

# ANATOMY & NEUROBIOLOGY



Boston University School of Medicine – Division of Graduate Medical Sciences

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## A Message from Dr. Moss



Welcome to this issue of the Anatomy & Neurobiology Newsletter. As we are well into Spring 2016 semester, we can begin to reflect back on some of the highlights of this academic year. First, we are very pleased to welcome two new faculty members to the Department, **Maya Medalla, PhD** and **Peter Cummings, MD**. Dr. Medalla, who was a postdoctoral fellow in the Department with Dr. Jennie Luebke and now Assistant Professor, brings a new and exciting area of systems neuroscience research to the Department. Peter Cummings, the former chief neuropathologist of the Massachusetts Medical Examiner's office, is familiar to many students and

faculty from his several invited talks and brain cuttings in the Medical School in the past few years, as well as for his teaching in our Forensic Anthropology Master's program. As an Assistant Professor in the Department, he will be playing a major role in teaching Medical Gross Anatomy and directing the gross anatomy course for the Physicians Assistant Program.

We also are pleased to recognize three of our PhD students who successfully defended their thesis this year. Congratulations to **Nadine Heyworth, Joe Goodliffe, and Charlie Yang**.

We also take the opportunity to remember one of the Department's most beloved faculty member, **Dr. William McNary**, Dr. McNary, who passed away 25 years ago, was renowned for his remarkable teaching acumen in Gross Anatomy, and as the first Dean of Student Affairs, for his warm, caring, and compassionate support of both medical and graduate students alike. For our students who never had the opportunity to know Dr. McNary, two student awards and a wing of the R-building of the Medical School are named in his memory.

## New Graduate Student Representatives

As the school year ends, we would like to acknowledge **Sharon O'Neill** and **Suji Reprakash**, our 2015-2016 grad student representatives, for serving as liaisons between the students and faculty and for organizing several successful committees and events. We would also like to thank the students who served on various committees within the department. For the 2016-2017 school year, the PhD and MS representatives, respectively, will be **Lauren Zajac** and **Minny Suh**. New student committees will be formed in September.

Have anything you would like to see published in the newsletter?

Email updates, stories, or upcoming events to  
[anatneuronews@gmail.com](mailto:anatneuronews@gmail.com)

## 2015-2016 Newsletter and Network Committee

Alexandra E. Wink, Newsletter Editor

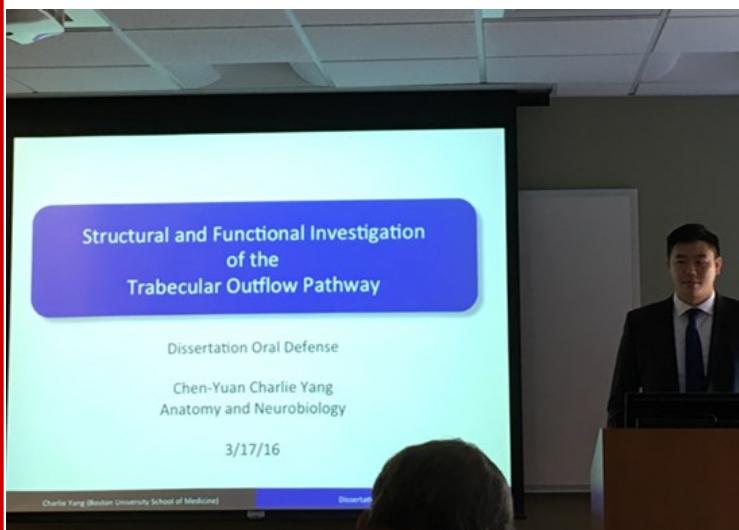
Ruiyi Ren

John Caccaviello

## Recent (and Upcoming) Thesis Defense Seminars

Congratulations to **Joe Goodliffe** (right, Haydar Lab), **Charlie Yang** (bottom left, Gong Lab), and **Nadine Heyworth** (bottom right, Moss-Rosene Lab) for successfully presenting and defending their doctoral thesis work in the Spring Semester.

