowa City Jazz Festival—efforts that bring the community together.

Over time, Ginsberg re-envisioned his business, building his plans around local investments in cultural placemaking. “We’ve been able to rebuild our brand with cultural programs,” he says. “Investing in those cultural programs has been a much better approach to marketing and branding who we are than any advertising.”

Taking cultural leadership one step farther, Ginsburg has opened access to his jewelry business’ specialized equipment for local entrepreneurs and artists.

As part of UI ProtoLabs, Ginsberg offers complete computer-aided design (CAD) services, 3D printing-additive manufacturing, vacuum and induction thermal casting, laser welding, and hand fabrication. UI ProtoLabs is a multi-facility prototyping resource at the University of Iowa open to faculty, students and staff, startups, businesses, and the general public. Partners are the University’s Engineering Machine Shop, Physics & Astronomy Machine Shop, and M.C. Ginsberg Advanced Design and Manufacturing.

“We can modify and make tools for anatomy-specific procedures. How does this have anything to do with jewelry? The skill sets necessary for custom-designing a unique sculpture for an intimate space are very similar to making science,” says Ginsberg.

Ginsberg’s staff have worked on a range of projects, including a titanium hip and new tools for making custom-designed jewelry. The group has also prepared a model of a pediatric heart, drawn directly from medical imaging of the patient. Surgeons used the model for pre-surgical procedure planning. “These (projects) feed into how community members interacts with each other and continue to promote new ideas and new businesses,” says Ginsberg.

**Community-supported film**

Andrew Sherburne is co-founder of Film Scene, a community-supported cinema in downtown Iowa City. Film Scene showcases domestic and foreign independent films. Film Scene enjoys success, he says, through the help of other cultural entrepreneurs.

“We’ve been open for nine months, and our membership numbers are on pace to double what we projected,” Sherburne says. “This is in large part due to forming alliances early on with the Bijou at the University and other arts organizations, like the Englert Theatre and the Iowa City Summer of the Arts. That has tapped into this sense of community and given everyone in this community a sense of ownership in the organization we’ve formed.”

**Engaging college students**

Andy Stoll, co-founder and creative director of Seed Here Studio, helps grass roots ideas grow among members of an expanding entrepreneurial and creative community in the Cedar Rapids/Iowa
The university community is rich in creative thinking, Stoll says. UI students not only generate good ideas, but also carry a burning desire to make a difference in the community.

There’s just one problem.

“Students lack the network and often the knowledge of local communities to actually make their ideas happen,” Stoll says. “When you can connect them with the existing networks of business and community leaders, it’s like rocket fuel on these ideas. Then the young people get out and build businesses in the community. They become so engaged that when graduation comes up, instead of moving to New York, they stay here where they’re already doing cool stuff.”

The University of Iowa and the City of Iowa City offer co-working space and networking opportunities for prospective entrepreneurs through the John Pappajohn Entrepreneurial Center’s innovation and collaboration lab, THINC, and the Iowa City CoLab.

For entrepreneurial students in the early stages of business development, THINC provides a space to meet with potential business partners or mentors. Students also can use THINC to meet with clients and work on team projects. The Iowa City CoLab offers workspaces conducive to collaboration.

“The University attracts young people to come here and encourages them through the John Pappajohn Entrepreneurship Center to develop creative ideas,” Connerly says. “Then, with the Iowa City CoLab, we encourage those people to stay and develop those ideas into businesses so that it enhances the economic development of the city and the state of Iowa.”

Brian Ardinger is managing director of NMotion, a mentor-driven startup accelerator in Lincoln, Neb. NMotion helps University of Nebraska students and local business leaders connect for meaningful discussion about potential projects.

“We have found that this networking typically doesn’t happen on the university campus. It happens outside of the university campus,” Ardinger says. “Events like startup weekends and open coffees, where we talk about startups, help drive the conversation back into the university. The students realize they can interact with folks in the ‘real’ world, and it’s not that difficult. Quite frankly, the ‘real’ world wants to interact with the students.”

Continuing the cultural transformation

Connerly plans to continue conversations about creativity and entrepreneurship in college towns.

“The East Lansing folks talked about doing this again next fall in East Lansing, so they can show off Iowa City,” Connerly says. “They feel like we’re a really cool place. That obviously benefits Iowa City, and it certainly benefits East Lansing. I think we’ve started a really important conversation that has importance for Iowa City and the Creative Corridor.”
Who knows everything about enriching the lives of Iowa inmates? According to Kathrina Litchfield, no single person or organization can make that claim.

While she believes the University of Iowa faculty, staff, and students have the skills to make a difference, she says they can’t do it alone. Neither can the Iowa Department of Corrections (DOC) and its director, John Baldwin. Instead, Litchfield believes that when the UI and Iowa Department of Corrections collaborate, their partnership has the power to make changes that benefit inmates.

Litchfield, a doctoral student in language, literacy, and culture, and Gemma Goodale-Sussen, a doctoral candidate in English, organized the Incarcerated in Iowa symposium, held September 6 in Iowa City, to highlight, create, and foster connections between Iowa prisons and surrounding communities, especially the University of Iowa.

