



UNIVERSITY COMMUNICATIONS

New Master's Program to Address Need for Data Scientists in Human Behavior

The explosion of data science has changed the ways companies, government offices, and nonprofit organizations track how people purchase and utilize goods, interact with each other, comply with regulations, and support philanthropy and social causes.

The new Master of Science in Psychology: Data Science in Human Behavior at UW-Madison fills a large and growing gap in the marketplace by training students with an undergraduate degree in a core behavioral science to use advanced data science tools to solve applied problems related to how humans act.

From data wrangling and machine

learning to data visualization, interpretation, and action, data science allows us to draw value out of complex, unstructured data. This skill set is in high demand. According to the Bureau of Labor Statistics, data science is among the top 20 fastest-growing occupations, and it is the singular fastest growing occupation for the past three years on LinkedIn's Emerging Jobs Report with 30 percent growth in 2020 alone. Program Director and Professor of Psychology Tim Rogers adds, "The demand is present in all sectors including large and small businesses, government, and nonprofits. So no matter what your interests are in a career, it's

going to require data scientists."

In this accelerated master's program, students will receive rigorous training in statistics and learn how to apply machine learning and other contemporary data science tools to large datasets. They will also learn how to interpret and present their findings to diverse stakeholders.

During the final semester, students will be placed with a company or organization where they will gain real-world experience by conducting an applied capstone project. "The idea here," says Rogers, "is to give students experience working directly with a partner to solve

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Thank you!

FROM THE DEPARTMENT CHAIR



Greetings, Badgers!

What a difference a year makes! Our campus is once again a hub of activity with students filling the classrooms, actively engaged in learning. It feels good to have the return of our thriving campus community. One of my greatest pleasures this semester has been walking past our research laboratories and seeing the large number of undergraduates engaged in cutting-edge research. This learning-by-doing in the laboratories of world-renowned faculty is a critical aspect of our undergraduate experience and is something we are extremely proud of. As always, I am grateful for our dedicated graduate students and faculty mentors who work closely with students as partners in the research enterprise.

An additional measure of just how far we have come from a year ago is that we are looking forward to an active year of faculty recruitment following last year's hiring freeze. The possibility for growth in our faculty and expansion of diversity among our faculty is an exciting prospect, one that will allow us to better serve our students.

Of course, we have not put the pandemic fully behind us. There remains risk of infection and we continue to be vigilant and to engage in safe practices. That said, there is no question we are in a much better place than we were a year ago and we continue to move in the right direction.

As always, if you are in Madison, please stop by to say hello. We are always happy to reconnect and catch up on what has been going on with you!

Craig Berridge

Department Chair

Patricia Goldman-Rakic Professor of Psychology

New Master's Degree Program *continued from page 1*

the problem in a nonacademic environment so that they know what it's like to work outside of the academy and produce some tangible product that they can use on their résumés. It also gives them networking opportunities and contact with people in the field—all things that will be assets when they enter the job market at the end of their degree."

See datascience.psych.wisc.edu for

admission requirements, sample curriculum, and more. Science advances best when all minds contribute and all voices are heard. Data Science in Human Behavior seeks minds and voices that have been marginalized in STEM fields, including those of women and members of underrepresented minority groups. The deadline for applying is March 31, 2022.

DEAN'S MESSAGE



This fall marked a return to in-person classes and events, and it is exciting to be back on campus with students and colleagues! Our classrooms are full, our labs are humming, and the frisbees are flying again on Bascom Hill. The university's COVID-19 protocols are continually adjusted based on the shifting state of the virus. With safe behavior and a campus vaccination rate of more than 90 percent, I am hopeful that we will successfully navigate the fall and winter.

There is much good news to share. UW–Madison welcomed our largest-ever freshman class, with more than 8,400 new students arriving in early September. In October, we celebrated the conclusion of the wildly successful All Ways Forward campaign, which has raised \$4 billion for UW–Madison, and \$652 million for the College of Letters & Science. Annual giving, too, is on track this year, mirroring strong pre-COVID giving trends. I would like to extend my deepest gratitude to alumni whose unwavering support through the hardest of times enabled us to emerge stronger and ready to meet future challenges.

We have great news on capital projects to share. The Wisconsin legislature has approved funding for a new academic building for the College of Letters & Science. Departments and classes currently housed in the deteriorating Humanities Building will be relocated to a modern, interactive, and world-class space that will transform the student learning experience.

A new building for our School of Computer, Data & Information Sciences is also underway, paving the way for this powerhouse new unit to meet a global need for students trained in computational thinking, big data, AI, and related fields.

Finally—our highly anticipated new Chemistry Building should open in 2022, and the impact on our STEM programs will be profound.

It feels great to look forward to so much. As always, a heartfelt thank you for all you do to support L&S. It means the world to us.

