

## NEUROSCIENCE MAJOR LAUNCHES AT CAROLINA

“Psychology is already one of the most popular majors here, and I’ve seen first-hand the amount of excitement our student body has for neuroscience,” enthuses Matt Mattoni, a Senior double-majoring in Psychology and Neuroscience. Effective Fall 2018, students at Carolina are able to officially declare Neuroscience as a major and receive a B.S. degree in Neuroscience. Matt shares, “I changed my major from Biology to Neuroscience. Neuroscience majors are still fairly rare for undergraduate education, so it’s great that UNC has made the commitment to providing this unique course of study.”

Kelly Giovanello, Director of Neuroscience Curricula, is as excited as our students, particularly since she has been involved early in the process. The path to the Neuroscience major began in the Spring of 2009 when a student in Dr. Giovanello’s laboratory approached her about starting

a neuroscience interest club. “I thought, that’s weird – there’s no neuroscience club?” laughs Dr. Giovanello. She became the faculty advisor and sponsor of the Carolina Neuroscience Club, an undergraduate student organization that quickly grew to over 500 members. Within the first two years and with overwhelming student interest, the club began advocating for neuroscience in the undergraduate curriculum, with their grassroots efforts leading to the successful addition of the Neuroscience minor in Fall 2015.

“Not only did the students want the major,” says Dr. Giovanello, “But it was clear that we were going to be left behind as a University if we didn’t have the Neuroscience major. As a research university and the flagship school, it was simply missing from our curriculum.” Dr. Giovanello and a team created an interdisciplinary major in neuroscience that embodies the liberal arts experience. The major draws from

several disciplines, including biology, chemistry, computer science, mathematics, physics, and psychology. Ten departments across campus came together to intellectually co-sponsor the major and offer a wide array of courses. “What is unique about neuroscience at Carolina is that we’ve been able to capture a truly interdisciplinary major, which appropriately reflects the field,” explains Dr. Giovanello. “We’ve been able to leverage resources across the entire university and the campus into this undergraduate major, and it truly sets us apart from other universities. We have students who are choosing to come to UNC Chapel Hill because we have the Neuroscience major.”

With over 200 students already declared, our faculty are thinking towards the future and emerging areas in the field. Neuroscience is expecting a job growth of about 8% by 2024, a strong growth rate when compared to other professions and one that is predicted by an aging population, discoveries leading to new areas of research, and an increased utilization of medications. Accordingly, our faculty want to ensure students at Carolina receive the skills needed to be successfully employed following graduation or to be competitive for graduate school. Carolina faculty are working to add a wet lab course to the curriculum next year, which will offer students hands-on experience in basic neuroscience techniques. “Students will acquire lab skills

they can immediately apply when they go onto the job market. These hard skills will teach them how to work with DNA, western blotting, and electrophysiological recordings of neurons,” shares Dr. Giovanello.

New courses are also being planned and added each semester, including “Neurotechnology” by Dr. Sabrina Robertson. In her course, students will explore the limitations and potential of new neurotechnology as well as the unique ethical issues that arise when studying the brain. “The course will focus on cutting-edge cellular, molecular, and genetic techniques that are becoming essential staples in the modern neuroscientist’s toolkit,” says Dr. Robertson. “Neurotechnology has an automatic wow factor with students – there is nothing like watching students observe this technology in action for the first time.” Dr. Robertson joined the teaching faculty in Psychology and Neuroscience this year to support the new major. She shares, “I came