“We wanted to bring a large community together who are all tied to a specific focus, but have different perspectives about how to best serve that focus,” Litchfield says. “What makes public engagement so powerful is acknowledging that it’s not just the academy that has all this elite knowledge. There is elite knowledge everywhere. You just have to find it.”

Litchfield and Goodale-Sussen, each participating in outreach projects at the Iowa Medical and Classification Center (IMCC) in Coralville, found each other as fellows in the 2014 Obermann Graduate Institute on Engagement and the Academy. The Incarcerated in Iowa symposium was a product of the Obermann Graduate Institute.

Connecting with others working on similar projects at the UI produces results. “The more we know about each other the stronger each of our programs and projects are, because we have a community that’s aware of them and supports them,” says Litchfield, who is also a 2014 graduate of the UI master’s program in the School of Library and Information Science.

**Prison projects at the UI**

Since 2011, Litchfield has facilitated a monthly book group for 25 incarcerated men at the IMCC. The book group illustrates the benefits of strategic library and literacy programming in improving the lives of the incarcerated.
Students launch symposium
UI collaborative projects serving Iowa’s incarcerated

Goodale-Sussen, who studies 20th-century American literature with a focus on prison narratives, has participated in the IMCC Writers’ Workshop since moving to Iowa City in 2011.

“Most of what (the inmates write) is fiction, but you certainly see their experience refracted in different ways in their writing,” Goodale-Sussen says. “Poetry also is a really popular thing, and in poetry they tend to be more frank about their experiences and their feelings about being incarcerated.”

With approval and assistance from the Iowa Department of Corrections, Goodale-Sussen is currently working with an interdisciplinary group on the Fort Madison Prison Memory Project at the Iowa State Penitentiary.

Mark Fullenkamp, director of web services at the College of Liberal Arts and Sciences, with assistance from Goodale-Sussen and the UI’s History Corps, worked to invert and digitize more than 11,200 glass-plate negatives of inmates from the soon-to-close Iowa State Penitentiary.

Goodale-Sussen is aware that the images of the inmates’ eyes in these photos can create a potent, lasting impression. She wants viewers to regard the inmates’ photos with great care, noting that a portrait captures only a fleeting moment in a person’s life. These camera portraits, says Goodale-Sussen, may convey more about the nature of photography than they can convey about the inmates.

“It’s a constant struggle with the pictures,” says Goodale-Sussen, who earned a Master’s degree in English Literature from the UI in 2013. “I try not to infer too much from an appearance. Sure, that guy looks really nasty. Does that mean he was?”

Other long-standing UI prison projects featured at the symposium were the Women’s Collaborative, the Oakdale Community Choir, the Outreach Prison Clinic, and the Lesbian, Gay, Bisexual, Transgender, Queer and Questioning (LGBTQ2) Clinic.

UI collaboration with the DOC

Last July, Fullenkamp, Goodale-Sussen, Litchfield, and other UI personnel traveled to the Iowa State Penitentiary to visit the prison archives. While there, they met Director Baldwin, who was at the facility in an official capacity for the Department of Corrections.

When Baldwin talked with the UI contingent about possible collaborations between the DOC and the University of Iowa, Litchfield jumped into the discussion. She shared information about the UI’s current initiatives in Iowa’s prisons. The conversation continued, and the group discussed a collaborative symposium.

Baldwin’s immediate response: “I’ll be there.”

In that moment, the idea of the symposium was launched, and Litchfield learned an important lesson. She may not have been the DOC official in the room, but by daring to speak up, Litchfield’s enthusiasm sparked a rich collaboration. She found in Baldwin a careful listener, ready to participate in projects that benefit Iowa inmates.

This interaction has shifted Litchfield’s definition of expert. “I learned an expert is an expert because they’re passionate, too. They’re excited when you’re excited. When you’re showing you have passion and are willing to talk to the people, they want to share their expertise with you.”

Baldwin is excited about future collaborations between the DOC and the UI. Baldwin says the DOC has the nation’s premier data system in ICON (Iowa Correctional Offender Network). The DOC’s 12 years of data would be very useful to researchers as they develop outreach projects.

“The University of Iowa does a great job. There are a lot of good things going on. We need to take the next step. We want to be your partner in more ways than we are currently,” Baldwin said during the symposium. “We have a need. (The University of Iowa) has skill sets we could use. We want to help the students at Iowa get prepared (for entering the job force). We want to give faculty at Iowa experiences that will enrich their lives.”
"I have benefited tremendously from the Ballard-Seashore Fellowship. It has given me the opportunity to focus solely on my dissertation. Fewer distractions means that I don’t have to re-teach myself or review what I have been reading and writing, because it remains fresh in my mind. This is a key factor to producing good writing in a short amount of time."

The fellowship allows Gielau the time necessary to attend conferences in her field, where she can network to make important career connections.

"I am job hunting and attending as many job workshops as I can, while taking advantage of the professional development team at the university."

All of your support goes directly to fund UI graduate students.

www.givetoiowa.org/graduate