

Letter from the Chair

Dear Fellow Members of the Department,

With the Fall semester drawing to a close, it's time to reflect on the past months and look forward to the activities that will start up after a well-earned Winter break. Special thanks to our terrific graduate students Dickson, Yi, David and Jinyan for their hard work putting together this semester's newsletter!

Our new academic year began with a retreat at the Essex Center, where we enjoyed good conversation, a delicious lunch, S'mores around the fire and some outdoor games in a rustic atmosphere. We welcomed our new Masters and PhD students to the department and the semester was off to a great start! In the past few months our faculty, students, and staff have been very active and productive in all manner of ways.

In September, expert biomedical forensic scientist Dr. Adam Hall joined the department as an Assistant Professor. Many of our faculty received significant grants and/or contracts, including Doug Rosene, Rhoda Au, Kip Thomas, Ron Killiany and Chand Chandrasekaran. Two were recognized with BU awards- Dr. Tara Moore was honored as an inaugural BUSM Distinguished Faculty of the Month in recognition of her outstanding service to the institution, and Dr. Chand Chandrasekaran received a prestigious Moorman-Simon Interdisciplinary Career Development Professorship.

Our students were also very productive over the past six months. Hearty congratulations go to MD-PhD students David Swain and Katelyn Trecartin, each of whom was awarded an NIH Predoctoral Training Fellowship (NRSA). Chris Lim and Lauren Zajac successfully defended their dissertations and moved on to exciting new endeavors at MGH and Biogen respectively. We look forward to the dissertation defenses of several of our PhD students in the coming few months, including those of Chelsea Leblang, Ajay Uprety, and Katelyn Trecartin.

Related to our graduate programs, Selvin Marroquin and I reached out to department alumni and received a robust response from over 100 alumni interested in maintaining contact and a relationship with the department! Plans for alumni related events are in the works. We also for the first time had graduate program booths at the Society for Neuroscience and the Annual Biomedical Research Conference for Minority Students meetings. This, together with advertising on Instagram and other venues, has led to a healthy uptick in the number of applicants to both our Masters and PhD programs. Our teaching in the Medical, Dental and Graduate School curricula was successful as is typical, with faculty, staff and graduate teaching assistants receiving enthusiastic kudos from students enrolled in the course.

With only a few busy weeks remaining to the end of Fall semester, we look forward to several outstanding upcoming seminars, successful completion of our Fall courses, and our Winter Holiday Party at the "Castle". After that- happy holidays and have a *great* break everyone!

With all best wishes,

Jennie Luebke
Waterhouse Professor & Chair

A Trip to the Body Worlds Exhibit

Our Anatomy & Neurobiology graduate students and faculty visited Gunther von Hagen's famous Body Worlds Exhibit at the Museum of Science, one of a ongoing series of productive collaborations between our department and the museum. Incoming students explored the exhibits alongside established students in the program who were eager to share their experiences in gross anatomy.

This was a great first event of the semester and afforded our incoming students an introduction to the study of anatomy while also getting to know their fellow classmates!



Clockwise: Students at the entrance of the Body Worlds Exhibit | One of the many examples of the breathtaking demos at the exhibit | Katie Babcock (PhD student) pondering the many bones of the skull | Dr. Zumwalt and Master's students Karim & Amara taking a closer look at one of the displays | Yashar and Wayne (PhD students) looking at brain slices.

A Trip to The SfN Conference

In October 2019, many of our students attended the annual Society for Neuroscience Meeting in Chicago. At the meeting, students had the chance to present the latest in their exciting research, reach out to potential students, and catch up with department alumni and fellow colleagues from around the world. We look forward to seeing where the students will take their research as we enter the next decade!

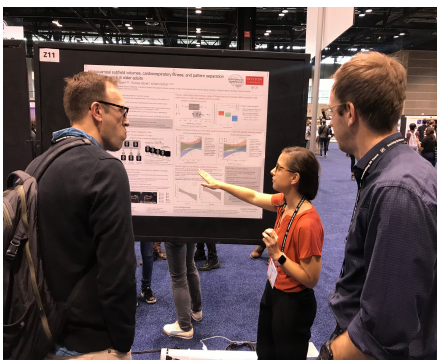


Student Spotlight: Katie Kern



PhD student Katie Kern's Fall Semester has been busy to say the least. A member of the Schon lab, she recently published a paper in *Hippocampus* titled, "Cardiorespiratory fitness predicts effective connectivity between the hippocampus and default mode network nodes in young adults." She is the co-first author with a graduate of the MAMS program, Corey Kronman.

