

# Robert Williamson

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## Education

Rose-Hulman Institute of Technology

B.S. in Applied Biology May 2010

Thesis Title: *Investigating Factors that Affect the Fitness of Mate Choice Strategies Using an Individual Based Model*

B.S. in Software Engineering May 2010; Track in Genetics

Senior Project: *Developing a News Application for the Android Platform*

## Professional Experience

Summer 2009 Research Assistant, University of Wyoming Summer Bioinformatics Institute

Supervisor: Dr. Alex Buerkle

Duties: developed Perl scripts to analyze data; implemented a C program to perform a Bayesian Analysis of Molecular Variance

Summer 2008 Research Assistant, Interdisciplinary Research Collaborative

Supervisor: Dr. Michael Lanoo

Duties: developed mathematical models of salamander neuromast sensitivity range; created 3D models displaying that range

## Presentations

**Williamson RJ\***, Josephs EB, Platts A, & Wright SI. 2013. *The extent of positive and negative selection in noncoding regions of the genome of Capsella grandiflora*. Poster at SMBE.

Ågren JA\*, **Williamson RJ**, & Wright SI. 2012. Mating system shifts and transposable element evolution. Presentation at PopGroup 46.

**Williamson RJ\***, Koenig G, Josephs EB, Hazzouri KM, Weigel D, & Wright SI. 2012. *Quantifying the strength of positive and purifying selection across the whole genome of outcrossing and selfing Capsella species*. Presentation at the First Joint Congress on Evolutionary Biology.

**Williamson RJ\***. 2012. *Quantifying the strength of natural selection in an outcrossing and a selfing plant*. Presentation at the Atwood Colloquium in Ecology and Evolution.

**Williamson RJ\***, Platts AE, Hazzouri KM, Wright SI. 2011. *Genome-wide positive and negative selection in Capsella grandiflora*. Poster at the Canadian Society for Ecology and Evolutionary Biology.

**Williamson R\*** 2009. [\*An Individual Based Modelling Approach to Studying the Evolution of Mate Choice Strategy\*](#). Presentation and Poster at the 2009 International Society for Computational Biology Rocky Mountain Bioinformatics Conference.

Gompert Z, **Williamson R\***, & Buerkle A. 2009. *A Bayesian Markov Chain Monte Carlo Implementation of Analysis of Molecular Variance*. Presentation at the 2009 Rose-Hulman Interdisciplinary Research Collaborative.

Paine D\*, Krisenko M\*, Moseng M\*, **Williamson R\***, & Zynda G\*. 2009. *Tracing the Journey of Each Footstep*. Poster at the 2009 Rose-Hulman Interdisciplinary Research Collaborative.

**Williamson R\*** & Lanoo M. 2008. *Modeling Salamander Neuromast Sensory Range*. Poster at the 2008 Rose-Hulman Interdisciplinary Research Collaborative.

**Williamson R\***, Campbell B\*, Chappell R, & Zynda G. 2008. [\*Schedule Planning System Using a Database\*](#). Presentation at the 2008 IN/IL American Society for Engineering Education conference.

\* Indicates primary presenter(s)

## **Publications**

Arunkumar R, Josephs EB, **Williamson RJ**, & Wright SI. 2013. *Pollen-specific, but not sperm-specific genes show stronger purifying selection and higher rates of positive selection than sporophytic genes in Capsella grandiflora*. Mol Biol Evol.

Hough J, **Williamson RJ**, & Wright SI. 2013. *Patterns of selection in plant genomes*. Ann Rev Ecol Evol 44(1).

Haudry A, Platts, AE, Vello E, Hoen D, Leclercq M, **Williamson R**, et. al. 2013. *An atlas of over 90,000 conserved non-coding sequences yields a detailed map of crucifer regulatory regions*. Nat Genet 45.

Gompert Z, Forister M, Fordyce J, Nice C, **Williamson R**, & Buerkle A. 2010. *Bayesian analysis of molecular variance in pyrosequences quantifies population genetic structure across the genome of Lycaeides butterflies*. Mol Ecol 19: 2455-73.

## **Honors, Awards, and Memberships**

University of Toronto Teaching Assistants Training Program Teaching Excellence Award, one of 12 TAs short listed from TAs across the entire campus, 2012 and 2013

University of Toronto Department of Ecology & Evolutionary Biology departmental teaching awards:  
One of nine TAs nominated for the EEB Outstanding Teaching Assistant Award, 2013  
BIO120 Outstanding Teaching Assistant Award: 2010, 2011  
BIO220 Outstanding Teaching Assistant Award: 2011

Ecology & Evolutionary Biology Graduate Student Association (EGSA)

Co-president 2013-2014  
Fundraising Representative 2012-2013  
Student Seminar & Journal Club Representative 2012-2013

Member, Dean's List (12/12 quarters at RHIT)

RHIT MLK Jr. Leadership Award, 2010

RHIT Carl & Mildred Carlson Scholar, 2006-2010

Member, Alpha Chi Sigma (The Professional Chemistry Fraternity), Inducted Spring 2007

Member, Pi Mu Epsilon (The National Mathematics Honor Society), Inducted Spring 2008  
Chapter Secretary/Treasurer Spring 2008 - Spring 2009

Member, Upsilon Pi Epsilon (The International Computing and Informatics Honor Society), Inducted Fall 2009

Member, Tau Beta Pi (The Engineering Honor Society), Winter 2009 - Present