Samia Pratt

Samia.pratt@jax.org
Samia.pratt@tufts.edu

EDUCATION:

Tufts University, Boston, MA, Bar Harbor, ME August 2020 - Present
Graduate School of Biomedical Sciences, **Department of Neuroscience**
GPA: 3.82
First Year Predoctoral Associate, JAX Tract

- **Burgess Lab Predoctoral Associate**, Jackson Laboratory May 2020 – Present
  - In the Burgess Lab under Dr. Robert Burgess, studying the effects of mutations in the C12ORF65 gene Mitochondrial Translation Release Factor Rescue-1 (MTRFR-1) and its implications on mitochondrial health and function, as well as peripheral neurotpathies like Charcot-Marie-Tooth disease
- Rotated in Dr. Greg Cox's Lab focusing on models of ALS and SMARD1. (Aug 2020 – Nov 2020)
- Rotated in Dr. Robert Burgess' Lab focusing on transgenic models of Charcot-Marie Tooth Disease. (Nov 2020 – March 2020)
- Rotated in Dr. Gareth Howell's Lab focusing on Blood Brain Barrier Health and its implications in Dementias (March 2020 – May 2020)

University of New England, Biddeford, ME Completed May 2020
Bachelor of Science in ***Neuroscience***
Minor: ***Marine Biology***
GPA: 3.65 Dean's List all semesters
Honors/Awards: Presidential Honor Scholarship; State of Rhode Island Top Ten High School Student Award (June 2016)

University of New England, Tangier Morocco, Study Abroad Jan.—May 2018

- Participated in semester-long cultural immersion program learning about Moroccan culture and history
- Volunteered at The American School of Tangier helping teach English, reading and math to 2nd grade students. Developed skills with communicating despite a language barrier and patience.
- Volunteered weekly at La Creche Orphanage, working with small children, helping with feeding times and other basic care necessities

RELEVANT COURSEWORK:

Marine Biology	Cellular and Molecular Biology	Calculus
Organic Chemistry	Genetics	Statistics for Life Sciences
Physics	Cognitive Neuroscience	Invertebrate Anatomy
Intro to Neurobiology	General Chemistry	Nociception
Ecology/Evolutionary Biology	Psychology	Biopsychology of Resilience
Biochemistry	The Neurobiology of Mental Illness	Developmental Neurobiology
Graduate Biochemistry	Cellular and Molecular Tutorials	Membranes and Trafficking
Neuroscience Lab Techniques	Neural Systems and Disease Mechanisms	Applied Ethics for Scientists
Biochemistry Foundations in Neuroscience		

PREVIOUS RESEARCH EXPERIENCE

Student Research Assistant, Ganter Institute Research Lab, University of New England, Biddeford, ME
August 2018 – May 2020 (20 hours a week)

- Work with Dr. Geoffrey Ganter and Dr. Ben Harrison to compare how larval fruit flies (*Drosophila melanogaster*) genetically react to UV injury, analyzing the up and down regulation of genes from a complex data set, using bioinformatic tools.
  - Developed skills in bioinformatics, comparing biological data across species and analyzing gene expression similarities and differences within species, pertaining specifically to the mitochondria. The data analyzed was exploring larval gene regulation after exposure to UV injury. Also developed skills with higher level Excel, adapting and learning new skills quickly, adapting and interpreting complex data

sets. GeneOntology and Panther pathways were used to isolate genes of interest, are partially complete pathway analysis. Pathway analysis was confirmed with Kegg and String. The determined pathways were then further analyzed via a comprehensive literature investigation.

- Work with Dr. Geoffrey Ganter and a novel method of assessing nociceptive sensitization in adult *Drosophila*.
    - Developed skills with handling laboratory animals, as well as working with UV radiation equipment and regulating injury, thermal probing and regulating injury, collaborative work with peers, collaborative and independent presentations on personal scientific work and related peer-reviewed journals.
    - Also helped to develop a novel method for immobilizing adult fruit flies, assessing thermonociception. Worked with and under Dr. Ganter to develop a method of delivering UV injury to adult flies as well as a new assay to assess chronic pain and thermal sensitization in adult fruit flies.

