University of South Carolina September 2025

THE CAROLINA AUTISM AND NEURODEVELOPMENT RESEARCH CENTER

NEWSLETTER

UPCOMING EVENT

September 17-18

CAN Visiting Scholar: Dr. Tarik Haydar

Dr. Haydar will have lunch with trainees, meet with faculty, deliver a seminar talk and attend an informal happy hour open to all! Read more pg. 4

Science Communication Corner

Read the first Science Communication Corner discussing Dr. Fiona Hollis' new paper on page 9!

The Science Communication Corner is a new feature of the CAN Newsletter and will translate scientific findings from CAN faculty or population hot-topics into layperson language.

Dr. Orgul Ozturk delivering a flash talk at this year's Annual Fall Retreat!

Drs. Katie Wolfe and Sarah Edmunds engage in discussion at this year's Retreat!

Table of Contents

CAROLINA AUTISM & NEURODEVELOPMENT CENTER

UNIVERSITY OF South Carolina

A MESSAGE FROM OUR EXECUTIVE DIRECTOR:

Welcome back, all!

As we start the new year, it is exciting to reflect on the incredible set of accomplishments from CAN this past year and since it was established. As you can see by the infographic on page 6 reflecting accomplishments for the 24-25 FY, this is a strong group that is highly productive! Priorities for this year include formal recognition by USC and the state as a center, establishing a clinical services "arm" of CAN with Dr. McCary's leadership and advancing awareness of CAN by developing marketing products including text, web and video formats. Stay tuned for updates and opportunities to be part of these efforts!

Sincerely,

Jane Roberts, PhD

Carolina Distinguished Professor

CAN Executive Director

Caitlin Hudac
CAN Steering Director
chudac@mailbox.sc.edu

Cheers,
Caitlin

Happy September

Welcome back! We hope you had a restful, restorative, and potentially even productive summer break! CAN has been very active – including new papers, talks, and pieces in local newspapers (for one, check out Dr. Jessie Bradshaw's opinion editorial here!). I recognize the uncertainty facing research in our field/s – funding for science and for training, public scrutiny on about the questions we study and the methods we use, and so on. Despite these ongoing issues, **CAN continues to grow and impact our community!** Even in putting together the newsletter this month, it is clear that we have much to celebrate – and many exciting events to come!

Executive Committee updates

- We made progress on CAN strategic communications - working with external consultants and USC students to improve community knowledge of CAN and CAN member's science.
- We have additional staff, including:
  - Graduate student **Caroline Toburen** contributing a monthly "Science Communication Corner"
  - Graduate assistant **Olivia Trancho** assisting with CAN outreach and community activities
- We are working towards several big events for the year. Stay tuned for more details:
  - USC will host annual SCAND symposium Friday Feb 27
  - AutismConnect 2026 -April 7 (tent.)
- We are gauging interest in early career training (e.g., building labs, managing personnel/budgets) that could be geared towards faculty and postdocs. Let us know if there is a topic of interest!

This month's CAN Science

9/3 8:30am: Dr. Abby Hogan, CLINTRUSC Grant
9/10 8:30am: Dr. Jessie Bradshaw, Preterm infants and autism
9/17 3:00 PM: VISITING SCHOLAR - Dr. Tarik Haydar (see Page 4)
9/24 8:30am: CAN Exec. Committee meeting
10/1 8:30am: Dr. David Stodden, Motor Development link to Autism - A Complex Issue

CAN Science is a virtual science meeting that takes place most Wednesdays from 8:30-9:15 am. Interested in presenting or attending? Email Sydney to learn more!

Visiting Scholar Series: Dr. Tarik Haydar

THE CAN RESEARCH CENTER

go.sc.edu/CAN

September 17-18, 2025

Dr. Haydar received his doctorate at the University of Maryland School of Medicine working on brain development in the Trisomy 16 mouse model of Down syndrome with Dr. Bruce Krueger. He completed postdoctoral studies at Yale University with Dr. Pasko Rakic examining control of forebrain neural precursor development and then started his independent laboratory at Children's National Medical Center in Washington D.C. in 2002.

