

May 19, 2017

Department of Cell Biology and Neuroscience

Ph.D program: Assessment 2015-2017

For doctoral students:

1. Produce and defend an original significant contribution to knowledge at the appropriate level for a doctoral candidate.
2. Demonstrate mastery of subject content knowledge and research/critical inquiry methodology
3. Demonstrate effective written communication of substantive content
4. Demonstrate effective oral communication of substantive content
5. Be able to conduct scholarly and professional activities in an ethical manner
6. Publish thesis work in high quality, peer reviewed journals and present work at relevant conferences.

Based on the information below, all six doctoral students are achieving our learning outcomes.

- **Lauren Barnett** (mentor: Thom Hughes).

Passed her comprehensive exam, September, 2015

Gary C. Lynch Award for Graduate Study, 2016

Graduated in May, 2017

Publications:

Drobizhev, M., Stoltzfus, C., Topol, I., Collins, J., Wicks, G., Mikhaylov, A., **Barnett, L.**, Hughes, T.E., and Rebane, A. (2014). Multiphoton photochemistry of red fluorescent proteins in solution and live cells. *J. Phys. Chem. B* 118, 9167–9179.

Stoltzfus, Caleb R., **Lauren M. Barnett**, Mikhail Drobizhev, Geoffrey Wicks, Alexander Mikhaylov, Thomas E. Hughes, and Aleksander Rebane. "Two-photon directed evolution of green fluorescent proteins." *Scientific reports* 5 (2015).

Drobizhev, M., P. R. Callis, R. Nifosi, G. Wicks, C. Stoltzfus, **L. Barnett**, T. E. Hughes, P. Sullivan, and A. Rebane. "Long-and Short-Range Electrostatic Fields in GFP Mutants: Implications for Spectral Tuning." *Scientific reports* 5 (2015).

Barnett LM, Hughes TE, Drobizhev M.

Deciphering the molecular mechanism responsible for GCaMP6m's Ca²⁺-dependent change in fluorescence. *PLoS One*. 2017 Feb 9;12(2):e0170934.

- **Steven Hoffman** (mentor: Charlie Gray)

Oral presentations:

Society for Neuroscience, Fall 2014

Department of Cell Biology and Neuroscience seminar, May 2015.

Graduate School travel award to present a poster at the Society for Neuroscience annual meeting, Fall 2015.

Took an Ethics course.

Publications:

Nicholas M. Dotson, Baldwin Goodell, Rodrigo F. Salazar, **Steven J. Hoffman** and Charles M. Gray. Methods, caveats, and the future of large-scale microelectrode recordings in the non-human primate. *Front Syst Neurosci*. 2015 Nov 3;9:149.

- **Sarah Ohlen** (mentor: Frances Lefcort)

Passed her graduate comprehensive exams in November, 2014.

Graduated May, 2017

Took an Ethics Course

Presentations:

Department of Cell Biology and Neuroscience, Fall, 2014

Society for Neuroscience, December, 2015

Publications:

Ohlen SB, Russell ML, Brownstein MJ², Lefcort F. BGP-15 prevents the death of neurons in a mouse model of familial dysautonomia. *Proc Natl Acad Sci USA*. 2017. May 9;114(19):5035-5040.

Frances Lefcort, Marc Mergy, **Sarah B. Ohlen**, Yumi Ueki, and Lynn George. Animal and cellular models of familial dysautonomia. *Clinical Autonomic Research*. 2017 Submitted.

- **Hannah McKinney** (mentor: Steve Stowers)

Completed second year

Took an Ethics Course

Presentations:

Department of Cell Biology and Neuroscience, Spring, 2017

The Allied Genetics Conference, July, 2016 Orlando, Florida

- **Rosana Molina** (mentor: Thom Hughes)

Completed first year of classes

Presentations:

Molina, RS, Campbel, RE, Shaner, NC, Hughes, TE, Drobizhev, M. New GFP Variants with Enhanced Two-Photon Brightness. *Biophysical Journal*. Volume 112, Issue 3, Supplement 1, p284a, 3 February 2017

DOI: <http://dx.doi.org/10.1016/j.bpj.2016.11.1540>

- **Adam Thuen** (mentor: Jamie Mazer)

Completed first year of classes

Took an Ethics Course