Link: <https://www.ncbi.nlm.nih.gov/pubmed/31647603>



Katie was among the students who attended the SfN Meeting in October 2019. At the conference she presented her research. On November 7, 2019, Katie had the opportunity to deliver a lightning talk called "Hippocampal Subfield Volumes, Pattern Separation Task Performance & Cardiorespiratory Fitness in Older Adults" at the NeuroBoston Fall Symposium for Boston Area Neuroscience Group at Boston College.

Congratulations on your recent accomplishments Katie! We are excited to see what you will do next.

Meet our new Masters & PhD students!



Zannan Zhang (Annie), 1st Year PhD

Hometown: Malvern, PA

Degree(s): BA Anthropology; MS Anatomy & Neurobiology

Research Interests: MRI research as a noninvasive method for identifying disease progression.

Hobbies: drawing, yoga, cooking, and occasionally music

What you hope to accomplish from your time in the program? I hope to be a well-rounded researcher capable of being a representative of the department out in the world.

What do you see yourself doing in the future? I think that it's too difficult to say definitively, but I would like to find out in my time here.

Raissa Zuim Dantas De Souza, 1st Year Masters

Hometown: Santana de Parna  ba, Brazil

Degrees(s): BS Biology; minors in Communication Studies & Chemistry

Research Interests: Alzheimer's, memory, anything related to the brain. I love the brain.

Hobbies: Soccer, biker for life, cooker, cat mom.

What you hope to accomplish from your time in the program? I want to keep growing and maturing as a person and on the field of neurology, I want to give back and teach others.

What you see yourself doing in the future? A neurologist.



Morgane Butler, 1st Year PhD

Hometown: Sudbury, MA

Degree(s): BSc Human Physiology

Research Interests: neurological pathologies and neurodegenerative disorders

Hobbies: running, eating, sleeping, running, eating, sleeping

What you hope to accomplish from your time in the program? Learn so much science that if I told my 12-year-old self how much I knew she would pass out on the spot.

What you see yourself doing in the future? Nobel Prize in Physiology or Medicine holder

Christina Nowak, 1st Year Masters

Hometown: West Point, NY

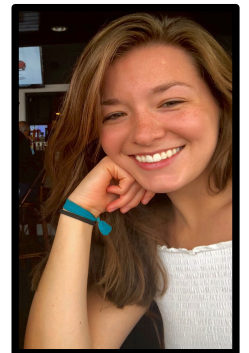
Degrees earned from college: BS Neuroscience, minor in German

Research Interests: Alzheimer's, TBI & CTE

Hobbies: Ice hockey, reading, anything active

What you hope to accomplish from your time in the program? Gain a greater understanding of the brain and human body in order to further research on degenerative brain diseases.

What you see yourself doing in the future? Research



Sarah DeVries, 1st Year PhD

Hometown: Middletown, New York

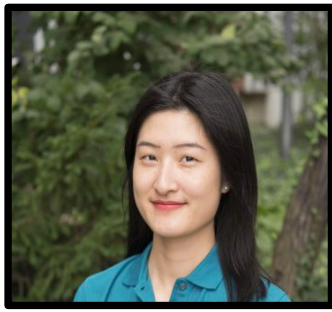
Degree(s): B.S. in Integrative Neuroscience, Minor in education

Research Interests: neurodegenerative diseases (i.e. Parkinson's, Alzheimer's)

What do you accomplish from your time in the program? I hope to further my knowledge of neuroscience and eventually be able to generate novel ideas independently

What do you see yourself doing in the future? I see myself working in a lab while being a professor.

More on the next page →



Jinyan Zhou, 1st Year Masters

Hometown: China

Degree(s): BS Molecular & Cellular Biology

Research Interests: neurodegenerative diseases and neurosurgery (e.g. meningiomas)

Hobbies: cooking, travelling, collecting, trying new things, listening to EXO

What you hope to accomplish from your time in the program? I hope to be able to study science, develop my ability to conduct research, and teach science.

What you see yourself doing in the future? Full time student, part time chef



Dickson T. Chen, 1st Year Masters

Hometown: Seattle, WA

Degree(s): BS Neuroscience, BS Biology

Research Interests: Huntington's Disease, aging, neurodegenerative disease, neuropathology

Hobbies: photography (<https://dicksontchen.com>), ultimate frisbee, hiking, travelling

What you hope to accomplish from your time in the program? Improve my understanding of the connection between research and medicine/healthcare & leaving a legacy.

What you see yourself doing in the future? Breakthroughs in the medical field.

Holiday Corner

Here are some low-cost activities you can do to enjoy the holiday season!

