

Melissa A. Wilson

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EDUCATION

Ph. D. in Bioinformatics and Genomics

Integrative Biosciences Program
The Pennsylvania State University
Faculty Advisor: Dr. Kateryna Makova

Expected May 2010
Cumulative GPA: 3.96/4.0

B. Math, Medical Mathematics with Honors

Creighton University

May 2005
Cumulative GPA: 3.69/4.0

High School Diploma

Syracuse Dunbar Avoca High School

May 2001
Cumulative GPA: 3.86/4.0

RESEARCH EXPERIENCE**The Pennsylvania State University**

Male mutation bias in 34-mammalian genomes, *2009-Present*
Evolutionary rates of autosomal and sex-linked genes, *2006-2008*
Duplicate gene retention in *Arabidopsis thaliana*, *2005-2006*
Evolutionary differences between primate Y chromosomes, *2005-2006*

University of Nebraska at Lincoln

Research Experience for Undergraduates: Mathematical biology, *2004-2005*

Creighton University

Feynman's operational calculus: Non-commuting functions, *2004*

TEACHING AND WORK EXPERIENCE**Graduate Students as Teachers, 2006-2009**

Teach hands on biotechnology and molecular biology concepts (e.g. DNA extraction) to high school students

The Pennsylvania State University, 2006-2007

BIOL141: Exam proctor
MATH140B: Calculus and Biology I teaching assistant

St. Mary's Hospital, 2002-2005

Nursing assistant, spanish interpreter

Creighton University, 2001-2005

Mathematics tutor: High School Geometry through Multivariable Calculus
Multi-variable Calculus teaching assistant

Residence Hall Desk Worker, 2003-2005

Monitor desk, assist student residents, manage nightly videos

Simple Simon Day Care, 2002-2003

Child caretaker for children ages 3mo-11yrs, Mathematics/English tutor

Creighton University Library, 2001

Librarian assistant – organize, check-in/out books, become familiar with library multi-media tools

Syracuse Shur Save, 1998-2001

Cashier, stocker

VOLUNTEER AND OUTREACH**International Women's Day Award Committee, 2008,2009**

Read and evaluate applications for International Women's Day *Spirit of Internationalization Awards*

Mexico Medical Mission Trip Interpreter, 2009

Interpret Spanish for doctors and nurses, organize children's activities, assist in the pharmacy

Equal Opportunity Planning Committee Review Team Member, 2009

Evaluate summer program proposals and make recommendations on fulfilling funding requests

Tyrone Science Day Workshop, 2008

Design and run "Dragon Genetics" workshop, 8 sessions, for 144 first grade students
Primary Elections Volunteer, 2008
Enter data, cross-reference databases, poll voters, team leader at 3-31-08 politician speech
Bioinformatics and Genomics Option Journal Club Coordinator, 2008-2009
Organize journal and research presentations; coordinate refreshments and room reservations
Integrative Biosciences Mentor, 2006-2009
Mentor incoming bioinformatics & genomics option students; acclimate students to the campus/program
English Conversation Partner for Science Graduate Students, 2005-2009
Practice spoken and written English skills with incoming Korean and Chinese graduate students
Pennsylvania Junior Science & Humanities Symposium (PA-JSHS) Judge, 2008
Judge high school science research posters
Pennsylvania Junior Academy of Science Judge, 2007-2008
Judge 8th-12th grade scientific research presentations
Framework to Foster Diversity Evaluation Committee Member, 2006-2007
Evaluate several Penn State campuses on mid-term progress of university-wide diversity goals
One World Health Center, 2001-2005
Spanish interpreter and nursing assistant
Siena Francis House, Homeless Shelter, 2001-2004
Distribute meals and sort donations

ORGANIZATIONS & AFFILIATIONS

Society for Molecular Biology and Evolution, 2007-Present
Sigma Delta Epsilon Graduate Women in Science, 2006-Present
National GWIS Membership committee member, 2009-2012
Inside the Scientists Studio coordinator, 2008-2010
Chapter president, 2007-2009
National Fellowships committee member, 2007-2008
Chapter vice president, 2006-2007
Voices Conference planning committee member, co-chair 2007-2009
Girl Scout Workshop chair, 2007-2009
Women in the Sciences and Engineering Ribbon Week committee co-chair, 2006-2009
Women in the Sciences and Engineering Institute, 2006-Present
WISE Institute Internal Advisory Board member, 2009-2010
WISE Camp Afternoon Workshop committee member – "Engineering – Designing Possibilities", 2009
WISE Camp and WISE Day Camp Workshop Coordinator – "Dragon Genetics", 2008
Program Assistant for WISE Week Day Camp, 2007
Commission for Women, 2006-Present
Membership committee member, 2009
Achieving Woman and Rosemary Schraer Awards review committee member, 2009
Executive committee member, 2007-2009
Marketing committee chair, co-chair 2007-2009
Assessment committee member, 2006-2008
Appointed member, 2006-2009
Biology Department Graduate Student Association, 2006-Present
Graduate Affairs committee representative, 2008-2009
Graduate Recruiting committee member, 2007-2009
Society for the Study of Evolution, 2006-Present
American Association for the Advancement Science, 2005-2008
Omicron Delta Kappa: The National Leadership Society, 2004
Pi Mu Epsilon: Honorary National Mathematics Society, 2002
National Society of Collegiate Scholars, 2002-2005
Creighton University Honors Program, 2001-2005