*continued on page 5*

### CONTENTS

Greetings from the Chair 2

Alumni Spotlight 2

Diversity Spotlight 3

Why I Give 4

Faculty Spotlight 5

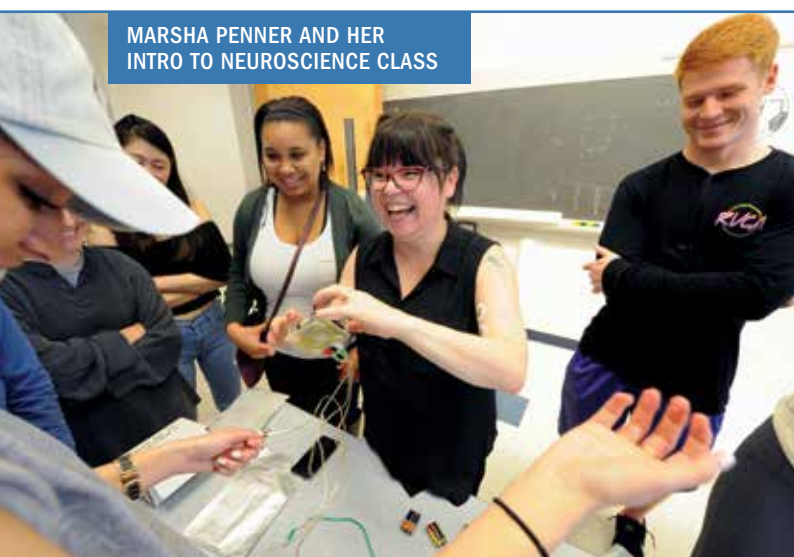
Award Spotlight 6

Graduate Spotlight 6

Community Spotlight 7

Why I Give 8

MARSHA PENNER AND HER  
 INTRO TO NEUROSCIENCE CLASS



Donn Young

## [ GREETINGS from the CHAIR ]

### DEAR ALUMNI AND FRIENDS,

It has been another exciting year at Carolina! Within these pages, you will find a small sampling of some of the new happenings in Psychology and Neuroscience and several spotlights on the innovative research of our faculty and graduate students. I am glad to share some of our recent successes with you.

This year in particular has been a reflective one for us as we have worked on completing an internal assessment of our faculty, graduate training, and undergraduate education. This program review is completed once a decade and I have been amazed by our Department – we have grown tremendously in the last few years!

Our undergraduates are thriving and connecting with the intellectual life of Carolina in ways they never have before – our majors are able to enroll in engaging, research-intensive courses, such as Desiree Griffin's clinical research class that pairs undergraduates with a community partner to conduct clinical psychology research. Another excellent example is Marsha Penner's "Makerspace" class where students design their own hands-on neuroscience activities, created with UNC Makerspace tools, such as laser cutting and 3D printing.

Our doctoral programs are strong – we consistently receive a large number of applications and are highly selective in whom we admit. We are proud to report that our graduate students continue to receive excellent training in research and teaching. Our students consistently receive numerous fellowships and competitive awards; our National Science Foundation fellowship numbers are particularly impressive, and two of our students who recently received NSF fellowships are featured on page 6.

Finally, in reviewing the accomplishments of our faculty these last few years, I am astounded by the commitment our faculty have to their research, teaching, mentoring, and service. Through our collective work, faculty aspire to enhance quality of life, improve society, and help solve the world's greatest problems by carrying out cutting-edge research. Our dedication to teaching remains unparalleled and I am excited to share that this year, two new teaching faculty joined us to meet the overwhelming demand for the neuroscience major and we added a new tenure-track position to provide our graduate students more essential quantitative psychology training.

As you know, our Department cannot succeed and grow without your vital support. Looking back over this past decade, it is because of your commitment to our academic mission that we have been able to enhance and offer so many new experiences for our undergraduate and graduate students. So much of what we do depends on the generous gifts from our alumni and friends. We are appreciative of any gift, large or small. If you have already made a gift to us this year, we thank you for your continued support.

I hope you enjoy hearing news from the Department. When you visit Carolina, I invite you to visit us in Davie and Howell Hall.

Sincerely,



Donald T. Lysle, Ph.D.



DR. DONALD LYSLE

## [ ALUMNI Spotlight ]

### PURSUING PASSION FOR RESEARCH AND TEACHING

Dr. Daniel Peterson, a 2011 graduate of our Cognitive Psychology doctoral program, is now an Assistant Professor in the Department of Psychology at Skidmore College. He chose Carolina for his Ph.D. program for the opportunity to work with his faculty advisor, Dr. Neil Mulligan. He says, "I chose to pursue a Ph.D. because I really loved the research experiences as an undergraduate and wanted to explore that further. I found Neil's research fascinating and he proved to be a wonderful graduate advisor."

"Though it ultimately worked out for me, I was woefully ignorant as to what one could do with my degree when I started graduate school – I assumed everyone became a researcher at an R1 institution," shares Dr. Peterson. "I enrolled at UNC thinking I would end up in a research-centric career. During the

course of my graduate work, however, I found that I really loved teaching and subsequently sought out jobs that allowed me to do both."