Two of our M.D./Ph.D. students, **Phil Montenigro** and **Danielle Farrar**, will be defending their theses on April 22 and 28, respectively. Defense seminars are open to all and will be held in the Alan Peters Seminar Room.



## Department Potluck at the Goldman School of Dental Medicine

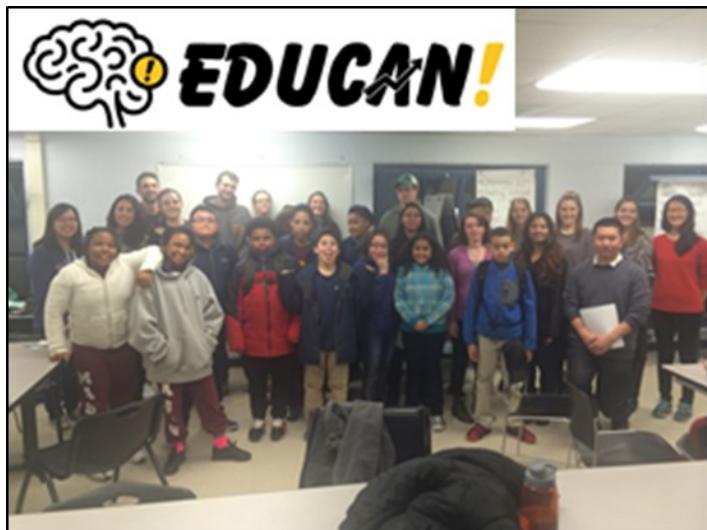
**Dr. Whitney**, **Dr. Pessina**, and **Maryann MacNeil**, faculty in the Dental Anatomical Sciences course, organized a potluck social event in March at the Goldman School of Dental Medicine. Thanks to all who attended and helped make this potluck a success!



## Student News

### Educan! Initiative Recognized

**Jessica Hill and Julia Lai**, 2<sup>nd</sup> year Masters Students, received recognition and a grant for their community education initiative, "Educan!". Other students in the department, **Ana Balta, George Farah, Suji Reprakash, Alyssa Schmitt**, and **Minny Suh** also participated as leaders and mentors in this project. For our department website's feature about Educan!, see <http://tinyurl.com/gqmx4c>.



### Student Research Presented at Local, National, and International Meetings

**Alexandra Wink**, a 3<sup>rd</sup> year PhD Student, presented her research, "Relation of Varus Knee Thrust during Walking to Risk of Incident and Progressive MRI Lesions" as one of the "Nine Highest-Rated Abstracts by Young Investigators" at the Osteoarthritis Research Society International World Congress on Osteoarthritis in Amsterdam, Netherlands, on April 1<sup>st</sup>, 2016. Alexandra also presented a poster, "Structural and Sensorimotor Deficits Associated with Abnormal Frontal Plane Motion of the Knee during Gait" at the American Association of Anatomists meeting at Experi-

mental Biology in San Diego, CA, on April 4<sup>th</sup>, 2016 as a Graduate Poster Award Finalist.

**Lauren Zajac**, a 2<sup>nd</sup> year PhD Student, presented a poster, "Brain Networks Involved in the Aesthetic Judgment of Visual Stimuli," at the 44<sup>th</sup> Annual International Neuropsychological Society Meeting in Boston in February. Lauren also presented a poster, "White Matter Seed Regions Produce More Complex Structural Networks and Greater Differences between Healthy Elderly Subjects and Subjects with Alzheimer's Disease", at the 29<sup>th</sup> Annual Poster Symposium for the MA Alzheimer's Disease Research Center, BU Alzheimer's Disease Center, and Harvard NeuroDiscovery Center.

### Student Publication Selected as Cover Image for the Journal of Neuroscience

A paper by **Joe Goodliffe** et al., "Absence of Prenatal Forebrain Defects in the Dp(16)1Yey/+ Mouse Model of Down Syndrome", was recently published in Volume 36, Issue 10 of the *Journal of Neuroscience*. In addition, a figure from his paper was chosen as the cover image for the issue.