On, Wisconsin!

Eric M. Wilcots

Dean of the College of Letters & Science

Mary C. Jacoby Professor of Astronomy

ALUMNI UPDATES

We love to hear what our psychology alumni are doing now. Send your news to us at communications@psych.wisc.edu.

Melissa Ertl '15 earned her counseling psychology PhD from University at Albany–State University of New York in August 2021 and began an NIMH-funded postdoctoral fellowship at Columbia University and the New York State Psychiatric Institute, where she is engaged in community-based research on co-occurring HIV and substance use.

Stephen Reed '66 celebrated 50 years of writing books as described in the July/August issue of the *APS Observer*. His two recent books—the second edition of *Thinking Visually* (Taylor & Francis) and the tenth edition of *Cognition: Theory & Applications* (SAGE)—are his first books in full color.



Barry Perlman '67 recently released his memoir titled *Rearview: A Psychiatrist Reflects on Practice and Advocacy In a Time of Healthcare System Change*. From his first inklings of interest in mental health issues tied to his grandmother's bouts of severe depression and his mother's volunteer work with persons discharged from psychiatric hospitals, to his summer jobs in hospitals, through to closing his practice and retirement, he recounts the entire arc of his psychiatric and medical career. Perlman served as president of the New York State Psychiatric Association and was appointed by NYS Governor George Pataki as chair of the NYS Mental Health Services Council and as a member of the State Hospital Review and Planning Council. Based in participation, he describes the process and tensions involved in shaping public policy.



Writes Perlman, “My hope is that [the book] may be of interest to current psychology majors with an interest in a career in psychiatry as I was as an undergrad.”

Q&A with Color Cognition Expert Karen Schloss



From reading political maps to selecting the ripest banana, color influences how we make judgments about our world. Assistant Professor and color cognition expert Karen Schloss knows something about that. As the director of the Visual Reasoning Lab in the Department of Psychology and Wisconsin Institute for Discovery, Schloss studies how we make conceptual inferences from visual information. Most recently, her work led to a National Science Foundation Early Career Award in 2020. Learn more about Schloss's research and how she's mentoring the next generation of scientists in our Q&A.

How did you become a color cognition researcher?

Ever since I can remember I was fascinated with color. One of my biggest concerns as a four-year-old was how I could organize my crayons so they followed smooth gradation along the different rows in my crayon box. As I got older, I began to wonder about color preferences—why do different people have different preferences? Why do color preferences change over time? I also became curious about how color could be used to communicate meaning. As a psychology major at Barnard College of Columbia University, I took every opportunity to incorporate color into my class projects, from writing about color preferences for my term

paper in a course on decision-making, to conducting an experiment on color-coding and memory in a course on human memory, to investigating the role of color similarity in depth perception for my senior honors thesis. Once in graduate school at UC Berkeley, I got to dive into my own experiments studying the nature of color preferences, and now at UW–Madison my lab focuses on understanding how people infer meaning from colors in visual communication. Although my passion is in color, my lab aims to develop general principles of cognition that extend beyond color to other kinds of visual features (e.g., shape and texture) or perceptual features in other modalities (e.g., in touch and audition).

...
So many of us have color preferences; why is that? Where does that come from and why does it matter?
My research suggests that preferences for a given color, say Badger Red, is determined by the combined preference for all concepts associated with that color. That is, people like colors that remind them of things they like, and they dislike colors that remind them of things they dislike. This account is called the Ecological Valence Theory. Through several experiments, we have found evidence supporting this theory. It can explain why individuals vary in their color preferences: if individuals have different preferences for the same objects, that can result in difference in preferences for colors associated with those objects. For example, if I hate brussels sprouts and you love them, and all else is equal, you will probably like green more than I do. The theory can also explain why color preferences change over time, like with changes in the seasons from summer to fall to winter.

How do we use color to communicate information in design?

People have expectations about the meanings of colors in information visualizations used for visual communication, and it's harder for people to interpret visualizations when designs violate those expectations. So, a key challenge is understanding the nature of those expectations, which can be used to create designs that facilitate communication. Many factors contribute. One such factor is the dark-is-more bias, in which people infer that darker colors represent larger quantities. We can see this used effectively in the media these days, where maps of coronavirus data typically use darker colors to represent larger rates of cases, deaths, and vaccinations across the world.

You've started to bring virtual reality into the classroom. How is it being used and why is it valuable for your students?

Yes! My team in the Wisconsin Institute for Discovery Virtual Environments Group is developing virtual reality tools for education. In the UW Virtual Brain Project (in collaboration with Bas Rokkers at NYU



Schloss Lab Postdoc Chris Racey and Research Assistant Simon Smith guide a volunteer navigating the Virtual Brain.