At Skidmore College, Dr. Peterson is able to pursue his love of both research and teaching. He conducts applied and theoretical research on human memory, and is exploring multiple lines of research, including the relationship between confidence and accuracy in eyewitness memory. "When a witness tells you, 'I'm positive that's the guy,' how much weight should we place in that level of confidence? An interesting intersection between cognitive psychology and the criminal justice system concerns eyewitness testimony," Dr. Peterson explains. "In my lab, we're currently in the midst of data collection looking at facial recognition memory under varying levels of physiological stress."

In his experiment, participants are presented with a series of faces to learn on a computer screen, one at a time. During this presentation, participants have their non-dominant hand placed in a vessel of water. For participants in the control condition, the water is 70 degrees, while for those in the stress condition, it is an extremely uncomfortable 32 degrees. After a brief delay, they are presented with a much larger set of faces – some already presented, some new. While making an old/new decision about each face, participants must quantify their confidence for that decision. Dr. Peterson says, "We know that physiological stress impairs memory. What we're interested in is whether these participants will have enough metacognitive awareness of this to appropriately scale back their confidence in their decision-making."

In addition to his research, Dr.



DR. DANIEL PETERSON

Peterson teaches a wide array of courses related to psychology and memory. "I love lots of things about teaching," he shares. "But if I had to pick one, it is the immediacy of reinforcement. In research, you put an awful lot of work into submitting a manuscript and it can take months before it is accepted for publication. In teaching, I can sit down with a student and in ten minutes, get them from hopelessly confused to mastering a concept. Seeing that light go off in a student's head who's been struggling – it is incredibly rewarding."

## SPIRE PROGRAM RECOGNIZED FOR DIVERSITY COLLABORATIONS

The UNC Office for Diversity and Inclusion annually awards diversity awards in six categories to recognize the significant contribution, time, and effort of the Carolina community towards advancing an inclusive climate for excellence in teaching, research, public service, and academic endeavors. The Seeding Postdoctoral Innovators in Research and Education (SPIRE) Program was selected this year for the Intergroup Collaboration Award, which recognizes the program's efforts to bring together multiple perspectives to address critical issues of equity and diversity.

Funded since 1999 through the National Institute of General Medicine Sciences, SPIRE provides multi-dimensional professional development for postdoctoral scholars so they may succeed in academic careers, bring engaging teaching methods into the classroom, and increase diversity in the science professions. "SPIRE brings in postdocs for a three-year fellowship, which is 75% research and 25% teaching. Fellows are able to develop independent research programs here at UNC, receive a formal structure of training, and the opportunity to actually teach," explains Dr. Brian Rybarczyk, Associate Director of SPIRE.

Scholars teach for two semesters at one of the four partner institutions of the program – Johnston C. Smith University, NC A&T State University, NC Central University, or UNC Pembroke. Each of the partner institutions have a historical mission to serve underrepresented students, with a majority of its student population identifying with racial/ethnic minority groups.

"Our scholars contribute to the educational experience of the students at the partner sites by introducing new teaching techniques, for example," Dr. Rybarczyk shares. "They offer new courses at those

partner institutions that the students otherwise wouldn't have available and they also mentor students in research. Some of these undergraduates even come to UNC Chapel Hill for our summer program and work with our SPIRE scholars. An experience like this can steer students in pursuing a Ph.D. or getting involved in additional research experiences."

Dr. Monica Gaudier-Diaz, a second-year SPIRE postdoctoral fellow, works in Dr. Keely Muscatell's Carolina Social Neuroscience and Health Laboratory where she studies the neurobiological mechanisms by which social stress negatively impacts behavior and health. In conjunction with the SPIRE program, she teaches Introduction to Neurobiology and is currently preparing a specialized course at NCCU. "In my Neurobiology of Stress class, students will be exposed to topics that are applicable to both their professional and personal life. I am excited for the opportunity to propose and develop a new course about stress, which is a topic I feel passionate about," says Dr. Gaudier-Diaz. "As a SPIRE fellow, I am gaining the skill set necessary to develop a research program that merges human and animal work and to become an effective teacher." Upon completing SPIRE, Dr. Gaudier-Diaz hopes to be a qualified and competitive applicant for a tenure-track position in neuroscience. "I am committed to excel as a neuroscientist who teaches the next generation, contributes to the field through ground-breaking discoveries, and serves the community," she says. "As a Hispanic woman in science, it is

University Office for Diversity and Inclusion



LATHIENA MANNING, MONICA GAUDIER-DIAZ, LINDSEY COSTANTINI, BRIAN RYBARCZYK, AND RUMAY ALEXANDER

my hope to encourage all students to persist in their career of choice – regardless of their background."