Local events in the Boston area

Christmas Tree lighting in Roxbury

❄️ 12/21 - *Holiday Tree Lighting in Roxbury*

Disney on ice!

❄️ 12/20 - *Disney on Ice at Agganis Arena*

Visit the Gardens at Elm Banks

❄️ 12/20 - *Mass Hort's Snow Village*

See an Ice Show

❄️ 12/21 - *Kendall Square Holiday Ice Show*

Go Ice Skating

❄️ 12/21 - *Boston Seaport Skating Park*

Let your ears drown in classical music

❄️ 12/21 - *Holiday Pops at Symphony Hall*

See the famous holiday light & sound show

❄️ 12/21 - *Blink! 2019*

Songs for the Season...

Immerse yourself in the soft and festive vocals of famous artists like John Mayer, Michael Bublé, Frank Sinatra and more! Only found on A&N's Holiday Classics playlist.

Scan the QR code below to listen!

PLAYLIST
A&N's Holiday Classics
Created by Dickson T. Chen • 4 hr 1 min

TITLE	ARTIST	ALBUM
♥ Haven't Met You Yet	Michael Bublé	Crazy Love
♥ Carol of the Bells	Mykola Dmytrovych Leontovych, John ...	Home Alone (Original Motion Picture S...
♥ Gravity	John Mayer	Continuum
♥ Have Yourself a Merry Little Christmas	Michael Bublé	Christmas
♥ Somethin' Stupid	Frank Sinatra, Nancy Sinatra	The World We Knew
♥ Waiting On the World to Change	John Mayer	Continuum
♥ Frosty The Snowman - 78rpm Version	Gene Autry	NOW That's What I Call Christmas Vol...
♥ Everything	Michael Bublé	Call Me Irresponsible (Standard Edition)
♥ Love on the Weekend	John Mayer	Love on the Weekend
♥ Feeling Good	Michael Bublé	It's Time
♥ No Such Thing	John Mayer	Room For Squares
♥ Home	Michael Bublé	It's Time
♥ Silent Night	Frank Sinatra	Christmas
♥ Have Yourself A Merry Little Christmas	Judy Garland	NOW That's What I Call Christmas Vol...

2019 Photo Album



MS 2019 Graduates.



Drs. Lim and Zajac celebrate their defenses.



New A&N MS and PhD students



A&N retreat



Halloween



Thanksgiving



Holiday Celebrations

Recent Publications

Our faculty, post-doctorate fellows, students and alumni have been working on some great projects!

Here are some of their most recent departmental publications.

Alosco ML, Stein TD, Tripodis Y, Chua AS, Kowall NW, Huber BR, Goldstein LE, Cantu RC, Katz DI, Palmisano JN, Martin B, Cherry JD, Mahar I, **Killiany RJ**, McClean MD, **Au R**, Alvarez V, **Stern RA**, Mez J, McKee AC. Association of white matter rarefaction, arteriolosclerosis, and tau with dementia in chronic traumatic encephalopathy. *JAMA Neurol.* 2019. doi:10.1001/jamaneurol.2019.2244.

Ang TFA, An N, Ding H, **Devine S**, Auerbach SH, Massaro J, **Joshi P**, **Liu X**, **Liu Y**, **Mahon E**, **Au R**, Lin H. Using data science to diagnose and characterize heterogeneity of Alzheimer's disease. *Alzheimers. Dement. (NY)*. 2019;5:264-271.

Borra E, Luppino G, Gerbella M, Rozzi S, **Rockland KS**. Projections to the putamen from neurons located in the white matter and the claustrum in the macaque. *J. Comp. Neurol.* 2019. doi: 10.1002/cne.24768.

Chandrasekaran C, Blurton SP, Gondan M. Audiovisual detection at different intensities and delays. *J. Math. Psychol.* 2019;91:159-175.

Chandrasekaran C, Hawkins GE. ChaRTr: an R toolbox for modeling choices and response times in decision-making tasks. *J. Neurosci. Methods.* 2019;328:108432.

DeVivo R, **Zajac L**, Mian A, Cervantes-Arslanian A, Steinberg E, Alosco ML, Mez J, **Stern R**, **Killiany R**, Alzheimer's Disease Neuroimaging Initiative. Differentiating between healthy control participants and those with mild cognitive impairment using volumetric MRI data. *J. Int. Neuropsychol. Soc.* 2019;25(8):800-810.