Abu Dhabi), we are creating interactive 3D diagrams of the human brain, based on real neuroimaging data. In these interactive virtual reality (VR) lessons, learners can travel from sensory organs (e.g., eyes and ears) along neural pathways to sen-

sory cortex in the human brain, and learn about brain structures and function at “information stations” along the way. In my Psychology of Perception (Psych 406) class, we bring VR headsets into class so students can dive into this active way to

learn about the brain while in the lecture hall. Evidence from a study in my lab suggests this method of learning is valuable for producing enjoyable experiences for engaging with the material.

...

What’s something you’re working on now that you’re particularly excited about?

As part of the education plan for my NSF CAREER award, my lab has started a long-term collaboration with Girls Inc. at the Goodman Community Center to broaden participation in science. We are working with a cohort of middle school youth at Girls Inc., the Girls Inc. leaders, and Discovery Outreach here on campus to incorporate youth voice for developing community engagement activities on color perception and information visualization. We will launch these activities at community events at UW–Madison and Goodman Community Center, with the goal of making the materials broadly available to other educators around the world. Along the way, my lab is mentoring the Girls Inc. middle school cohort to support their interests and help build their STEM identity. We are excited to be mentoring the next generation of scientists!

FROM THE ASSOCIATE CHAIR FOR ALUMNI RELATIONS



A year ago, I wrote to you about the Psychology Department’s launch of a diversity, equity, and inclusion initiative. In the past year we have made substantial progress, although much remains to be done.

One of our top priorities has been to hire several new faculty members who would bring more diversity to the department and who also conduct research and teach in areas related to diversity. This past year there was a hiring freeze at the UW because of the financial difficulties

created by the COVID pandemic. Despite the hiring freeze, the university was impressed with our hiring proposal and authorized us to try to recruit three new faculty members in the diversity area.

I am thrilled to report that we have succeeded in recruiting one new faculty member, Dr. Demis Glasford, who is currently on the faculty at the Graduate Center of the City University of New York. Dr. Glasford’s research is on topics such as: what people do when faced with injustice, and how people from groups of different levels of power can work to improve relations across the power differences. Dr. Glasford will come to Wisconsin in fall 2022 as a tenured associate professor and will help with our efforts to recruit more faculty and students to enhance diversity to the department.

The university’s hiring freeze has been lifted and we will continue to recruit new faculty in the coming year. These new fac-

ulty members will not only diversify the faculty, but they will also provide a more welcoming environment in the department for students of color. In addition, they will offer new courses on diversity-related topics.

Our alumni and friends responded to the call last year to give to our new Diversity, Equity, and Inclusion Fund at the UW Foundation. Nearly \$200,000 has been contributed so far! Thank you for your generosity to the Department of Psychology. On, Wisconsin!

Janet S. Hyde

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If you want to support the Department of Psychology’s Diversity, Equity, and Inclusion Fund, please visit go.wisc.edu/551kuo.

Using a social marketing approach to develop a pro-diversity intervention

Mitchell Campbell PhD'21 was just a kid the first time he saw Minnesota's anti-smoking campaign ad on television. "This grandpa is beckoning his grandchild to toddle over to him, and the kid walks right through him because it's clear the grandpa is a ghost. It was devastating. It was effective. It taps into a specific motivation to get people to change their behavior."

As a student in Markus Brauer's social psychology research lab, Campbell focused his graduate work on establishing a method for creating more effective pro-diversity interventions. In their latest paper, Brauer and Campbell show how applying a social marketing approach—like the one the anti-smoking campaign employed—can be effective in the prejudice and discrimination domain, something researchers in that area hadn't yet done.

"The social marketing approach says, 'Let's design an intervention that will be especially effective for particular individuals to do a particular behavior in a particular setting at a particular time,'" says Campbell. Could those same principles be used to develop effective pro-diversity interventions to change behaviors in real-world contexts?

In 2016, Campbell began holding focus groups with University of Wisconsin–Madison students to better understand the current campus climate. Coupled with climate survey data and observational field experiments, the team was then able to identify four necessary components of the social marketing approach to intervention: target behavior, target audience, and the barriers and benefits to participating in the desired behavior.

That target behavior, they decided, was not to get rid of discriminatory behavior, but rather to promote inclusive behavior. "When we talked to students of color, nearly all of them said the most negative impactful experience on campus



Mitchell Campbell



Markus Brauer

were times that they felt outright exclusion or felt abandoned by their peers, like being chosen last for group projects. These kinds of experiences affected them to a greater degree than overtly discriminatory behaviors," says Campbell. Within that category of inclusive behaviors, researchers identified a set of target behaviors with high impact—from attending events on campus that related

to diversity and inclusion to stepping in when witnessing discrimination or problematic behavior happening.