Dr. Linda Dykstra has been involved with the SPIRE program since its inception and has served as the Program Director for over ten years. "Multiple initiatives of SPIRE have enriched the University as well as the State of North Carolina," says Dr. Dykstra. "The program has increased the number and participation of postdoctoral scholars who are from underrepresented groups and expanded the university's outreach to students from underrepresented groups through its partnerships with North Carolina campuses. SPIRE was recognized with this award for intergroup collaboration, notably for its success in bringing together multiple perspectives to address diversity and inclusion." Dr. Rybarczyk agrees, "We've had a

fairly long history on campus, but the Diversity Award raises the profile of our program. SPIRE is not just a postdoc program – we have a mission of increasing diversity in the sciences across North Carolina."

**AS A HISPANIC WOMAN IN SCIENCE, IT IS MY HOPE TO ENCOURAGE ALL STUDENTS TO PERSIST IN THEIR CAREER OF CHOICE – REGARDLESS OF THEIR BACKGROUND.**  
–DR. GAUDIER-DIAZ

[ WHY I Give ]

## LVI SCHOLARSHIP ENHANCES THE INTELLECTUAL VIBRANCY OF THURSTONE LAB

Serving as Director of the L.L. Thurstone Laboratory for nearly three decades beginning in 1957, Dr. Lyle Vincent Jones left a lasting legacy at Carolina, especially on the psychometric laboratory, its faculty and postdoctoral fellows, and the many graduate students who were fortunate to be mentored by him. “Not only was he a titan in the field, but Lyle was an extremely influential Vice Chancellor and Dean of the UNC Graduate School,” says Dr. Patrick Curran, Professor and Director of the Quantitative Psychology program, housed within the Thurstone Lab. “That was a major achievement. Not only was Lyle so important to the Department and to us – he had a huge impact on the university.”

Dr. Jones retired in 1992, but still maintained his active research career, his office in Davie Hall, and mentoring of students and colleagues for another twenty years. “I joined the faculty in 1999. He had been retired 7 years when I started,” laughs Dr. Curran. “He still came in every day, contributed to our brown bag seminars, and would meet often to discuss ideas.” Dr. Jones was in high-demand – receiving frequent invites to meet, requests to review manuscripts, and provide feedback. “Even up to the year of his death, there would be speakers who

would come and, very often, people would say, I know he’s not on-campus, but is there any way I can see Lyle?” Dr. Curran says. “There are a lot of stars on-campus – and he was extremely well-known and respected, but people wanted to visit him because Lyle had such an impact on their personal lives. He prized and valued generating knowledge and teaching people about it.”



Courtesy of Susan Hartley

In April 2016, Dr. Jones passed away at the age of 92. As part of his estate, he planned gifts to Reed College and to the L. L. Thurstone Laboratory to give back opportunities to deserving students and junior faculty. “He wanted to pay it forward,” shares his daughter, Susan Hartley. “When he graduated high school, he was offered a \$500 scholarship at Reed. He couldn’t afford the rest of the expenses, so he

worked and waited a year. Luckily, Reed offered him another scholarship.” After completing his freshman year, he served in the U.S. Army Air Corps until 1946, when he returned to the university, earning three degrees by 1950. “He was the first one to say how lucky he was in having things fall into place the way that they did in his life,” says Susan.

“When thinking back to the 70s and 80s at Carolina, this was



DR. JONES WITH GRANDDAUGHTER, SHAWNA HARTLEY

the center of psychometrics and quantitative methodology in the world. For Lyle, the outside visitors were the real lifeblood of the lab. Visitors would come from around the country and the world to spend time here,” explains Dr. Curran. “These visitors would attend meetings, give seminars, and meet with students. Most importantly, they would bring in outside ideas and new perspectives.”

The Lyle V. Jones (LVJ) Visiting Scholarship Program will fund faculty who have been awarded sabbaticals from their national and international universities. Funds may be used to assist with living and travel expenses while faculty visit and participate in Carolina’s renowned Thurstone Lab. “He recognized that, with a scholarship, you could focus on the work at hand. With support from the lab, both financial and professional, you can be the next Lyle V. Jones in your field,” says Susan. “His devotion was to education as a lifelong endeavor. It’s not only learning from textbooks and research, but also learning from the culture and people, giving yourself the opportunity to get out of your comfort zone to grow and be a better person.”

