KATRINA P. NGUYEN

3747 Beechwood Blvd, Pittsburgh, PA 15217
katrina.p.nguyen@gmail.com || (703) 463-8288

EDUCATION

Carnegie Mellon University **Pittsburgh, PA**
Doctor of Philosophy in Biomedical Engineering
Center for the Neural Basis of Cognition Graduate Training Program
Advisors: Aryn Gittis, Steven Chase

George Mason University **Fairfax, VA**
Bachelor of Science in Bioengineering May 2014

RESEARCH EXPERIENCE

Department of Biomedical Engineering **Pittsburgh, PA**
Carnegie Mellon University August 2016—Present
Graduate Student – Aryn Gittis, PhD and Steven Chase, PhD
- Study neural circuitry of the basal ganglia in the regulation of motor control, learning, and skill acquisition in novel locomotor task designed for rodents

Eating and Addiction Section **Bethesda, MD**
National Institute of Diabetes and Digestive and Kidney Diseases July 2014—August 2016
Postbaccalaureate IRTA Fellow – Alexxai Kravitz, PhD
- Studied basal ganglia circuit behavior and changes in obesity and addiction disease states using behavioral testing, optogenetics, and optical measurements
- Constructed a low-cost, home cage compatible automatic pellet dispensing device to obtain high temporal resolution data for feeding behavior and patterns

Department of Bioengineering **Fairfax, VA**
George Mason University April 2013—July 2014
Undergraduate Research Scholar – Wilsaan Joiner, PhD
- Designed and performed psychophysical studies on human subjects to study the retention of motor adaptation with different methods of applied perturbing force

Marion duPont Scott Equine Medical Center **Leesburg, VA**
Virginia-Maryland College of Veterinary Medicine August 2013—July 2014
Senior Capstone Project – Jennifer Barrett, DVM, PhD
- Worked with a team to construct an electrostatic spinning device to produce scaffolds for stem cell studies

Sheikh Zayed Institute **Washington, D.C.**
Children's National Medical Center August 2013—May 2014
Research Volunteer – Kevin Cleary, PhD
- Worked with a team of medical doctors and researchers in the Sheikh Zayed Institute for Pediatric Surgical Innovation to construct a low-cost fetal EKG monitoring system
- Recorded heart signals from ultrasound device and performed offline analysis to calculate heartrate

Neuroscience Research Program **Fairfax, VA**
Inova Neuroscience Institute January 2014—May 2014
Research Intern – James Leiphart, MD
- Modified equipment such as amplifiers and data acquisition systems to record spinal electrical activity from patients suffering from chronic neuropathic pain

Sheikh Zayed Institute **Washington, D.C.**
Children's National Medical Center June 2013—August 2013
Student Innovator Intern – Janice LePlatte, MS, BSN, RN-BC
- Developed device to enhance seizure simulations on a manikin to improve quality of education
- Assisted the Simulation Center with setting up and running daily scenarios to educate staff, evaluate processes, and identify gaps with the aim to promote patient safety and improve care

PROFESSIONAL EXPERIENCE

Department of Biomedical Engineering — **Pittsburgh, PA**
Carnegie Mellon University
Teaching Assistant – Introduction to Neuroscience for Engineers — January 2017—May 2017
Teaching Assistant – Physiology — January 2018—May 2018
Teaching Assistant – Neural Data Analysis — September 2018—December 2018

Department of Bioengineering — **Fairfax, VA**
George Mason University
Teaching Assistant – Physiology for Engineers — August 2013—December 2013

Schischek Incorporated — **Chantilly, VA**
Intern/Assistant — June 2012—December 2013

Kumon Math and Reading Center — **Chantilly, VA**
Tutor/Teaching Assistant — July 2007—December 2012

VOLUNTEER AND SERVICE EXPERIENCE

Center for the Neural Basis of Cognition — **Pittsburgh, PA**
Social Committee — May 2018—December 2021

Program in Neural Computation/Systems Neuroscience — **Pittsburgh, PA**
Orientation/Bootcamp Teaching Assistant — August 2021

NINDS Training and Diversity Discussion Panel — **Bethesda, MD**
Panel Member — August 2020