HONORS & AWARDS

The Munich Graduate Program EES Summer School on the Evolution of Sex Chromosomes participant, 2008
Women In Science and Engineering Outstanding Service Award, 2008
Invited Breakfast with the Dean of the Graduate School, 2006, 2009
Chaired a session at the "Evolution 2006" conference in Stony Brook, NY, 2006
National Chancellor's List, 2006-Present

GRANTS & FELLOWSHIPS

Sex & Recombination: In Theory and Practice Conference Travel Fellowship, 2009
“Public Service Announcements Promoting Careers in Science and Mathematics.” Funded by Outreach Thematic Initiative Fund (TIF) Proposal, PreK-12 Education Theme. PI: Nathaniel Brown, co-PI: Melissa Wilson, Barbara Houtz, Babs L Bengtson, Elizabeth Hutton, rural Multi-District Academic Space Alliance, 2009-2010
NSF Graduate Research Fellowship, 2007-2010
Institute of Molecular Evolutionary Genetics Travel Grant, 2006, 2008, 2009
Integrative Biosciences Travel Grant, 2007, 2009
National Graduate Women in Science Travel Grant, 2008
J. Ben and Helen D. Hill Memorial Award, 2007
Women In Science and Engineering Travel Grant, 2006, 2007
The Pennsylvania State University NSF GRFP Incentive Award, 2006
Graham Endowed Fellowship: University-wide recognition of highly recruited students, 2005-2006
Huck Institute of the Life Sciences Fellowship, 2005-2006
Huck Institute of the Life Sciences Supplemental Award: For academic excellence, 2005-2006
Creighton University Outstanding Mathematician Award: One award per academic year, 2005
Creighton University Academic Scholarship, 2001-2005

PAPER PUBLICATIONS, SUBMISSIONS AND IN PREPARATION

2. Wilson, M., and Makova, K.D.. Evolution and survival on eutherian sex chromosomes. Accepted by PLoS Genetics June 2009

1. Wilson, M., and Makova, K.D.. Genomic analyses of sex chromosome evolution. Accepted by Annual Reviews of Human Genetics and Genomics June 2009

PRESENTATIONS (presenter in bold)

Presented poster at Society for Molecular Biology and Evolution 2009 in Iowa City, IA, June 2009

Melissa Wilson, Francesca Chiaromonte and Kateryna Makova

“Male mutation bias observed across 34 mammalian genomes”

Selected talk at Sex and Recombination: In Theory & In Practice in Iowa City, IA, June 2009

Melissa Wilson, Francesca Chiaromonte and Kateryna Makova

“Male mutation bias observed across 34 mammalian genomes”

Presented talk at Munich EES Summer School on “The Evolution of Sex Chromosomes” in Frauenchiemsee, Germany, September 2008

Melissa Wilson and Kateryna Makova

“Evolution and Survival on Eutherian Sex Chromosomes”

Invited 1 hour lecture at the Bioinformatics Research Center at Aarhus University in Aarhus, Denmark, September 2008

Melissa Wilson and Kateryna Makova

“Evolution and Survival on Eutherian Sex Chromosomes”

Presented talk at Evolution 2008 Conference in Minneapolis, MN, June 2008

Melissa Wilson and Kateryna Makova

“Evolution and Survival on Eutherian Sex Chromosomes”

Biology Department Graduate Student Association presentation in State College, PA, February 2008

Melissa Wilson and **Kevin Zelnio**

“A Natural History of Unintelligent Design: In celebration of Darwin Day”

Research and Recruitment 1 hour seminar at Creighton University in Omaha, NE, October 2007

Melissa Wilson

“Transitioning to Graduate Research: Integrative Research at Penn State”

Invited participant at 1 hour Fellowships seminar at Creighton University in Omaha, NE, October 2007

Presentation at the 11th Congress of the European Society of Evolutionary Biology in Uppsala, Sweden, August 2007

Melissa Wilson and **Kateryna Makova**

“What does it take to stay on sex chromosomes? The survival guide for genes”

Selected talk at the Society for Molecular Biology and Evolution 2007 conference in Nova Scotia, Canada, June 2007

Melissa Wilson and Kateryna Makova

“A unique type of duplication: how do genes survive on sex chromosomes?”

Commission for Women, Assessment Committee presentation to Dr. Graham Spanier, President of The Pennsylvania State University, University Park, PA, March 2007

Melissa Wilson and Dorus Malkmus

“Assessing the Status of Undergraduate Women Students at Penn State University”

Invited 1 hour plenary talk at The University of Nebraska at Lincoln, 8th Annual Regional Mathematics Conference in Lincoln, NE, *October 2006*

Melissa Wilson

"Research Experiences for Undergraduates: A Stoichiometric Model for Tumor Growth"

Presented talk at the Evolution 2006 conference in Stony Brook, NY, *July 2006*

Melissa Wilson and Kateryna Makova

"Evolution of sex linked genes versus their autosomal counterparts: A comparison between human, mouse and opossum"

Presented talk at the Joint American Mathematics Association/Mathematics Association of America National meeting in Atlanta, GA, *Jan 2005*

Melissa Wilson, Vladamir Ufimtsev and Bo Deng

"A Stoichiometric Model for Tumor Formation"

LITERATURE REVIEWS

Molecular Biology and Evolution, *Apr 2009*

Genetics, *Feb 2008*

Biology Direct, *Oct 2007*

Biology Letters, *July 2007*

Sex Chromosome book chapter, *June 2007*

Trends in Genetics, *Jan 2007*

Biology Direct, *Dec 2006*