

# PAIGE B. MILLER

7601 Appaloosa Lane, Lino Lakes, MN 55014 • (651)-767-2412 • paige.miller@drakeresearchlab.com

## EDUCATION

B.A. in Mathematics and Biology, Gustavus Adolphus College, Saint Peter, MN. 2015  
GPA 3.6. Biology Honors Society.

High School Diploma Centennial Senior High School, Circle Pines, MN. 2011  
GPA 3.8. National Honors Society.

## RESEARCH EXPERIENCE

**Public Health Intern** 2015

*U.S. Centers for Disease Control and Prevention (CDC) – Atlanta, GA*

Investigated how a brief message regarding HIV testing and unknown infections impacts likelihood of getting tested and using condoms in the future among African American/black and Latino men who have sex with men (MSM) in the United States.

**Population Biology of Infectious Disease REU Program** 2014

*Drake Laboratory, University of Georgia – Athens, GA*

Developed wavelet-based early warning signals for detection of emerging infectious diseases and disease eradication thresholds. Found wavelet-based early warning signals were more reliable than conventional statistics at detecting disease emergence and our new statistic has potential for use in disease surveillance.

**Developmental Biology Research** 2012-2014

*Bloch Qazi Lab, Gustavus Adolphus College – Saint Peter, MN*

Accepted for participation in first-year summer research program sponsored by the Howard Hughes Medical Institute at Gustavus (2012). Investigated how female aging effects reproductive behavior and physiology in *Drosophila melanogaster*. In a directed research class (BIO 396), used the *Drosophila* longevity mutant, *methuselah*, to study impacts of aging on aspects of reproduction in a seemingly aging-resistant organism and co-wrote a review article on reproduction and senescence in *Drosophila melanogaster* that has been accepted for publication.

**Grapevine Dynamics in Association with Tree Damage Final Research Project** 2014

*Ecology Evolution & Behavior, Gustavus Adolphus College – Saint Peter, MN*

Investigated the role parasitic vine species play with respect to tree damage by determining the relationship between severity of tree damage and likelihood of vine presence. We found differences in likelihood of vine presence among trees with varying damage levels where trees with little to no damage had a smaller likelihood of having a vine present.

**Population Biology of Infectious Disease REU Program** 2013

*Park Laboratory, University of Georgia – Athens, GA*

One of nine students selected to participate in the REU program at the University of Georgia. Developed two mathematical models, one deterministic and one stochastic, for transmission and drug resistance emergence of heartworm in the United States. Collectively, these models help to identify risk factors and regions that are associated with successful and rapid establishment of drug resistant heartworm populations.

**Differences between Gender Ratios in STEM Majors Final Research Project** 2012

*Applied Statistics, Gustavus Adolphus College – Saint Peter, MN*

Analyzed gender differences in STEM majors at Gustavus. Surveyed increasingly positive attitudes towards quantitative disciplines among women at Gustavus.

## PUBLICATIONS

Miller P.B., Obrik-Uloho O.T., Phan M.H., Medrano C.L., Renier J.S., Thayer J.L., Wiessner G, and Bloch Qazi M.C. 7 September, 2014. The Song of the Old Mother: Reproductive Senescence in Female *Drosophila*. FLY.

Mansergh G, PB Miller, JH Herbst, MJ Mimiaga, J Holman. Effects of Brief Messaging about Undiagnosed Infections Detected through HIV Testing among Black and Latino Men who have Sex with Men in the United States. In press. Sexually Transmitted Diseases.

## **RELEVANT COURSEWORK**

*Mathematics* – Calculus (I, II, III), Introduction to Statistics, Linear Algebra, Introduction to Analysis, Applied Statistics, Dynamical Systems, Theory of Complex Variables, Mathematical Methods in Biology, Probability and Mathematical Statistics (I and II)

*Biology* – Introduction to Biology, Organismal Biology, Cellular and Molecular Biology, Evolution Ecology and Behavior, Directed Research, Immunology, Conservation Biology, Ecology

*Other* – History of the Plague: Old and New, General Chemistry, Organic Chemistry, Urban Geography, Geographical Information Systems, Introduction to Epidemiology, Evolution of the Hawaiian Islands

## **PRESENTATIONS & CONFERENCES**

Miller, P. and M. Bloch-Qazi. 2012. Female age affects reproductive behavior and physiology in *Drosophila melanogaster*. Midstates Consortium for Math and Science Undergraduate Research Symposium, Chicago, IL.

Harvard School of Public Health Undergraduate Conference on America's Next Top Infectious Disease Model: HIV and Influenza. 2013. Chicago, IL.

Miller, P. and A.W. Park. 2013. The Perfect Storm: Factors that lead to increased transmission and drug resistance emergence of heartworm in the United States. Student Research Symposium, Gustavus Adolphus College.

Developmental Biology Symposium. 2013, 2012. Minneapolis, MN.

Miller, P. and A.W. Park. 2013. The Perfect Storm: Factors that lead to increased transmission and drug resistance emergence of heartworm in the United States. NIMBIOS Undergraduate Research Conference at the interface of Math and Biology, Knoxville, TN.

Miller, P. and A.W. Park. 2014. The Perfect Storm: Factors that lead to increased transmission and drug resistance emergence of heartworm in the United States. Celebration of Creative Inquiry, Gustavus Adolphus College.

Miller, P. and A.W. Park. 2014. The Perfect Storm: Factors that lead to increased transmission and drug resistance emergence of heartworm in the United States. Midwest Mathematical Biology Conference, La Crosse, WI.

Miller, P. and J.M. Drake. 2015. Using the power ratio as an early warning statistic for predicting emerging infectious disease outbreaks. National Science Foundation, Emerging Researchers National Conference, Washington D.C., USA.

Miller, P. and G. Mansergh. 2015. Effects of Brief Messaging about Undiagnosed Infections Detected through HIV Testing among Black and Latino Men who have Sex with Men in the United States. Celebration of Creative Inquiry, Gustavus Adolphus College.

## **AWARDS & SCHOLARSHIPS**

National Science Foundation, Graduate Research Fellowship Program (2015) – Honorable Mention.

Mansergh Award (2015) – For a student entering into the field of public health.

Paul Rucker Scholarship (2011) – Recognizes students from diverse backgrounds.

Charles Hamrum Award (2014) – Recognizes achievement of one senior majoring in biology.

Verna Leona Anderson Scholarship (2012) – For high achieving women at Gustavus.

Marguerite Pooley Hauber Scholarship (2012) – For women majoring in mathematics.

Dean's List (2014) – Cumulative semester grade point average over 3.75.

## **SERVICE**

Women in Science; *mentor* (2015-current) – advised an undergraduate genetics major on graduate school applications, career trajectories, and academic support

Delta Phi Omega Sorority; *Co-President* (2014-2015); *treasurer* (2013) – Held weekly meetings, planned yearly breast cancer research banquet, oversaw group events, calculated semester budgets.

Study Buddy; *Volunteer* (2011-2015) – Helped teach high school students in math and science.

Biology Department; *Academic Assistant* (2014-2015) – Resource for biology faculty and students.

## **PROFESSIONAL AFFILIATIONS**

Sigma Xi Research Honors Society

Beta Beta Beta Biology Honors Society