Dr. Haydar joined the Anatomy & Neurobiology Department at BUSM in 2010 where he maintains a vibrant laboratory using state-of-the-art molecular and surgical techniques to study mammalian brain development. Using in utero electroporation, in vivo genetic fate mapping and cell ablation techniques, this project is focused on how the multiple populations of neural stem cells and progenitor cells in the embryonic brain are lineally related and how their combined output leads to proper forebrain development. In addition, the lab is focusing on brain development and function in trisomy mouse models of Down syndrome using cellular, molecular and behavioral techniques. Dr. Haydar's research is funded by the NIH (NINDS and NICHD). See below for his visit schedule!

VISIT SCHEDULE	
9.17	12:00-1:30 PM | Lunch with trainees at CLS 403 3:00-4:00 PM | Seminar: **Mechanisms of early cortical development impacting the etiology of intellectual disabilities** at the Walsh Conference Room in Barnwell College!
9.18	9:00-10:00 AM | Breakfast at SOM, room D27

Scan to RSVP!

Tarik Haydar, PhD

Chair, Boston University Chobanian & Avedisian School of Medicine

Event Highlights:

CAN 2025 Fall Retreat

THANK YOU
for another great event!

On August 14, CAN hosted the Annual Fall Retreat. Attendees heard updates from CAN leadership, faculty and trainee flash talks from several disciplines, and met with our Community Advisory Board!

60+
attendees

8
faculty talks

3
trainee talks

5
featured community members

CAN Year in Review
Highlights from the 2024-2025 CAN Research Center annual report

Event Highlights: CAN 2025 Fall Retreat

Who We Are

- 36 Faculty
- 4 Faculty Hires in FY24
- 8 Colleges Included

Research

- 3,146 families in research registry
- 20 new awards totaling $13.09M in FY24; $80,659,026 since 2019
- 40+ papers published in FY24

Training

- 156 undergraduates
  60 graduate students
  15 postdoc scholars
- 450 neuroscience majors
- $289,236 to trainees in FY24; $1,985,614 since 2019

Community Development

- Interfaced with 1400+ community members via 5 major activities & 5 community events
- 9 advocates within CAN Community Advisory Board

In our first "mini-panel", the CAN Community Advisory Board answered questions from faculty and trainees, including:

- What kind of research is would be most meaningful to you?
- What can we do to translate and communicate our work (including animal work!)?
- What is your pet peeve when it comes to talking to researchers/people in academia?
- How do you want to receive information about our scientific findings?

CAN CAB members: Dallas Nicholson, Nikki Happe, and Stephanie Turner

Do you have questions for our CAB?
Contact can@sc.edu to sign up to present at one of our quarterly meetings!

Upcoming CAN Programming

Fall 2025

September: Visiting Scholar- Dr. Tarik Haydar (9/17-18)

October: Buddy Walk

November: CAN spotlight at SCSM Accessibility Morning

December: Holiday party

Spring 2026

January: "Big ideas" CAN seminar

February: SCAND in Columbia 2/27

March: Visiting Scholar-Dr. Sarabeth Broder-Fingert (3/23-24); Disability Advocacy Day

April: Research Roundup; Neurodiversity Among Us; AutismConnect 2026

...and more to come!

Stay tuned for details on events and additional trainee events!

go.sc.edu/CAN
can@sc.edu

CAROLINA AUTISM & NEURODEVELOPMENT RESEARCH CENTER

SC AUTISM POLICY UPDATE

The update

- ASD Services Providers manual will be updated on 9/1/2025
- The term "Comprehensive Psychological Evaluation" will be replaced by "**Comprehensive Diagnostic Assessment**" (CDA)
- Licensed physicians (**MD, DO**) may administer the CDA, in addition to licensed: PhD, PsyD, LPES
- The CDA must include a structured observation to support the diagnostic criteria outlined by the most recent DSM-5, including: **ADI-R, ADOS, CARS**
- The **Medical Care Home Autism Assessment** will be added as an approved option for primary care physicians to determine medical necessity for certainMedicaid members without requiring a CDA.
- Medicaid members between 18-36 months of age who are determined to be "at-risk" by a qualified provider using a validated secondary autism screener can be determined **presumptively eligible** for autism services while awaiting a referral and completion of a CDA

Who it effects:

- People with autism and their families
- Physicians
- Autism service providers (e.g., early interventionists, therapists, etc.)