With only a small group of individuals contributing to discriminatory behavior on campus and another small group actively involved in promoting and engaging in inclusive behaviors, Brauer and Campbell identified their target audience as the large group of students who thought diversity was valuable but engaged in few, if any, inclusive behaviors.

As for barriers and benefits, Campbell says, "We asked, 'What prevents them from engaging in those behaviors? What are the things we can tell them to make them more likely to engage in those behaviors? How will being inclusive be beneficial for them personally?' And that determined what psychological constructs we wanted to tap."

Their multifaceted intervention included everything from addressing social norms (sharing survey results that indicated that the vast majority of students embraced diversity and supported the university's pro-diversity initiatives) to utility value (highlighting the numerous personal benefits that students will derive from reaching out and being inclusive to members of other groups).

Lastly, the intervention suggested concrete behaviors that students could engage in to promote inclusion. "Many students didn't know what being inclusive meant," says Campbell. "It's easy to maintain an inclusive self-image when you have no objective metric to use. So we made it specific; if you really do have these inclusive attitudes and values, then you can do the following things. You can live out these values by engaging in these practices."

The intervention itself appeared as a page to add to syllabi in university classrooms. "Classrooms were selected because it was an environment where many students of color reported having experiences of exclusion. It's a place where you

get a random sample of students and have plenty of opportunities for inclusion in the classroom,” Campbell says.

The evaluation study and its results are described elsewhere, but it is clear that the intervention increased pro-diversity attitudes and behaviors, improved the well-being of students from marginalized backgrounds, and reduced the achievement gap. Moving forward, Campbell encourages others to apply these ideas themselves. “If they do their own background research, their own situational

analysis, they can use these social marketing tools to effect change.” Adds Brauer, “One-size-fits-all diversity training doesn’t work. If we want to get people to behave more inclusively, we need to take the organization’s context into account and design pro-diversity initiatives that target the psychological barriers of people in those organizations.”

To access a copy of the intervention, visit the Brauer Group Lab online at psych.wisc.edu/Brauer/BrauerLab.

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Passing of Dr. Leslie Hicks MA’52, PhD’54



Leslie H. Hicks was born August 26, 1927, in Washington, DC, where he spent most of his career as department chair of psychology at Howard University. He died on April 7, 2020, in Silver Spring, Maryland, at the age of 92.

Dr. Hicks graduated from renowned Paul Lawrence Dunbar High School (1944) and served in the Philippines with the U.S. Army (1946–47). He received the bachelor of science degree magna cum laude from Howard University (1949). He earned master of arts (1952) and doctoral degrees (1954) at the University of Wisconsin under Harry Harlow, becoming one of the first African Americans to hold a PhD in physiological-comparative psychology. A Kemper Knapp Fellow, he undertook seminal experimental work in Harlow’s lab, co-publishing with Harlow on discrimination learning theory. He joined Howard’s psychology faculty under the chairmanship of the notable James Bayton in 1954, later serving as department chair (1970–99).

Dr. Hicks upheld high academic standards, promoted psychological science, and advanced African Americans in research. His signature wit attracted students to his lectures and inspired many in the study of psychology. He co-founded the PhD program in psychology (1968). During his tenure, Howard became the first HBCU with an APA-accredited clinical program (1987). The program has since graduated 375+ candidates, contributing to Howard’s record as a top producer of Black/African American PhDs. He continued mentoring after retirement in 2016, dedicating nearly 65 years of service as an educator.

Dr. Hicks contributed substantially to psychology and neuroscience, his focus being on the neural correlates of

behavior. He published numerous research articles and oversaw many dissertations. Beyond his scholarly work, he served in numerous leadership positions in the field of psychology. This included serving as an administrative officer for scientific affairs at the American Psychological Association (1968–70), chair of the Eastern Psychological Association (1973), and serving on multiple committees dedicated for fostering equality and ethics in psychological research and training. He was a member at large at the American Association for the Advancement of Science (1981–85) and served as a consultant to the NIH and other important organizations. In recognition for his outstanding contributions to psychology, he received the APA’s Division 45’s Lifetime Achievement Award in 2005 (one of several lifetime achievement awards), an honorary doctor of science from the University of Wisconsin (2007), and the Howard University Alumni Award for Distinguished Postgraduate Achievement in Psychology and Education (2013).

Dr. Hicks was an accomplished tennis player, jazz lover, and voracious reader; down-to-earth, yet a person of informed opinion who could hold one in thrall with analyses of politics, sports, literature, world events, etc. He was an invited member of Washington’s Historic Cosmos Club. He is survived by his son, Steven Leslie Hicks, three grandchildren, two stepchildren, numerous extended family members, colleagues, friends, and students he inspired.

“His passing represents a significant loss to our department and the field of psychology,” says Craig Berridge, department chair. “The Department of Psychology sends its condolences to his family, friends, and colleagues.”



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