

Arpiar Saunders

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Education

- **PhD Student in Neuroscience, Harvard Medical School**, Boston, MA. Expected 2014.
- **B.A. with High Honors. Swarthmore College**, Swarthmore, PA. Spring 2006.
- Majors: Biology, Linguistics. GPA: 3.76
- **University of Michigan, Armenian Language Institute**, Yerevan, Armenia. Summer 2002

Research Experience

Synaptic, Cell and Circuit Physiology of the Mouse Basal Ganglia, Graduate Student. Harvard Medical School, Dept. of Neurobiology. June 2009 –

- **Project:** Investigating basal ganglia circuits with whole-cell patch physiology and 2-photon imaging
With Dr. Bernardo Sabatini

Evolutionary Genomics in *Mimulus*, Post-Bach Researcher. Univ. of Montana, Fall 2006-Spring 2008.

- **Project:** Genetic, bioinformatic and cytogenetic (FISH) analysis of centromere-associated meiotic drive.
With Dr. Lila Fishman

Daphnia Comparative Genomics. FIBR Summer Undergraduate Researcher.

Hubbard Center for Genome Studies, Univ. of New Hampshire. Summer 2006.

- **Project:** BAC/Fosmid library construction for *Daphnia magna*; comparison of genome micro-synteny between *D.magna* and *D.pulex*. *With Dr. W.Kelley Thomas*

Linguistic Phylogenetics. Max Planck Institute for Evol. Anthropol., Leipzig, Germany. Summer 2005.

- **Project:** Adapting methods of biological phylogenetics to linguistic data; productive parallels of biological and linguistic evolution. *With Dr. Søren Wichmann.*

- **B.A. Thesis:** Linguistic phylogenetics of the Austronesian Family: A performance review of distance, parsimony, and bayesian methods.

Drosophila Neurogenetics and Behavior. Swarthmore College. Fall 2004 – Spring 2006.

- **Project:** Using the Gal4-UAS system to functionally silence gustatory receptor neuron populations to determine whether these cells detect pheromones necessary for learning in the courtship conditioning paradigm. *With Dr. Kathleen Siwicki*

- **B.A. Thesis:** Silenced gustatory inputs reveal new populations of pheromone detection cells involved in *Drosophila* courtship and support a non-associative basis for courtship conditioning.

Constraints on Gene Evolution. Swarthmore College. Spring 2006.

- **Project:** Analysis of selection on compiled EST data in plants. *With Dr. Colin Purrington*

Behavioral Ecology of Avian Olfaction. Swarthmore College/St. Lawrence Island, Alaska. Summer 2004.

- **Project:** Behavioral analyses of Crested Auklets (*Aethia cristatella*) in response to in-field odor manipulations. *With Dr. Julie Hagelin*

Grants and Awards

- **F31 Pre Doctoral Fellowship**, NIH. 2011 –
- **Ryan Research Fellow**, 2011. Dept. of Neurobiology, Harvard Medical School.
- **FIBR Summer Research Award**, 2006. Hubbard Center for Genome Studies, U. of New Hampshire
- **Best Thesis in Applied Linguistics**, 2006. Linguistics Dept., Swarthmore College.
- **Leo Leva Prize** for “unusual promise” in the field of Biology. 2006. Biology Dept., Swarthmore College
- **Sigma Xi Member**, 2006 -
- **HHMI Field Award** for Summer Research, 2004.

Teaching Experience

- **Laboratory TA:** Organismal and Cellular Biology, Fall 2004 and 2005. Neurobiology, Spring 2005.
- **English Teacher:** Antalya, Turkey. Summer 2001. Chuuk State, Micronesia. Winter 2002.

Languages

Human: German (fluent), W. Armenian and MS Arabic (introductory) **Computer:** Perl, Igor Pro

Publications

In Preparation

- Saunders, A., Oldenburg, I. and Sabatini, B. Viral tools for circuit mapping and control in cell specific Cre driver mouse lines. (planned submission to PLoS ONE)
- Saunders, A. and Fishman, L. Expansion of a centromeric element causes female meiotic drive in *Mimulus*. (planned submission to *Genetics*)

2008

- Fishman, L. and Saunders, A. 2008. Centromere-associated female meiotic drive entails male fitness costs in Monkeyflowers. *Science* 322: 1559 - 1562

2007

- Wichmann, S. and Saunders, A. 2007. How to use typological databases in historical linguistic research. *Diachronica* 24:2 373-404.

Talks

2011

- Young Scientists Forum Harvard – Ludwig Maximilian University. Munich, Germany. “Balance of direct/indirect pathway governs corticalstriatal synaptogenesis.”

2007

- Mimulus Meeting, 2007. Nat.Evol.Syn.Center, Durham, N.C. “FISHing for centromeres in *Mimulus*.”

2006

- FIBR Research Symposium 2006. Indiana University. “Comparative genomics from scratch: a large-insert DNA library for *Daphnia magna*.”

2005

- NerveNet 2005, Marine Biological Laboratories, Woods Hole MA. “Silenced gustatory neuron populations define pheromone input channels necessary for *Drosophila* courtship and courtship memory.”
- Dept. of Linguistics, Max Planck Institute for Evol. Anthr., Leipzig, Germany. 2005. “Methods for linguistic phylogenetics.”

Posters

2010

- HHMI Science Meeting: Neurons, Systems and Neural Disease, Janelia Farms Research Campus, Ashburn, VA, 2010: Silencing GABA release from direct and indirect pathway medium spiny neurons reveals opposite roles of pathway inhibition in the developmental wiring of the basal ganglia (Arpiar Saunders*, Yevgenia Kozorovitskiy*, and Bernardo Sabatini)

- Smith Family Biomedical Research Poster Session, 2010. Boston, MA: Behavioral Consequences of Silencing GABA Release from Dopamine 1 or 2-type Receptor Expressing Medium Spiny Neurons (Yevgenia Kozorovitskiy*, Arpiar Saunders*, and Bernardo Sabatini)

* = equal contribution

2009

- Genomic Impact of Eukaryotic Transposable Elements 2009, Pacific Grove, CA: “The repetitive genomic landscape of the wildflower *Mimulus guttatus*.” (Eric W. Ganko, Arpiar Saunders, Lila Fishman, Todd J. Vision)
- Plant and Animal Genomes Conference 2009, San Diego: “The *Mimulus guttatus* genome: a resource for comparative and evolutionary genomic studies in plants.” (Eric W. Ganko, Thomas H. Clarke, Arpiar Saunders, Andrew Morgan, Jason Phillips, Jeremy Schmutz, Kerrie Berry, Lila Fishman, Daniel Rokhsar, John Willis, and Todd J. Vision)

2008

- Evo-Wibo, 2008. Port Townsend, WA: “Cytogenetic characterization of centromeric meiotic drive in *Mimulus*.” (Arpiar Saunders and Lila Fishman)

2007

- Ecological Genomics Symposium, 2007. Kansas City, MO: “Selfish chromosomal evolution leads to male inbreeding depression in *Mimulus guttatus*.” (Arpiar Saunders and Lila Fishman)

2006

- 10th International Conference on Austronesian Linguistics. Luzon, Philippines, Winter 2006: (Linguistic Phylogenetics, Arpiar Saunders)
- Swarthmore Sigma Xi Poster Session, Spring 2006: (Neurogenetics, Arpiar Saunders and Kathleen Siwicki)

2005

- Swarthmore Sigma Xi Poster Session, Fall 2005: (Linguistic Phylogenetics, Neurogenetics)
- Haverford College Undergrad Research Symposium, Fall 2005: (Linguistic Phylogenetics)