Covestro Pittsburgh Regional Science and Engineering Fair — **Pittsburgh, PA**
Category Judge, Medicine/Health/Microbiology — April 2019

Biological Sciences Outreach Program — **Pittsburgh, PA**
Teaching Assistant — April 2019

Intel International Science and Engineering Fair — **Pittsburgh, PA**
Grand Award Judge, Animal Sciences section — May 2018

The iNFORMER Fellows Newsletter — **Bethesda, MD**
Co-Editor, Online Editor — June 2015—August 2016

NIDDK Fellows Advisory Board — **Bethesda, MD**
Postbaccalaureate Delegate — June 2015—August 2016

Adventures in Science Program — **Bethesda, MD**
Session Leader — October 2015—June 2016

NIDDK DSRTP for Undergraduate Students — **Bethesda, MD**
Mentor — June 2015—August 2015

PRESENTATIONS

Invited Talks

1. **Nguyen KP**. How I automated my job feeding mice. *Hackaday Superconference* (Pasadena, CA). 2-4 November 2018.

2. **Mini-symposium: Open-source hardware for neuroscience research**
   Nguyen KP. Feeding Experimentation Device (FED): an open-source system for measuring food intake in

rodents. *Society for Neuroscience Annual Meeting* (Washington, D.C.). 13 November 2017.

Conference Presentations

3. **Nguyen KP*,** Isett BR*, Schwenk JC, Gittis AH. **Locomotor suppression via indirect pathway spiny projection neuron stimulation is not mediated through the globus pallidus externus.** *Basal Ganglia Gordon Research Conference* (Ventura, CA), 20-25 March 2022.

4. **Nguyen KP**, Sharma A, Gittis AH*, Chase SM*. **Mice learn to modulate intra- and inter-limb paw kinematics with training on a novel locomotor behavioral paradigm**. *Society for Neuroscience Annual Meeting* (San Diego, CA), 3-7 November 2018.

5. **Nguyen KP**, Licholai JA, Kravitz AV. **Why do mice over-eat palatable diets? A comparison of hedonic and homeostatic mechanisms**. *Society for Neuroscience Annual Meeting* (San Diego, CA), 12-16 November 2016.

6. **Nguyen KP***, Licholia JA*, Kravitz AV. **Wireless Feeding Experimentation Device (FED) to monitor home cage feeding behavior in rodents.** *NIH Postbac Poster Day* (Bethesda, MD), 20 April 2016.

7. **Nguyen KP**, McKenna EL, Bray LC, Colucci K, Alhussein L, Hosseini EA, Joiner WM. **The training duration influences the magnitude of motor adaptation retention, but not the magnitude of savings following a 24-hour break.** *Society for Neuroscience Annual Meeting* (Chicago, IL), 17-21 October 2015.

8. **Nguyen KP**, Kravitz AV. **Functional dissociations between striatal subregions: Activation of direct pathway neurons increases motor output in the dorsomedial, but not ventral, striatum.** *NIH Research Festival* (Bethesda, MD), 16-18 September 2015.

9. **Nguyen KP**, Kravitz AV. **Engineering a system to monitor home cage feeding behavior in rodents.** *Society for the Study of Ingestive Behavior* (Denver, CO), 7 July 2015.

10. **Nguyen KP**, Hosseini EA, Joiner WM. **The decay of motor adaptation to novel movement dynamics reveals hysteresis in motor primitive gain-space**. *Society for Neuroscience Annual Meeting* (Washington, DC), 15-19 November 2014.

11. **Nguyen KP**, Hosseini EA, Joiner WM. **The decay of task-relevant and task-irrelevant components of motor adaptation to novel movement dynamics**. *OSCAR Celebration of Student Scholarship* (Fairfax, VA), 5 May 2014.

PUBLICATIONS

1. **Nguyen KP*,** Isett BR*, Schwenk JC, Gittis AH. (*in prep*) Locomotor suppression via indirect pathway spiny projection neuron stimulation is not mediated through the globus pallidus externus**.**

2. **Nguyen KP**, Sharma A, Gil-Silva M, Gittis AH*, Chase SM*. (2021) Distinct kinematic adjustments over multiple timescales accompany locomotor skill development in mice. *Neuroscience*.