Why it matters:

- Allows physicians to provide appropriate diagnoses, reduce wait times for ASD services
- Flexibility in diagnostic tools
- Streamlines services for Medicaid members with ASD diagnoses
- Creates alignment across state agencies to avoid duplication of services
- **Questions? Email: ASDProvider@scdhhs.gov**

Learn more or register for informational webinars here. Thank you to Dr. Shawna McCafferty, Senior Autism Policy Consultant at DHHS, for the policy update at the Fall Retreat!

Welcome:

Dr. Lindsay McCary

BACKGROUND

Please welcome Dr. Lindsay McCary, CAN's new Clinical Director! After attending NC State, Dr. McCary came to USC for her Ph.D. in school psychology. After completing a school-based internship in Louisiana, she returned to South Carolina as a post-doctoral fellow in the Neurodevelopmental Disorders Lab. She transitioned to UW-Madison and the Waisman Center, where she was a scientist and director of the autism clinic, before becoming Chief Clinical Officer at KGH, an interdisciplinary autism therapy clinic. Dr. McCary joined CAN in August.

CLINICAL SUPPORT AVAILABLE

Dr. McCary looks forward to meeting with CAN PIs to discuss clinical needs or support you may have for your projects and to gather input on clinical initiatives

"I am so excited to take all of the experience I've developed across research, teaching, and clinical service to develop this new opportunity and see all the great work that we can continue through CAN!"

FUN FACT

Dr. McCary has traveled to all 50 United States!

RESEARCH INTERESTS

"My research is mostly on pre-professional and post-professional training of interdisciplinary professionals, specifically, expanding capacity to serve autistic individuals and individuals with intellectual and developmental disabilities. I'm interested in capacity building and training mental health professionals including psychologists, social workers, professional counselors, and licensed marriage and family therapists on how to work with autistic individuals, and the autistic family.

Mental health needs are understudied and undertreated in this population. Now that I've seen what the service system looks like, I'm motivated to enhance it. We're never going to have enough professionals. So, how do we help support the professionals we do have? That's been my passion recently."

Science Communication Corner

CAROLINA AUTISM & NEURODEVELOPMENT RESEARCH CENTER

Beyond the Powerhouse: Mitochondria's Multifaceted Roles and Their Links to Neurodevelopmental Disorders

Written by Caroline Toburen,
ATOBUREN@email.sc.edu

For as long as we can remember, the mitochondrion was simply described as the "powerhouse of the cell," thanks to its production of ATP, or energy. While this is true, the role of mitochondria is much more dynamic and multifunctional, especially in the context of development and behavior. Recent advancements in mitochondrial research reveal that these organelles play diverse and critical roles that extend well beyond simple energy production.

Mitochondria have been implicated in a broad array of cellular processes relevant to neurodevelopmental disorders, particularly autism spectrum disorder. They help balance neurotransmitters that control brain processes, like GABA (which calms brain activity), serotonin (which affects mood), and dopamine (which plays a role in reward and motivation). These same chemicals are often out of balance in individuals with autism. Mitochondria also help regulate how brain cells response to stress, how they communicate with each other, and even how our genes are turned on or off during development.

Research from the Hollis Lab

Dr. Fiona Hollis and her lab in the Physiology, Pharmacology, & Neuroscience Department at USC School of Medicine focus on mitochondrial involvement in a wide variety of psychiatric disorders, including NDDs. In a recently published study, graduate student Alexia Crockett and Dr. Hollis, along with CAN faculty Dr. Susan Wood, demonstrated that stress exposure leads to distinct mitochondrial profiles that aligned with stress-induced behaviors within certain brain regions, though these behaviors vary by sex. Male mice exhibit significant avoidance behavior in response to stress, while stressed female mice exhibit significant mitochondrial deficits linked to passive coping behaviors. These findings are particularly significant for understanding neurodevelopmental disorders like autism, where altered stress responses, sensory sensitivities, and social impairments are hallmark symptoms. The identification of brain-wide mitochondrial networks offers a potential mechanistic framework for these behavioral manifestations.

