

NOËLLE JAMES

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EDUCATION

University of Illinois at Urbana-Champaign

December 2019

PhD in Neuroscience

Dissertation supervisor: Dr. Alison M. Bell

Washington University in St. Louis

May 2008

B.A. in Psychology

GRANTS, FELLOWSHIPS, AND AWARDS

- Best poster, Carl Woese Institute for Genomic Biology Fellows Symposium 2019
- NSO Student Leadership Award, U of I Neuroscience Program 2019
- Professional Development Award, Society for Neuroscience 2018
- Neuroscience Scholars Affiliate, Society for Neuroscience 2018
- 1st Place Graduate Oral Presentation in Biological Sciences at the 2018 ERN Conference 2018
- AAAS travel award for the 2018 Emerging Researchers National (ERN) Conference in STEM 2017
- SocioGenomics RCN Lab Exchange Award 2015
- American Genetic Association Travel Award 2015
- Anderson Neuroscience Program Fellowship 2014–2015
- Girl Scout Gold Award 2001

PUBLICATIONS

James, N. P., & Bell, A. M. Minimally invasive brain injections for viral-mediated transgenesis: New tools for behavioral genetics in sticklebacks. *Journal of Experimental Biology* - In Prep. Pre-print doi: 10.1101/2020.03.02.973594

James, N. P., & Furukawa, M. (2020). Presence of a nest does not alter aggression levels in threespined stickleback. *Animal Behaviour* - Accepted.

Bukhari, S. A., Saul, M. C., **James, N. P.**, Bensky, M., Stein, L. , Trapp, R., & Bell, A. M. (2019). Neurogenomic insights into paternal care and its relation to territorial aggression. *Nature Communication*, 10(1), 4437.

Bukhari, S. A., Saul, M. C., Seward, C. H., Zhang, H., Bensky, M., **James, N. P.**, Zhao, S. D., Chandrasekaran, S., Stubbs, L., & Bell, A. M. (2017). Temporal dynamics of neurogenomic plasticity in response to social interactions in male threespine sticklebacks. *PLoS Genetics*, 13(7):e10006840.

James, N. P., Lu, X., & Bell, A. M. (2016). A fluorescence in situ hybridization (FISH) protocol for stickleback tissue. *Evolutionary Ecology Research*, 17(4), 603–617.

Forsthoefel, D. J., **James, N. P.**, Escobar, D. J., Stary, J. M., Vieira, A. P., Waters, F. A., & Newmark, P. A. (2012). An RNAi screen reveals intestinal regulators of branching morphogenesis, differentiation, and stem cell proliferation in planarians. *Developmental Cell*, 23(4), 691–704.

POSTERS & TALKS

James, N. P., & Bell, A. M. Viral-mediated transgenesis of MAOA and AVP increases territorial aggression in stickleback. Dynamic poster presented at Neuroscience 2019, Chicago, IL, October 2019.

James, N. P., & Bell, A. M. Viral-mediated transgenesis of MAOA and AVP increases territorial aggression in stickleback. Talk presented at Behavior 2019, Chicago, IL, July 2019.

James, N. P., & Bell, A. M. Viral-mediated transgenesis of MAOA and AVP increases territorial aggression in stickleback. Poster presented at the Carl Woese Institute for Genomic Biology Fellows Symposium, Urbana, IL, May 2019. *Won Best Poster*

James, N. P., & Bell, A. M. Viral-mediated transgenesis in the brain as a method to determine molecular mechanisms of aggression in stickleback fish. Poster presented at Neuroscience 2018, San Diego, CA, November 2018.

James, N. P., & Bell, A. M. Fishing for genetic effects on social behavior: Viral-mediated transgenesis in stickleback fish. Oral presentation at 2018 Emerging Researchers National (ERN) Conference in STEM, Washington D.C, February 2018. *Won 1st Place Graduate Oral Presentation in Biological Sciences*

James, N. P., & Bell, A. M. Initial Mapping of the Behavior-Brain Landscape in Threespine stickleback. Poster presented at 8th International Conference on Stickleback Behavior and Evolution, Stony Brook, NY, July 2015.

Forsthoefel, D., **James, N.,** Escobar, D., Stary, J., Vieira, A., Waters, F., & Newmark, P. A. The planarian intestine: A model for stem-cell-driven organ regeneration. Talk by DF at North American Planarian Meeting. Kansas City, MO, May 2013.

Roberts-Galbraith, R. H., **James, N. P.,** & Newmark, P. A. Identification of factors critical for planarian nervous system regeneration. Talk by RRG at American Society for Cell Biology Annual Meeting, December 2012.

Forsthoefel, D., **James, N.,** Waters, F., Park, A., Escobar, D., Stary, J., & Newmark, P. A. Intestinal renewal and regeneration in the planarian *Schmidtea mediterranea*. Talk by DF at EMBO Conference: Molecular and Cellular Basis of Regeneration & Tissue Repair. Sesimbra, Portugal, September 2010.

