Message from the Chair

Dear Friends and Alumni,

It is finally spring! Yes!!!

This is always an exciting time of the year, with preparations for commencement, plans for a happy summer of research and outdoor activities, nice weather peeking through, the campus blossoming and everyone feeling in a better mood. This year it feels even more hopeful than usual. Thanks to a very effective vaccine campaign the campus can finally see the light at the end of a long tunnel.

The winter and early spring have been very busy around the Department. We safely continued to repopulate our laboratories and offices and our research activities picked up at a good pace.

Students, postdocs, research staff and faculty in the Department made substantial progress in many research areas. During the past months, we published articles in impactful journals (such as Cell Reports, Current Biology, eLife, Neuron, and PLOS Computational Biology, just to name a few) on topics such as dopaminergic modulation of circuits in the striatum, taste processing and learning, decision making, computational modeling of social learning and aging, and transposable genetic elements and neurodegeneration. The diversity of these research topics reflects the breadth of our scientific interests that go from genetics to neural circuits and behavior all the way to theoretical neuroscience. Neuroscience is by nature an interdisciplinary field, and the variety of approaches and perspectives in the Department ensures the circulation of exciting ideas and collaborations.

In January, our latest recruit, Dr. Prerana Shrestha, opened her lab in the newly renovated space on the 5th floor of the Life Sciences building. It is a sparkling new lab, filling up with new members, new equipment and a lot of excitement. From January to March, we engaged in a very active graduate recruitment season, which resulted in an outstanding class of PhD and MS candidates arriving at the end of the summer. In this time filled with gloom, it is truly wonderful to see new beginnings!

In March, we also celebrated Brain Awareness Week. We gave lectures at SUNY Old Westbury, organized brain related virtual activities at local libraries (a big thanks to Drs. Jennifer Blackwell, Lindsey Czarnecki, and Hillary Schiff from our postdocs group), posted work from Art + the Brain (a wonderful course held by Dr. Patricia Maurides in the Department of Art), exhibited work kindly donated to the Department by the German photographer Volker Schultz (thank you!) and finally disseminated brain images in the community … finders keepers.

In April, the PhD students of the Program in Neuroscience organized the first (and hopefully last) virtual Symposium in Neuroscience, a day celebrating our students’ research. It was a success, despite the Zoom format we all felt the excitement of a live event. Phenomenal talks from our students, and a stellar keynote speaker (Dr. Michael Hasselmo from Boston University). Next time it will be in person!

After a one year hiatus, the Thomas Hartman Center for Parkinson’s research will again hold the competition for pilot grants to stimulate research in this field. I would like to thank all of you who support the Center through your generous gifts, fundraising and advocacy.

Throughout the semester we continued to host our virtual seminars. We are now planning for next year’s seminar season and we are optimistic that we may restart to have in person visits. We are also planning for September’s Departmental retreat. If possible, we will gather in person at the beautiful Old Field Club for a day of presentations, posters and discussions.

In conclusion, we made the best of the situation, and we kept carrying on with enthusiasm, our passion for research, education and outreach.

I hope you will enjoy reading our newsletter, for me it is always a pleasure to connect with friends and alumni. Please feel free to reach out to me!

Alfredo Fontanini
Professor and Chair
Department of Neurobiology and Behavior
Congratulations!

- Congratulations to Dr. Liang Chen, Postdoc in the Xiong Lab, who has been offered an Assistant Professor position in the School of Basic Medical Sciences at Fudan University in Shanghai, China.
- Congratulations to Postdoc Olivia Swanson (Maffei Lab) who got 2nd place in the SBU Postdoc Spotlight event in February with her 5-minute talk “The Science of Feeling Full.” More info on the event here.
- Congratulations to PhD Student Priscilla Yevoo (Maffei Lab) as one of 22 inaugural recipients of the new SUNY Graduate Research Empowering and Accelerating Talent Awards. Recipient bios and more on the award here.
- Congratulations to Dr. Maya Shelly (PI) on receiving both a Stony Brook University OVPR Seed Grant award and SUNY Seed Grant award.

