

Sameer Aryal

CONTACT INFORMATION	Center for Neural Science New York University 4 Washington Place, Room 722 New York, NY 10003	<i>Phone:</i> (413) 347-9726 <i>E-mail:</i> sameer.aryal@gmail.com <i>LinkedIn:</i> https://www.linkedin.com/in/sameer-aryal-nyu/ <i>Website:</i> www.sameeraryal.com
RESEARCH INTERESTS	Genome-scale neurogenetics; Molecular mechanisms of memory; Molecular basis of neuropsychiatric disorders.	
EDUCATION	New York University , New York, NY Ph.D. Candidate, Basic Medical Science, August 2013 - May 2020 (expected) <ul style="list-style-type: none">• Dissertation: “Genome-wide examination of <i>de novo</i> protein synthesis in fragile X syndrome : mechanisms and specificity”• Advisor: Eric Klann, Ph.D.• Cumulative GPA: 3.97/4.0 Williams College , Williamstown, MA B.A., Biology (honors) and Economics, June 2012 <ul style="list-style-type: none">• Dissertation: “The role of DopR neuronal circuits in regulating endogenous arousal in <i>D. melanogaster</i>”• Advisor: Tim Lebestky, Ph.D.• Cumulative GPA: 3.57/4.0; Biology: 3.63; Economics: 3.67	
RESEARCH EXPERIENCE	New York University Center for Neural Science , New York, NY <i>Graduate Research Assistant</i> June 2014 - present Developed, implemented, and analyzed the results of various molecular and genome-wide assays, including ribosome profiling (Ribo-Seq) and translating ribosome affinity purification (Trap-Seq), to quantitatively determine the mechanistic basis of elevated mRNA translation in the brain of a mouse model of fragile X syndrome. Also developed a novel assay to measure the rate of ribosome translocation in primary neurons. A*STAR-Duke-NUS Neuroscience Research Partnership , Singapore <i>Research Assistant</i> Aug 2012 - May 2013 Wrote MATLAB scripts to analyze <i>D. melanogaster</i> motion-tracking datasets. Also authored a MATLAB library to visualize biological data via ‘estimation plots,’ which emphasize effect sizes rather than p-values. Won the Singapore International Pre-Graduate Award (SIPGA) to carry out this research in the Adam Claridge-Chang laboratory. Williams College , MA <i>Honors Student</i> Sept 2011 - May 2012 Investigated which neuronal circuits regulate arousal, and how they are connected, in the <i>D. melanogaster</i> brain. Conditionally activated specific circuits in the fly brain by expressing the temperature-gated Transient Receptor Potential A1 (trpA1) channels in different subsets of neurons and then monitored the flies’ behavioral phenotypes through sleep and locomotor assays.	
PUBLICATIONS	1. Ho, J., Tumkaya, T., Aryal, S. , Choi, H., Claridge-Chang, A. Moving beyond P values: data analysis with estimation graphics. <i>Nature Methods</i> . 2019.	

2. Bowling, H., Bhattacharya, A., Zhang, G., [et al., including **Aryal, S.**], Klann, E. Altered steady state and activity-dependent de novo protein expression in fragile X syndrome. *Nature Communications*. 2019.
3. **Aryal, S.**, Klann, E. Turning up translation in fragile X syndrome. *Science*. 2018.
4. Mohammad, F., **Aryal, S.**, Ho, J., Stewart, J.C., Norman, N.A., Tan, T.L., Eisaka, A., Claridge-Chang, A. Ancient anxiety pathways influence Drosophila defence behaviors. *Current Biology*. 2016.

PAPERS IN PREPARATION

1. **Aryal, S.**, Longo, F., Klann, E. P70-S6 Kinase 1-dependent alterations in cortical messenger RNA translation in fragile X syndrome. Under review in *Science Translational Medicine*.
2. Longo F., **Aryal S.**, Anastasiades P., Baimel C., Maltese M., Albanese F., Zhu J., Santini E., Tritsch N., Carter A., Klann E. Selective disruption of cortico-striatal circuitry results in repetitive and perseverative behaviors in fragile X syndrome model mice.
3. Longo F., Mancini M., Ibraheem P.L., **Aryal S.**, Mesini C., Patel J., Penhos E., Rahman N., Donohue M., Santini E., Rice M.E., Klann E. Genetic reduction of PERK-eIF2a signaling in dopaminergic neurons drives cognitive and age-dependent motor dysfunction. Under review in *Nature Communications*.

HONORS AND AWARDS

- Awarded a *registration and travel scholarship* to attend the 2017 Summer Institute in Statistics for Big Data at University of Washington, Seattle. *April 2017*
- Inducted into *Sigma Xi* Scientific Research Society. *June 2012*
- Awarded *Robert L Gaudino Fellowship* at Williams College, MA to conduct independent Economics research on healthcare access in rural Nepal. *January 2010*
- Awarded *Brilliance in Nepal* by the British Council in Kathmandu for securing the highest marks in University of Cambridge Advanced-Level Biology examinations in entire Nepal in the May/June 2007 session. *April 2008*
- Graduated *valedictorian* from Budhanilkantha School, Kathmandu, Nepal. *May 2007*

CONFERENCE PRESENTATIONS

- *Invited speaker*, Nanosymposium on “Neurodevelopmental Disorders - Mechanisms.” Society for Neuroscience Annual Meeting. 2017.
- *Invited speaker*, Annual Molecular Pharmacology Retreat. Sackler Institute at NYU School of Medicine. 2017.
- Presented posters describing my graduate research at:
 - Society for Neuroscience Annual Meeting. 2015, 2016, and 2018.
 - Molecular and Cellular Cognition Society Annual Meeting. 2015, 2016, and 2018.
 - Brains and Behavior: Order and Disorder in the Nervous System. Cold Spring Harbor Laboratories. 2018.
 - RNA Therapeutics: From Base Pairs to Bedsides Symposium. 2018.

ADDITIONAL
QUALIFICATIONS

- *Intern* at the Office of Industrial Liaison, NYU Langone Health. Created a business plan for an NYU-developed technology by researching the technology, identifying its competitive advantages, analyzing the market for the technology, and describing the business model for the company. *July - Nov 2017*
- *Graduate Teaching Assistant* to Dr. Angus Wilson in the seminar “Introduction to Research” at the Sackler Institute at NYU School of Medicine. *Fall 2017*
- *Peer tutor* for beginner and intermediate Macroeconomics and Econometrics at Williams College, MA. *2010-2012*

COMPUTER SKILLS

- Statistical Packages: R, MATLAB.
- Languages: Python, Shell scripting (Bash).
- Applications: L^AT_EX; common database, spreadsheet, and presentation software.
- Environments: High Performance Computing (SGE/Slurm), Unix/Linux, Windows.