PROFESSIONAL EXPERIENCE

University of Illinois at Urbana-Champaign

August 2014–December 2019

Graduate Student

Dr. Alison M. Bell

- Viral-mediated transgenesis, brain injection, and fluorescent in situ protocol development
- ChIP-Seq and RNA-Seq on *G. aculeatus* for Simons project 'Molecular Roots of the Social Brain'
- Effect of nest presence on territorial value and aggression
- Adult neurogenesis induced by territorial defense
- Additional Techniques: BrdU intraperitoneal injections, CRISPR knockdown, qPCR, CLARITY, ELISA, Pharmacology studies

Howard Hughes Medical Institute

February 2008–August 2014

Research Technician II

Dr. Phillip A. Newmark at University of Illinois at Urbana-Champaign

- Genetic screen of differentially expressed genes in the central nervous system of *S. mediterranea*
- RNAi knockdown screen of differentially expressed genes in the intestine of *S. mediterranea*
- Creation, development and maintenance of laboratory inventory database
- Lab computer support including building a workstation for an LSM 710 confocal microscope
- Maintenance of ultra-pure water purification system

Washington University in St. Louis 2004–2005
Computer Technician Residential Technology Services

- Configuration of Cisco network switches
- Top-tier computer support including hardware diagnostics and infection removal

Washington University in St. Louis School of Medicine Summers 2003 & 2004
Research Assistant Dr. David Sibley

- Survey and comparison of SNPs between *Toxoplasma gondii* lineages

Washington University in St. Louis Summer 2002
HHMI Prefreshman Research Scholar Dr. Sarah Elgin

- Independent analysis of heterochromatin protein 1 and heterochromatin protein 2 in *Drosophila melanogaster* via polytene chromosome squashes

Princeton University Summer 2001
Laboratory Assistant Dr. Suzanne Staggs

- Developing freshman astrophysics course for non-physics majors at Princeton University
- Creating lab webpage for PIQU Experiment

University of Wisconsin–Madison Summer 2000
NASA SHARP Plus High School Apprenticeship Dr. Fran Fogerty & Dr. Dean Mosher

- Genetic survey for downstream leukemia suppressors and enhancers in the *Drosophila* model system via test crossing

TEACHING EXPERIENCE

University of Illinois at Urbana-Champaign 2016–2017
Teaching Assistant College of Liberal Arts & Sciences

- MCB 150: Molecular and Cellular Basis of Life Spring 2017
- Received a personal instructor rating of Excellent
- IB 150: Organismal Biology Fall 2016

Washington University in St. Louis 2004–2005
Professional Development Instructor Student Technology and Resource Support

- Course: Advanced Virus, Trojan, and Bot Removal
- Course: Windows Network Setup and Troubleshooting

Crim Elementary School 2001
Certified Continuing Education Instructor Bridgewater-Raritan Regional School District

- Course: Supplemental Science Instruction for Teachers; 6 weeks
- Certification by Franklin Institute through National Science Partnership

PROFESSIONAL MEMBERSHIPS

Animal Behavior Society 2019–present
AAAS 2018–present
Society for Neuroscience 2017–present
J.B. Johnston Club 2015

SERVICE AND OUTREACH

Letters to a Prescientist 2019–present
Scientist Mentor Landmark Middle School

- Demystifying STEM careers to students from high-poverty schools

Girls Go For It DREAM Big Panel 2017
Panelist Carrie Busey Elementary School

Image of Research 2017
Finalist University of Illinois at Urbana-Champaign

Eye to Eye 2016–present
Mentor Urbana Middle School & Franklin Middle School

- Eye to Eye focuses on strengthening essential social-emotional skills of children labeled with ADHD or language, reading, & math based learning disabilities

Art of Science 6.0 2016
Contributing Scientist Carl R. Woese Institute for Genomic Biology

Mentor Matching Engine 2015–present
STEM Mentor Illinois Science & Technology Institute

- Connects Illinois high school students and their teachers to STEM professionals who serve as online mentors for student-led research
- 2017-2018 Project: Reality Television and Race Relations
- 2017 Project: Bipolar Disorder and Schizophrenia
- 2015-2016 Project: Drosophila Preference Between Natural and Artificial Sugars

Undergraduate Research Mentorship 2014–present
Graduate Mentor University of Illinois at Urbana-Champaign

- Mingkang (David) Qi, Chemistry & Integrative Biology Honors 2019
- Rachael Kirchschrager, Integrative Biology 2018
Microbiologist at CSL Behring
- Severin Odland, Natural Resources and Environmental Sciences & Psychology 2017-2019
- Erika Carlson, Integrative Biology Honors 2017-2018
Integrative Biology Distinction Award
High Distinction Project: Measurements of Territorial Aggression in Male Stickleback
- Megan Furukawa, Molecular and Cellular Biology 2017
2nd Author: Presence of a nest does not alter aggression levels in threespined stickleback
- Shuyang (Sigrid) Jin, Integrative Biology 2016-2017
Neurobiology Graduate student at Duke University
- Joseph Dobbins, Integrative Biology Honors 2014-2018
Independent Project: Territorial size under the risks of Predation
Veterinary school at University of Illinois
- Kelly Hynes, Integrative Biology 2015-2016
- Andrew Gensburg, Pre-Med Molecular and Cellular Biology 2015-2016
- Leslie Pardo, Psychology 2015-2016
- Ali Norwood, Molecular and Cellular Biology 2014-2015
Graduate student at University of Wisconsin-Madison

- ConvoPartner** 2011–2012
American Culture Volunteer Intensive English Institute
- Junior Scientist Day** 2009–2011
Demonstrator Yankee Ridge Elementary School
- Interdisciplinary Semester Workshop in an Urban School Setting** 2005
Teaching Volunteer Adams Elementary School
- Seven weeks of biology after-school enrichment for 3rd–5th grade students
 - Additionally obtained private grant and installed observational fish tank
- LeaderShape Institute** 2003
Participant Washington University in St. Louis
- Engineering Council** 2002-2003
Board Member, 'Cheap Lunch' Chairperson Washington University in St. Louis
- Organized a weekly community forum for engineering students and faculty
- Interactive Science Discovery Room** 2001
Girl Scout Gold Award Project Crim Elementary School
- Designed 47 curriculum-based experiments, 23 in ready-to-use state for up to 100 students
 - Authored integrated manual to assist teachers in selecting and teaching experiments