Student Research Assistant, Hof Research Laboratory, Icahn School of Medicine at Mount Sinai, New York, NY
July 2018 – May 2020 (Work remotely via computer around 5 hours per week)

- Work with Dr. Patrick Hof, of the Department of Neuroscience, at the Icahn School of Medicine at Mount Sinai and his Laboratory Supervisor Bridget Wicinski with a collection of over 6,000 tissue slides of brain sections of varying Cetacean (Dolphin, Whale and Porpoise) species. Analyzed and evaluated the condition of the slides that were originally made in the late 1960's, determine the future of the collection and if the tissue samples are still viable and able to be used in current research.
    - Developed skills for analyzing tissue samples, diagnosing conditions, as well as organizing and interpreting the future use of a scientific collection for further research
    - Also developed skills in handling tissue slides as well as preserved whole brain tissue. Was also able to observe the collection of different brain specimen, the storage and preservation process as well as the dissection and distribution of particular structures of brain for further research (Autism Brain Net).

Undergraduate Student Summer Internship, Lagier-Tourenne Lab, Massachusetts General Hospital & Harvard Medical School, Boston MA June 2019-Aug 2019 (40 hours a week, about 440 hours total)

- Worked under Drs. Clotilde Lagier-Tourenne, Fernande Freyermuth and Yi Han as a Summer Research Assistant at the MassGeneral Institute for Neurodegenerative Disease (MIND) in Charleston Massachusetts. Worked on a project analyzing the mislocalization and levels of the protein Stathmin in wildtype and mutant cells expressing a TDP43-linked mutation. Also worked on another project monitoring the presence of Exon2A (linked to Stathmin) in post-mortem patient cerebellum, cortical and spinal cord tissue samples.
    - Developed many molecular biology lab skills including becoming proficient in PCR using both RNA and DNA, qPCR, RT-PCR, and cDNA Amplification. Also developed skills in DNA and Protein extraction as well as RNA extraction with Trizol from both cells and tissue samples, Western Blotting, and general Cell Culture with fibroblasts, REN VM neurons, and SH-SY5Y cells.

RELATED NEUROSCIENCE EXPERIENCE:

Archival Research Assistant, Special Collections, University of New England, Biddeford, ME Sept. 2017- May 2020

- Developed skills in organizing, cataloguing scientific and archiving research and data in UNE Library Special Collections Department under direction of Special Collections/Archival Director.
- Analyzed, read and catalogued extensive research on cetacean brains conducted by renowned marine biology and neurology specialist Peter G. Morgane, Ph.D.
- Created organizational systems to label and catalogue more than two thousand glass slides on Dr. Morgane's research which correspond to the slide collection housed at Mount Sinai in New York under the supervision of Dr. Patrick Hof.

Assistant Curator of *The Dolphin Brain the Peter J. Morgane Research Collection on the Cetacean Brain 1962-2004,*
University of New England, Biddeford, ME. Sept 2018- May 2020

- Developed an artistic and scientific collection comprised of the research of Dr. Peter J. Morgane and his colleagues on the cetacean brain, on display at the University of New England from July 8th to September 26th of 2019.
- The collection is comprised of scientific diagrams of various cetacean brains structures and anatomy.

- Analyzed the collection, catalogued the collection and comprised a comprehensive exhibit of cetacean neuroscience
- Chose artistic pieces for the collection as well as wrote text panels explaining the complex structures and functions of the cetacean brain

Summer Undergraduate Research Experience (SURE) Grant, University of New England, Biddeford, ME May-Aug. 2018

- Received the SURE Grant from the College of Arts and Sciences from the University of New England for the summer of 2018.
- Spent 12 weeks over the summer researching Dr. Peter J Morgane's neuroanatomy research on cetaceans
- Organized, Analyzed, and Catalogued Dr. Morgane's research. Was able to continue work on Dr. Morgane's research collection from the Fall of 2017 and Spring of 2018.
- Created an Excel spreadsheet and made research available to other scientists in the growing field

Poster Presentations

- The Peter J Morgane Research Collection on the Cetacean Brain September 2018
  - *2018 Fall Research Symposium*, College of Arts and Sciences, University of New England
- Detection of Abnormal Stathmin-2 mRNA processing in Amyotrophic Lateral Sclerosis (ALS) Patient Samples and in Cells with TDP43 Depletion September 2019
  - *2019 Fall Research Symposium*, College of Arts and Sciences, University of New England
- Targeting FUS mis-localization to mitigate disruption of nuclear integrity in amyotrophic lateral sclerosis
  - *2019 MGH Neuroscience Day,* Mass General Hospital, Boston MA September 2019
  - *2019 Amyotrophic Lateral Sclerosis (ALS) and Related Motor Neuron Diseases Gordon Research Conference,* Mount Snow, West Dover VT July 21-26 2019