Special Events

Our 19th Annual Symposium in Neuroscience, organized by PhD students, took place on April 20, 2021, 9am-1pm, with keynote speaker Dr. Michael Hasselmo, Boston University. The event showcased our students research projects in a series of virtual presentations.
Brain Awareness Week: March 15-21, 2021

Our Department celebrated global Brain Awareness Week by giving multiple neuroscience lectures in the community and sharing brain art and images of the brain around the Stony Brook area and on Twitter.

Through an event called “Free Brains,” original images of neurons and brains taken from scientists in the Department were printed, framed and given to our community. Each image had a title and short description, and was left in a prominent place in the Stony Brook community. We then tweeted hints of where to find the framed images for anyone wanting to go search for them!
I received my BS in physics at Boston University before deciding to switch over to, what seemed to me at the time, a much younger and more exciting field in neuroscience. After a stint as a research technician at Harvard Medical School and with several post-baccalaureate courses in biology and neuroscience under my belt, I joined the PhD program in Neuroscience at the Department of Neurobiology and Behavior in 2008. Following a few rotations, I joined the Fontanini Lab, becoming the first graduate student in the freshly minted lab area of the northeast corner of the 5th floor of the Life Sciences Building, the 'North End' (a reference to Boston where several of us in the lab, including Arianna and Alfredo, had recently lived).

The next five years of my life were primarily spent in that corner of the building, collecting data and having fun with the vibrant community of the Department, which for me, primarily centered around the people of the Fontanini and Maffei Labs. Coffee, music, jokes and cart riding were just a few of the activities that, in addition to the science, made long lab hours seem to go by too quickly. Under Alfredo’s mentorship, I continued a line of research that Alfredo had begun as a post-doc at Brandeis University. The broader question we sought to address is how neural processes underlying sensory perception are shaped and influenced by prior experience. To do this, we studied how single neurons in the gustatory (taste) system respond under conditions in which animals can predict, or not, upcoming gustatory stimuli. It quickly became apparent to me how useful the taste system is as a model system for understanding predictive processes in the brain – seeking and consuming food based on the chemo-sensory qualities of foods (the smell, flavor, texture and taste of a food) is a fundamental process within biology, generally.

After an extremely fulfilling and productive time at Stony Brook in the Fontanini Lab as a graduate student, I continued to pursue this line of research in Geoffrey Schoenbaum’s lab at the National Institute of Health. My goal as a post-doc has been to develop stronger methods to isolate various types of information about predicted stimuli. For example, to know if predictive coding in the brain contains information about the specific type and amount of food potentially available when searching for food, the experimenter must first be sure that the experimental subject ‘knows’ about this information. I recently developed behavioral tasks in rats to address these issues. One behavior that I have worked on extensively is a task in which rats must integrate information about the potential amount of food with the type of food in order to make a rational choice. More recently, this has led me to explore how animals keep track of an ‘appetitive space’ of various foods, and how such a cognitive space can be used to make decisions about which foods to pursue.

This summer I will be starting as an Assistant Professor at Concordia University in Montreal, where I will continue to study predictive processes in associative learning and decision making. I am currently recruiting people to join the lab.

Selected Publications:
Congratulations to our Fall 2020 Graduates!

Peter Hsu: MS, Tim Duong Lab  
Thesis: Automatic Segmentation of Multiple Sclerosis Lesions in the Spinal Cord

Aishwarya Patwardhan: MS, Mary Kritzer Lab  
Thesis: Estrogen Sensitive Sparing of Object-in-Place Performance in 6-hydroxydopamine-lesioned Female, Male and Gonadectomized Rats

Thank you for your support!

Last October, our Department participated in the University’s second Giving Day, which had been rescheduled from its original April 2020 date due to the pandemic. We are grateful for the support of so many of you!

Thanks to your generosity, we have been able to support many of our undergraduate and graduate students in their research efforts. If you are interested in learning more about how you can support our students and Departmental initiatives, please feel free to contact Hodan Hassan, Assistant Dean for Advancement, at 631.632.4055.

New Website

Check out our new website at stonybrook.edu/neurobiology!

Have a Story to Share?

We’d love to hear from you about your experience in the Department and what you’ve been up to more recently. Contact Elsie Persaud with your updates for a chance to be featured on Twitter or in a future newsletter.