Offering scholarships to visiting faculty provides much-needed financial resources to faculty and allows the Lab to benefit meaningfully from outside perspectives. “Lyle’s gift is an investment in curating and fostering the intellectual energy of the Thurstone Laboratory,” says Dr. Curran. “To me, that strikes at the center core of what Lyle stood for. It has the benefit of helping the individual who will visit, but it is also for the good of everyone, to maintain and promote the intellectual vibrancy of the Lab.”

Your generous donations through the College of Arts and Sciences Foundation provided the following support last year:

<p style="font-size: 2em; font-weight: bold;">38</p> <p>Graduate Students with Travel Support</p>	<p style="font-size: 2em; font-weight: bold;">8</p> <p>Graduate Fellowships</p>	<p style="font-size: 2em; font-weight: bold;">33</p> <p>Graduate Students with Research Support</p>	<p style="font-size: 2em; font-weight: bold;">22</p> <p>Undergraduate Student Interns</p>
<p style="font-size: 2em; font-weight: bold;">2</p> <p>Faculty Members with Research Support</p>	<p style="font-size: 2em; font-weight: bold;">22</p> <p>Undergraduate Student Interns</p>	<p style="font-size: 2em; font-weight: bold;">33</p> <p>Graduate Students with Research Support</p>	<p style="font-size: 2em; font-weight: bold;">22</p> <p>Undergraduate Students with Research Support</p>

Your generosity allowed us to reach our educational and research objectives – which we couldn’t have done without you! Thank you! To make a gift, please visit: <http://psychology.unc.edu/make-a-gift>.

## PREDICTING PARENTING STRATEGIES FOR AFRICAN AMERICAN FATHERS

Supported by a National Science Foundation grant, Associate Professor Shauna Cooper and her Strengths, Assessment, and Resilience (STAR) Lab is studying African American fathers and their relationships, particularly with their adolescent children. “Fathers have a distinct contribution to adolescents’ academic engagement and psychological well-being,” says Dr. Cooper. “The transition to adolescence often can be a time of stress and increased risk for children, but it can also be a time of opportunity. Fathers represent a resource for potentially impacting children’s outcomes in a positive way.”

Data collection for the FAMILY (Fathers and Mothers in the Lives of Youth) Project is currently underway, with the goal of 240 total families across the Carolinas contributing to Dr. Cooper’s research. Families represented in the project are African American families with children in middle school, with parents identifying as married, divorced, separated, or living together. “We want to highlight the diversity of families,” Dr. Cooper explains. “An important goal of this work is to reflect African American families across several slices of economics, education, marital status, and family structure. We are integrating community-based psychological recruitment techniques to reach a broad and diverse population of African American families.”

With initial participation and a one-year follow-up, Dr. Cooper is gathering information to examine parenting as well as the factors that motivate and predict various types of parental ideologies, strategies, and involvement. In her research, Dr. Cooper finds that intergenerational experiences, experiences with racial discrimination and other stressors, marital quality, and co-parenting relationships impact



Courtesy of Shauna Cooper

fathers and their parenting practices. “Fathers’ own experiences with their parents are key for how they interact with their own children – both in terms of the type and quantity of the interaction, but also the quality of that interaction,” says Dr. Cooper. “Fathers that report having more positive and engaged interactions with their fathers or father figures often develop parenting ideologies that lead to greater engagement. My work is broadly focused on highlighting how fathers’ developmental histories and their social experiences impact their parenting strategies – and the implications for those strategies in relation to adolescent outcomes.”

One early finding of the project involves African American fathers’ race-related experiences, which have critical effects, including reduced psychological well-being and increased stress. “Our work suggests how fathers cope with their own experiences of racial discrimination may shape race-related discussions with their children,” shares Dr. Cooper. “Fathers who have yet to fully cope with their own experiences with racial discrimination have much more difficulty talking about these issues with their children. Generationally, fathers’ experiences can have implications for discussions about race and culture.”