3. Matikainen-Ankney BA, Earnest T, Ali M, Casey E, Wang JG, Sutton AK, Legaria AA, Barclay KM, Murdaugh LB, Norris MR, Chang YH, **Nguyen KP**, Lin E, Reichenbach A, Clarke RE, Stark R, Conway SM, Carvalho F, Al-Hasani R, McCall JG, Creed MC, Cazares V, Buczynski MW, Krashes MJ, Andrews ZB, Kravitz AV. (2021) An open-source device for measuring food intake and operant behavior in rodent home-cages. *eLife*. 10, e66173.

4. Alhussein L, Hosseini EA, **Nguyen KP**, Smith MA, Joiner WM. (2019) Dissociating effects of error size, training duration, and amount of adaptation on the ability to retain motor memories. *J Neurophysiol.* 122(5), 2027-2042.

5. **Nguyen KP**, Zhou W, McKenna EL, Colucci-Chang K, Bray LC, Hosseini EA, Alhussein L, Rezazad M, Joiner MW. (2019) The 24-hour savings of motor adaptation to novel movement dynamics initially reflects the recall of previous performance. *J Neurphysiol.* 122(3), 933-946. doi:10.1152/jn.00569.2018

6. **Nguyen KP***, Licholai JA*, Fobbs WC, Schuster CJ, Kravitz AV. (2018) Why do mice overeat high-fat diets? How high-fat diet alters the regulation of daily caloric intake in mice. *Obesity*. 26, 1026-1033.

7. LeBlanc KH, London TD, Szczot I, Bocarsly ME, Friend DM, **Nguyen KP**, Mengesha MM, Rubinstein M, Alvarez VA, Kravitz AV (2018) Striatopallidal neurons control avoidance behavior in exploratory tasks. *Mol Psychiatry*. doi:10.1038/s41380-018-0051-3

8. Hosseini EA, **Nguyen KP**, Joiner WM. (2017) The decay of motor adaptation to novel movement dynamics reveals an asymmetry in the stability of motion state-dependent learning. *PLOS Comput Biol.* 13(5): e1005492.

9. **Nguyen KP**, Ali MA, O'Neal TJ, Szczot I, Licholai JA, Kravitz AV. (2017) Feeding Experimentation Device (FED): Construction and validation of an open-source device for measuring food intake. *J Vis Exp*. 120.

10. **Nguyen KP**, O'Neal TJ, Bolonduro OA, White E, Kravitz AV. (2016) Feeding Experimentation Device (FED): A flexible open-source device for measuring feeding behavior. *J Neurosci Meth*. 267:108-114.

11. Devarakonda K, **Nguyen KP**, Kravitz AV. (2015) ROBucket: a low cost operant chamber based on the Arduino microcontroller. *Behavior Research Methods*. 48(2): 503-509.

HONORS AND AWARDS

Journal Cover Artwork November 2021
Trends in Cognitive Sciences (Volume 25, Issue 11)

Outstanding Poster Award September 2018
Carnegie Mellon University – Forum on Biomedical Engineering

Henry L. Hillman Presidential Fellowship August 2016
Carnegie Mellon University

2016 NIDDK Innovation Award August 2016
National Institutes of Health

Outstanding Poster Award May 2016
National Institutes of Health – Postbac Poster Day

Graduate Research Fellowship Program Honorable Mention March 2016
National Science Foundation

Certificate of Appreciation March 2016
NIDDK – Office of Minority Health Research Coordination

Undergraduate Research Scholars Program Award August 2013, January 2014
George Mason University – Office of Student Scholarship, Creative Activities, & Research

Student Excellence Award May 2014
George Mason University – Office of Student Scholarship, Creative Activities, & Research

PROFFESIONAL AFFILIATIONS

- Graduate Biomedical Engineering Society, CMU October 2017—Present
- Society of Women Engineers, CMU August 2016—Present
- Society for Neuroscience, DC Chapter November 2014—Present
- Society for Neuroscience May 2015—Present
- Society for the Study of Ingestive Behavior June 2015—June 2016
- Biomedical Engineering Society September 2012—June 2014