Diaz MM, Ojukwu K, Padilla J, Steed K, Schmalz N, Tullis A, Mageno A, McCleve J, White E, Stark ME, Morton DA, Seastrand G, Ray G, Lassetter J, Wilson-Ashworth HA, **Wisco JJ**. Who is the teacher and who is the student? The dual service- and engaged-learning pedagogical model of anatomy academy. *J. Med. Educ. Curric. Dev.* 2019;6:2382120519883271.

Dvir Y, Frazier JA, **Joseph RM**, Mokrova I, Moore PS, O'Shea TM, Hooper SR, Santos HP Jr, Kuban K, ELGAN Study Investigators. Psychiatric symptoms: prevalence, co-occurrence, and functioning among extremely low gestational age newborns at age 10 years. *J. Dev. Behav. Pediatr.* 2019;40(9):725-734.

Go V, **Bowley BGE**, **Pessina MA**, Zhang ZG, Chopp M, Finklestein SP, **Rosene DL**, **Medalla M**, Buller B, **Moore TL**. Extracellular vesicles from mesenchymal stem cells reduce microglial-mediated neuroinflammation after cortical injury in aged Rhesus monkeys. *GeroScience.* 2019; 1-17.

Kronman CA, **Kern KL**, **Nauer RK**, **Dunne MF**, Storer TW, **Schon K**. Cardiorespiratory fitness predicts effective connectivity between the hippocampus and default mode network nodes in young adults. *Hippocampus.* 2019; 1- 16.

Lai J, Su Y, **Swain DL**, Huang D, Getchevski D, **Gong H**; The Role of Schlemm's Canal Endothelium Cellular Connectivity in Giant Vacuole Formation: A 3D Electron Microscopy Study. *Invest. Ophthalmol. Vis. Sci.* 2019;60(5):1630-1643.

Moore TL, **Pessina MA**, **Bowley BGE**, **Calderazzo SM**, **Medalla M**, Go V, Zhang ZG, Chopp M, Finklestein S, Harbaugh AG, **Rosene DL**, Buller B. Mesenchymal derived exosomes enhance recovery of motor function in a monkey model of cortical injury. *Restor Neurol Neurosci.* 2019;37(4):347-362.

Nauer RK, **Dunne MF**, Stern CE, Storer TW, **Schon K**. Improving fitness increases dentate gyrus/CA3 volume in the hippocampal head and enhances memory in young adults. *Hippocampus.* 2019; 1-17.

Recent Departmental Publications (cont.)

Orczykowski ME, Calderazzo SM, Shobin E, Pessina MA, Oblak AL, Finklestein SP, Kramer BC, Mortazavi F, Rosene DL, Moore TL. Cell based therapy reduces secondary damage and increases extent of microglial activation following cortical injury. *Brain Res.* 2019;1717:147-159.

Puzo C, Labriola C, Sugarman MA, Tripodis Y, Martin B, Palmisano JN, Steinberg EG, Stein TD, Kowall NW, McKee AC, Mez J, Killiany RJ, Stern RA, Alosco ML. Independent effects of white matter hyperintensities on cognitive, neuropsychiatric, and functional decline: a longitudinal investigation using the National Alzheimer's Coordinating Center Uniform Data Set. *Alzheimer's Res. Ther.* 2019;11(1):64.

Ruan QT, Yazdani N, Blum BC, Beierle WL, Coelho MA, Fultz EK, Healy AF, Shahin JR, Kandola AK, Luttik KP, Zheng K, Smith NJ, Cheung J, Mortazavi F, Apicco DJ, Ragu Varman D, Ramamoorthy S, Ash PEA, Rosene DL, Emili A, Wolozin B, Szumlanski KK, Bryant CD. A mutation in *Hnrnp1* that decreases methamphetamine-induced reinforcement, reward, and dopamine release and increases synaptosomal hnRNPH and mitochondrial proteins. *J Neurosci.* 2019. 1808-19.

Toba MN, Godefroy O, Rushmore RJ, Zavaglia M, Maatoug R, Hilgetag CC, Valero-Cabre A. Revisiting 'brain modes' in a new computational era: approaches for the characterization of brain-behavioural associations. *Brain.* 2019; awz343.

Stay tuned for our Spring Newsletter!

Alumni Outreach

In the past year we have increased our efforts to stay in touch with alumni and keep up with their important contributions in the sciences; we now have a list of alumni going back to 1969! This is the first issue some alumni will see in many years and we are excited to reconnect with them and showcase the evolution of the Department.

We will be featuring alumni in future editions of our newsletter, as well as on our website Instagram page. Through these efforts we hope to strengthen our A&N "family" ties and keep up with our growing alumni body. If you have news to share with us, please contact Administrative Coordinator Selvin Marroquin (selvinm@bu.edu).



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