Following data collection, the FAMILY Project’s next steps involve education and outreach to support fathers with their parenting, particularly as they help their children successfully navigate the transition to adolescence. “Mothers often have greater areas of support for parenting – we find that fathers have a more constricted network,” says Dr. Cooper. “A lot of existing parenting programs, interventions, and preventions that are focused on African American fathers are focused on fathers with young children. What we have found in our work is that fathers desire additional spaces and support to help parent their children during adolescence.” Dr. Cooper was recently selected as a member of the UNC Thorpe Faculty Engaged Scholars Program, which works with faculty to pursue community engagement through scholarly endeavors. “The Thorpe Program is allowing my work as a development psychologist to go beyond traditional scientific contributions with organizations in the surrounding area,” says Dr. Cooper. “We are focused on the translation and dissemination of this empirical evidence to allow these organizations to direct and tailor their services to meet the needs of African

GENERATIONALLY, FATHERS’ EXPERIENCES CAN HAVE IMPLICATIONS FOR DISCUSSIONS ABOUT RACE AND CULTURE.

—DR. SHAUNA COOPER



SHAUNA COOPER

American fathers.” Another significant objective of the project is addressing gaps in research literature.

“Historically, African American fathers are left out of the discussion of family impact, particularly from a strength-based perspective,” says Dr. Cooper. “The impetus behind the work is really thinking about – and challenging – beliefs about African American fathers. Much of the existing research hasn’t fully tapped into the ways they are making positive contributions to adolescents’ outcomes. We find that they are – and that their parenting practices are based on their prior experiences. The lack of focus on fathers has been a missed opportunity, and we are looking for ways to build upon our knowledge and to utilize that knowledge to impact children and families in positive ways.”

NEUROSCIENCE MAJOR, continued from page 1

to UNC because of the opportunity to help develop a world-class neuroscience program for undergraduates. We are working hard to create a unique top-notch program that relies on the best evidence approaches in neuroscience education.”

[ AWARD Spotlight ]

## GRADUATE STUDENT SUCCESS WITH NATIONAL FELLOWSHIPS

“We are lucky to successfully recruit some of the most talented graduate students in the country,” says Dr. Mitch Prinstein, Director of Graduate Studies. “Their research contributions truly have the potential to impact not only their respective fields – but also society-at-large.” The research capacity of doctoral students in the department has been consistently recognized and accepted by the fellowships they receive. Graduate students across all six doctoral programs frequently receive competitive fellowship awards from federal funding agencies. Last year, 19 graduate students were supported by extramural fellowships, increasing the extent to which they can focus on research.

The number of National Science Foundation (NSF) Graduate Fellowships held by students in the Department is

particularly impressive and has trended upward in recent years. In the current academic year, fifteen students are supported by NSF fellowships. “Our Department has been increasing its focus on training students to submit fellowships,” explains Dr. Prinstein. “I am excited that our students have been able to effectively communicate how the terrific work they are doing at UNC will benefit society.”

One recent recipient of this fellow is Aya Avishai, a graduate student in Social Psychology, who studies tobacco consumption and obesity. “These health behaviors are a major cause of death and disability in the United States,” says Aya. “Not only do these behaviors take a great economic toll, but they also create incalculable personal suffering. Rather than examining which interventions work, in my NSF-funded research, I ask,

‘what can be done to implement the interventions that do work?’” Aya explores which interventions gather public support and the factors that determine that support, in order to find new ways to increase encouragement from the public for effective policies.

Katie Thompson also recently received an NSF Fellowship to support her important work on the biopsychosocial factors associated with body image and disordered eating. She focuses on eating disorders across key points of change in relation to reproduction, such as pregnancy and menopause. “Both perinatal and menopausal periods are associated with significant changes to women’s body shape and weight,” Katie explains. “Although these changes are developmentally normal, these periods



KATIE THOMPSON



AYA AVISHAI

also present a window of unique vulnerability for body image concerns and disordered eating.” The fellowship will allow Katie to work with the UNC Center for Women’s Mood Disorders, which has created the first perinatal psychiatry inpatient unit in the nation. “Being awarded the NSF fellowship is an amazing opportunity that allows me to expand my research experiences,” shares Katie. “It gives me the chance to learn from other researchers via collaboration and to develop new skills as a researcher.”

[ GRADUATE STUDENT Spotlight ]

## UNDERSTANDING THE BRAIN CIRCUITRY REGULATING BINGE DRINKING

Excessive alcohol use is associated with numerous risky behaviors and adverse consequences, including death. Binge drinking is a common alcohol use disorder and evidence suggests that early-life binge drinking significantly increases the risk of alcohol dependence later in life. Generally, a binge drinking episode is achieved following the consumption of four drinks by women and five drinks by men in a two to four-hour window.