### Upcoming Events

**April 22:** Thesis Defense, Phil Montenigro

**April 28:** Thesis Defense, Danielle Farrar

**May 3:** Anatomical Donor Memorial Service

**May 6:** 22nd Annual Henry I. Russek Student Achievement Day

**May 13:** GMS Commencement

**May 15:** BU Commencement

### 28th Annual Giuseppina d'Elia Raviola Memorial Seminar

Guest Speaker Luk Vandenberghe, PhD

"Unlocking the Prospect of Genetic Medicine in Ophthalmology and Beyond"

April 28, 2016, 1:00 pm-2:30 pm

Keefer Auditorium, E-111

Reception to Follow: Alan Peters Seminar Room, L-1008



## Student Service in the Department of Anatomy and Neurobiology

Keeping with the holiday spirit, the Boston University Anatomy and Neurobiology Graduate Student Outreach Committee organized a donation drive pre-winter break 2015. With help from faculty, staff, and students, the department was able to raise funds to sponsor a six-year-old orphaned Syrian child for a year through the NuDay Syria and the Syrian American Medical Society (SAMS) Foundation. Toy and clothing donations were also collected and sent to refugees via these foundations. Many thanks to all who donated, as well as organizers: **Teresa Guillamon** (4<sup>th</sup> year PhD), **Alex Stankiewicz** (5<sup>th</sup> year PhD), **Francis Zamora** (1<sup>st</sup> year Masters), and recent Masters graduate **Ala'a El-Shaar**.

Although our graduate students are busy with classes, research, and teaching, they still find time to give back to their surrounding communities. In addition to the above relief effort and Educan! Growth Mindset Mentoring mentioned elsewhere in this issue, students are involved in a variety of service activities. A full list of student volunteering efforts over the past few years was collected and includ-

ed in the department's recent self-study as part of the provost's regular review of all Boston University departments. We are proud of and inspired by their efforts, and would like to share a few activities of current students with you.

Students in our department serve both within Boston University and their local communities by volunteering with the BU Climate Action Group (*see page 5*); coordinating the Anatomical Donor Memorial Service on behalf of students in Medical and Dental Anatomy courses; serving as representatives for the BU Graduate Medical Sciences Student Organization; inciting curiosity into young minds during Brain Awareness Week at the Boston Museum of Science; serving food or teaching classes at Rosie's Place, a local women's shelter; serving as volunteer judges for the Massachusetts State High School Science and Engineering Fair; and promoting women's health and wellness by organizing community health events and the 2016 Conference of State of Asian Women's Health in MA.

**Contributing Author: Sharon O'Neill**

## Recent Departmental Publications

**This list includes only a few of the many papers that students, post-docs, and faculty in our department have published in the past year!**

Cumulative Head Impact Exposure Predicts Later-Life Depression, Apathy, Executive Dysfunction, and Cognitive Impairment in Former High School and College Football Players. **Montenigro PH**, Alosco ML, Martin B, Daneshvar DH, Mez J, Chaisson C, Nowinski CJ, Au R, McKee AC, Cantu RC, McClean MD, Stern RA, Tripodis Y. *J. Neurotrauma* 2016.

Area-Specific Features of Pyramidal Neurons-a Comparative Study in Mouse and Rhesus Monkey. Gilman JP, **Medalla M**, **Luebke JI**. *Cerebral Cortex* 2016.

Absence of Prenatal Forebrain Defects in the Dp(16)1Yey/+ Mouse Model of Down Syndrome. **Goodliffe JW**, **Olmos-Serrano JL**, Aziz NM, Pennings JL, Guedj F, Bianchi DW, **Haydar TF**. *J. Neurosci* 2016.

White Matter Neurons in Young Adult and Aged Rhesus Monkey. **Mortazavi F**, Wang X, **Rosene DL**, Rockland KS. *Frontiers Neuroanat* 2016.