Publications

- Spaulding EL, Hines TJ, Bais P, Tadenev ALD, Schneider R, Jewett D, Pattavina B, **Pratt SL**, Morelli KH, Stum MG, Hill DP, Gobet C, Pipis M, Reilly MM, Jennings MJ, Horvath R, Bai Y, Shy ME, Alvarez-Castelao B, Schuman EM, Bogdanik LP, Storkebaum E, Burgess RW. The integrated stress response contributes to tRNA synthetase-associated peripheral neuropathy. **Science. 2021** Sep 3;373(6559):1156-1161. doi: 10.1126/science.abb3414. Epub 2021 Sep 1. PMID: 34516839.

LABORATORY & TECHNICAL SKILLS

- Able to work with higher level Excel (in regard to bioinformatic information and statistical analysis), analyze data and extract important information as well as to interpret information and complete research experiments, both independently and collaboratively. Able to complete bioinformatic analysis as well as hands on experiments and handling of scientific equipment and coming up with creative and innovative solutions to possible issues faced during experimental process. Worked with reviewing grant proposals before submitted for consideration as well as reviewing posters before presented. Also, able to present scientific data to accomplished scientists as well as peers and those outside of the scientific field.

Laboratory/Technical/Computer Skills:

Advanced Microsoft Excel	MATLAB	LoggerPro	IGV
BioMart	SRA NCBI	Panther	GeneOntology
R: Statistical Computing	KEGG Pathway	String: Functional Protein Association Network	
Western Blot	Cell Culture	PCR (RT and q)	
IF in-suspension	DNA Purification	DNA Extraction from Gel	
CRISPR-Cas9 Screens	RNA, Protein and DNA Extraction from cells and Brain Tissue		

LEADERSHIP & VOLUNTEER EXPERIENCE:

Advocate and Volunteer, National ALS (Amyotrophic Lateral Sclerosis) Association, Washington D.C. May 2014-Present

- Annually attend national conventions for the ALS Association and meet with congressional legislators to advocate for patient's rights, clinical trials, drug approvals, and funding for the association.
- Attended PHARMA meetings and other medical and research meetings related to patient rights, clinical and drug trials.

RI Chapter of the ALS Association, Rhode Island May 2010-Present

- Independently raised $47,000 for the RI Chapter of the ALS Association by chairing the Scott Carlson Memorial Road Race (2015)
    - Developed skills in negotiating, communicating, leadership and team leading as well as managing, delegating, and organizing large groups of other volunteers and participants and fundraising.
- Volunteered around other community fundraisers and races.
    - Developed skills in listening, carrying out actions independently and collaboratively as well as working with patients and other volunteers.

The American School of Tangier, Tangier, Morocco January 2018- May 2018

- Worked with a second-grade class providing reading comprehension and writing help.

La Creche Orphanage, Tangier, Morocco January 2018- May 2018

- Worked with the orphaned children, helping with feeding, cleaning, changing, caring for and entertaining them

CLUBS & ORGANIZATIONS:

- **Volunteer in the UNE Kelp Lab under Adam St. Gelais, M.S.** Aug 2016 – May 2017
    - Organized lab, Assisted with Research and organization

- **Secretary of UNE Student Philanthropy Association** January 2017 – May 2020
    - Volunteer around community, such as Partners for World Health, local children's hospital and retirement homes.
    - Developed organizational, communication and leadership skills through the position as well as skills contacting volunteering opportunities and creating and sticking to a budget.

- **Member of the College Community Mentoring Program** Sept 2018 – May 2020
    - Completed training with the mentoring program and now work to mentor a young student and provide a role model or 'big sister' figure and stability.
    - Help and work with mentee in school work (tutoring) as well as social and home-life aspects

- **Member of the America Counts America Reads Tutoring Program** Sept 2019 – May 2020
    - Volunteer in a first-grade classroom at the Fairfield Elementary School in Saco, Maine.
    - Volunteer in a one-on-one setting as well as with the entire class helping with reading, writing, literacy and math subjects