48% of Americans reported binge drinking at least once in the previous month, according to a 2016 national survey, and college students are particularly susceptible – with nearly 40% reporting binge drinking. Despite its prevalence and associated dangers, binge drinking lacks an FDA-approved treatment. In order to develop beneficial therapies, researchers must first identify the neural signaling systems that drive binge alcohol consumption. “Manipulating neuropeptide-Y (NPY) and norepinephrine levels can reduce alcohol consumption, meaning

that drugs targeting these systems may prove to be excellent therapeutic targets,” says Nathan Burnham, a 5th year doctoral student.” Nathan is exploring the role of norepinephrine, a neurotransmitter synthesized in the locus coeruleus, a part of the brainstem which sends signals throughout the brain in response to arousal, memory, and stress. Using cutting-edge chemogenetic and pharmacological approaches, Nathan has found that the activation of noradrenergic nuclei, neurons that use norepinephrine for signaling in behavioral activity, diminishes binge-like alcohol consumption. “By increasing norepinephrine presence throughout the locus coeruleus and its connections, mice that normally voluntarily consume great quantities of alcohol significantly reduce their intake,” explains Nathan, “Combined with previous literature, these results are fascinating because they collectively suggest that a hypoactive locus coeruleus could be one contributing factor to excessive alcohol intake.”



NATHAN BURNHAM

Nathan is working towards identifying potential therapeutic targets by using norepinephrine reuptake inhibitors (NRI). By preventing proteins from removing the norepinephrine, NRIs increase norepinephrine available between synapses. “Similar to my work increasing noradrenergic nuclei, administering NRI blunts binge-like alcohol consumption,” he shares. “These findings agree with clinical trials for individuals

with binge eating disorders and nicotine addiction. Work with these populations suggest that the NRIs may be effective potential treatments for these disorders. My research demonstrates that NRIs may be similarly successful in treating alcohol use disorders.”

Nathan is currently pursuing research related to the activation of the locus coeruleus to the lateral hypothalamus pathway, which is proven to reduce alcohol consumption. “The lateral hypothalamus is a neurochemically-diverse region that sends and receives information to regulate all sorts of behaviors,” says Nathan. “Until our research, it was unknown whether specific receptors within the lateral hypothalamus altered binge-like alcohol consumption.” Nathan is still working to determine the neurobiological mechanisms underlying the activation of this pathway, but together, his research has uncovered a novel brain pathway responsible for regulating binge drinking.

## BRINGING COGNITION RESEARCHERS TOGETHER

**T**he NC Cognition Conference is really academic outreach,” says Dr. Neil Mulligan, Professor and Director of Cognitive Psychology. “It helps create and maintain the community of scholars in psychology and neuroscience in North Carolina and in the southeast.” A long-standing conference in the area, the North Carolina Cognition Conference was held in February 2018 at UNC Chapel Hill and over 150 faculty, postdoctoral fellows, graduate students, and undergraduates were in attendance.

The conference serves as a local and regional gathering for researchers interested in cognitive psychology and cognitive neuroscience and rotates among five universities in North Carolina, including Duke, UNC Greensboro, NC State, Wake Forest and UNC Chapel Hill. Each year, a different university hosts the conference, which consists of a series of talks, data blitzes, keynote speaker, and poster sessions in the afternoon. Dr. Michael Kane, conference host at UNCG, explains, “North Carolina and the broader region, including Virginia, South Carolina, Tennessee, and Georgia, is home to an unusual – perhaps remarkable – number of strong cognitive psychology programs and so we have a unique opportunity to put together a top-notch research conference every year that doesn’t require participants to drive more than a few hours to attend.”

Since 1972, the NC Cognition Conference has attracted researchers in cognition and there has been continued interest in its topics, which range from emotional states in working memory, individual differences in memory, executive attention, motivated forgetting, word recognition during reading, to metacognition. Attendees agree that one of the



**I OFTEN LEAVE FEELING RE-INSPIRED ABOUT COGNITION AND EAGER TO CONSIDER NEW APPROACHES AND IDEAS IN MY RESEARCH.**

— DR. IAN DOBBINS

benefits of this regional conference is the collegial and friendly atmosphere. Dr. Mulligan explains, “Everyone tries to make it a welcoming experience for graduate students, especially when they’re presenting their research. Graduate students can find it intimidating to give a talk and often, the NC Cognition Conference is where they present for the first time. They’re able to get really good, constructive feedback from experts in the field.”