Down Syndrome Developmental Brain Transcriptome Reveals Defective Oligodendrocyte Differentiation and Myelination. **Olmos-Serrano JL**, Kang HJ, **Tyler WA**, Silbereis JC, Cheng F, Zhu Y, Pletikos M, Jankovic-Rapan L, Cramer NP, Galdzicki Z, **Goodliffe J**, **Peters A**, Sethares C, Delalle I, Golden JA, **Haydar TF**, Sestan N. *Neuron* 2016.

Longitudinal measures of cognition in the Ts65Dn mouse: Refining windows and defining modalities for therapeutic intervention in Down syndrome. **Olmos-Serrano JL**, **Tyler WA**, Cabral HJ, **Haydar TF**. *Exp. Neurol.* 2016.

Depletion of microglia and inhibition of exosome synthesis halt tau propagation. Asai H, Ikezu S, Tsunoda S, **Medalla M**, **Luebke J**, **Haydar T**, Wolozin B, Butovsky O, Kügler S, Ikezu T. *Nature Neurosci* 2015.

## Faculty Highlight: Maryann MacNeil, Marathon Woman



**Maryann MacNeil, MA**, joined the Anatomy and Neurobiology department as an Instructor in 2006. She is an integral part of not only our department, but also the Medical and Dental schools—she currently teaches Anatomical Sciences I and II, Cellular Organization of Tissues, and many other courses. In addition, she is pursuing a doctorate in Education. Her endurance doesn't stop in the classroom, however—she spends her remaining time training for the Boston Marathon!

Maryann is running in her eighth (and final) Boston Marathon on Monday, April 18, 2016. We interviewed her to learn more about her training and experience.

### What is your training regime?

*I train with a very supportive, fun group that I call my "running family". We began training for the marathon mid-December with a program of running five days a week. In that week we include a hill run, tempo run, long run and track (speed) workout. The mileage increases gradually until our final long run (22 miles) three weeks before the marathon. That starts the "taper period" and we decrease weekly mileage and increase eating, especially carbohydrates!*

### How does being an anatomist affect your training?

*The training is tough on the body and marathoners are at risk for injury. My anatomy background allows me to imme-*

*diate know exactly what muscle, tendon or ligament is bothering me—then I can take the right action to treat the problem. My background in physical therapy also helps. I have been very lucky this year, as I have caught every potential injury in the early stages and I am pain-free right now.*

### What is your most memorable experience with the Boston Marathon?

*All my experiences with Boston have been amazing and memorable. That is based on the amazing, supportive crowd. The positive energy surrounding this marathon is something that keeps the runner going towards the finish line—and then back to the start line the next year. I have memories of my toughest moments on the course, and how the words of encouragement from total strangers pushed me forward. I've even had strangers jump in and run with me a few steps to give me the strength and inspiration I need to finish. Boston Strong.*

### What motivates you to run?

*A very simple yet powerful mantra—I read it a while ago and have found the saying to apply to situations beyond the marathon: "You are going to want to give up.... Don't." It reminds me that when we challenge ourselves to set difficult goals there will be times when we will want to give up. It's a normal part of process. It reminds me no matter how tired, frustrated or discouraged I can get on the road to finish line, I can't give up.*

Good luck, Maryann! Wishing you all the best for a successful run this Monday!

## BUMC Climate Action Group "Generates" Interest at Campus Sustainability Fair!

The BUMC Climate Action Group, co-founded by **Jennie Luebke, PhD** (pictured, right, as mascot "Jennie the Bear") hosted a fun and engaging exhibit at the BUMC Sustainability Fair on Thursday, April 14, 2016. Passersby could hop on their clean-energy-generating bike to boost their endorphins and their cell phone battery life!

The Climate Action Group is a new student and faculty group engaged in climate change education, the fossil fuel divestment campaign, and campus sustainability. Earlier this school year, the group led an effort to educate the campus community about the new compost and recycling bins in the medical school cafeteria.

Learn more at their Facebook page: [www.facebook.com/BUMCClimateAction](http://www.facebook.com/BUMCClimateAction)