Continued on next page>>

Science Communication Corner

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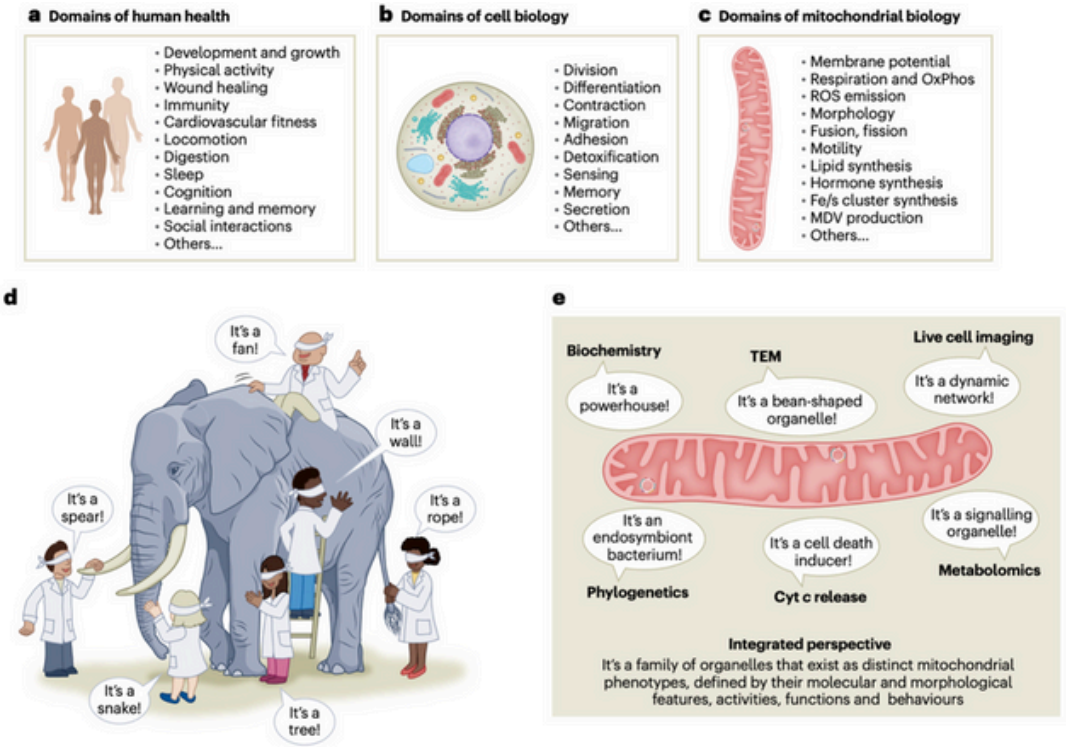
Mitochondrial problems are common in autistic individuals, regardless of what their specific symptoms or support needs may be. Mitochondria help balance brain chemicals and keep cell health in check. When they make energy, they also release byproducts—like exhaust from a car. These byproducts, called reactive oxygen species, are usually kept under control by the body's antioxidants, but if there is too much "exhaust" and not enough cleanup, it can cause something called oxidative or redox stress. This can damage brain cells and interfere with how cells talk to each other, which may affect how the brain grows and works overtime. In addition, mitochondria regulate epigenetic changes—how genes are turned on or off without changing the genetic code itself. All these roles make mitochondria a key "hub" where genetics and environment meet to influence brain development. Evidence from human, animal, and cellular studies suggest that mitochondrial issues may not be the same throughout the entire body but may vary by brain region. This aligns with how autism symptoms and severity levels vary from one autistic person to another.

The big takeaway? Mitochondria are not just energy producers; they are deeply involved in shaping how the brain develops and how it responds to the world. Since they are so adaptable, improving mitochondrial health may offer new possibilities for therapies or interventions that support the autistic community. Recognizing the significance of these insights, the Hollis Lab is now turning its attention to how mitochondrial networks evolve over time, particularly during early development, to better understand their role in shaping stress and resilience in neurodevelopment disorders.

Science Communication Corner is a new feature of CAN's monthly newsletter. Written by Psychology PhD student Caroline Toburen, it will feature new scientific findings from CAN faculty and trainees, discuss hot topics in the field of autism and neurodevelopment, and MORE--but always written in lay-language. Together, we CAN make science more accessible!

Want to be featured in an upcoming Science Communication Corner? Email sydneya@mailbox.sc.edu!



Thank you Dr. Fiona Hollis for contributing!