Dr. Ian Dobbins, Professor of Psychological and Brain Sciences at Washington University in St. Louis, was selected as the 2018 keynote speaker for his outstanding research on the neural



**UNC UNDERGRADUATE ADILA ISLAM SHARES HER RESEARCH ON THE EFFECTS OF AGING IN RAPID NAMING**

mechanisms underlying memory. His lecture focused on the understanding and analysis of functional imaging and pupillometry data during memory performance. “Historically, the most popular interpretations have been that these signals directly convey if memory retrieval was successful,” explains Dr. Dobbins. “In contrast, my work in this area suggests instead that these responses reflect the attentional value of memory evidence – not its simple presence or absence. Memories, like other types of information in the environment, may capture our attention to the extent they are significant with respect to current goals or expectations.” Dr. Dobbins, formerly a faculty member at Duke University, has attended the

conference several times. “It is a fantastic venue for faculty, graduate students, and postdoctoral researchers because it is small and the speakers are accessible,” shares Dr. Dobbins. “I often leave feeling re-inspired about cognition and eager to consider new approaches and ideas in my research. While I know folks are often partial to national conferences, one could really keep abreast of many of the new ideas in the field and find interdisciplinary connections of relevance, just by attending NCCC. Top this off with the short commute and some good BBQ afterwards, and it makes for a great conference experience without any of the numerous downsides of large national conferences. It really is a great venue.”

## ADMINISTRATION

DONALD T. LYSLE  
*Chair*

MITCH PRINSTEIN  
*Director, Graduate Studies*

KAREN GIL  
*Co-Associate Chair*

JEANNIE LOEB  
*Director, Undergraduate Studies*

REGINA CARELLI  
*Co-Associate Chair*

DEBORAH JONES  
*Director, Research Services*

**MAKE A GIFT ONLINE!**

Visit us at  
[psychology.unc.edu/make-a-gift](http://psychology.unc.edu/make-a-gift)

## [ WHY I Give ]

### \$1M PLANNED GIFT TO EXPAND OPPORTUNITIES FOR FACULTY AND STUDENTS

“I thoroughly enjoyed psychology,” shares Dr. Frank Moretz. “I had Dr. Grant Dahlstrom as my Abnormal Psychology professor and I couldn’t wait to go to his class. Every day was a great experience.” A three-degree Tar Heel, Dr. Moretz recently retired as an anesthesiologist and is the co-owner of Highland Brewery in Asheville, NC. A planned gift of \$3 million will be distributed evenly among Psychology and Neuroscience, UNC Anesthesiology, and UNCA School of Medicine.

“Carolina took a chance on me,” explains Dr. Moretz. “I wasn’t a stellar student. Carolina gave me a great education, great training, and a great opportunity for a successful career. I want to pay it forward.” The Frank Hannon Moretz Excellence Fund will be used to support the Department by recruiting and

retaining top faculty, supporting graduate student research, and developing innovative courses for undergraduates.

“I am so grateful for Dr. Moretz’s gift to my home department,” shares Karen Gil, Associate Chair. “Recruiting and retaining world-class faculty, providing support for our outstanding graduate students, and reimagining the classroom experience for undergraduates are all essential to

advancing Carolina as a leading global public research university.”

Giving to Psychology and Neuroscience and to the University was particularly meaningful for Dr. Moretz. “I’ve used psychology throughout my career and my life. It has better equipped me for all circumstances in my personal life as well as working with the public,” says Dr. Moretz. “I am amazed by what is happening in the fields of

psychology and neuroscience and to see what the Department is currently doing on a molecular level.”

Recently, Dr. Moretz joined Dr. Gil and Department Chair, Donald Lysle, for a tour of our new state-of-the-art research facilities in Howell Hall. “We were excited to share the innovative research of our faculty and students,” says Dr. Lysle. “Dr. Moretz is truly committed to the future of our Department and we are so appreciative of his generosity.” When it came to giving back, Dr. Moretz felt it was important to support UNC. “Funding for my education was provided by the taxpayers of North Carolina,” he explains. “You can’t always count on the legislature to provide the tax dollars needed — private giving is so important.”



KAREN GIL, FRANK MORETZ, AND DONALD LYSLE IN NEWLY RENOVATED HOWELL HALL