

## Joshua A Shapiro

**Bryn Mawr College &  
Princeton University**

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### RESEARCH INTERESTS

- Causes and consequences of genotypic and phenotypic diversity
- Genomic signatures of selection and demography
- Evolution of expression patterns and expression regulation
- Processes underlying population structure and speciation

### EDUCATION

**Ph.D. University of Chicago** Department of Ecology and Evolution 2007  
Dissertation: Selection and Structure in *Drosophila* Populations During the  
Process of Speciation  
Advisor: Dr. Chung-I Wu

**B.A. Williams College** Biology 1998  
*Summa Cum Laude* with Highest Honors  
Thesis: Population Structure and Gene Flow in Chorus Frog Tadpoles  
(*Pseudacris triseriata*) on North Government Island  
Advisor: Dr. David Smith

### RESEARCH EXPERIENCE

**Associate Professional Specialist** 2011-present

**Post-Doctoral Research Associate** 2006-2011

Lewis-Sigler Institute for Integrative Genomics, Princeton University

- Examined global diversity of yeast and nematodes using whole-genome polymorphism data.
- Conducted genome-wide association studies of gene expression variation in yeast.
- Developed and implemented analysis methods for SNP identification from multiplexed high-throughput sequencing and microarray hybridization.

Advisor: Dr. Leonid Kruglyak

**Graduate Research** 2000-2006

Department of Ecology and Evolution, University of Chicago

- Designed and analyzed large-scale sequencing study of *Drosophila* populations.
- Developed methods for the detection of adaptive evolution and population divergence.
- Examined gene expression changes in *Drosophila* species hybrids.

Advisor: Dr. Chung-I Wu

**Laboratory Technician** 2000

Department of Cell Biology, University of Virginia

- Oversaw maintenance of a transgenic mouse colony.
- Performed genetic analyses using standard molecular biological techniques.

Supervisor: Dr. P. Prabhakara Reddi

**Fulbright Scholar** 1999

Centre for Research on Introduced Marine Pests, CSIRO, Australia

- Conducted and analyzed field and laboratory studies of invasive marine organisms.

Supervisor: Dr. Craig Proctor

**Undergraduate Honors Research** 1997-1998

Department of Biology, Williams College

- Analyzed population structure of *P. triseriata* tadpoles using RAPD markers and tailfin morphology.
- Constructed a detailed map of the rock shore habitat using GIS software.

Advisor: Dr. David Smith

TEACHING  
EXPERIENCE

**Visiting Assistant Professor** Bryn Mawr College 2011-present

*Introduction to Genomics and Bioinformatics*

*Evolutionary Genetics and Genomics*

*Experimental Design and Statistics*

**Lecturer** Princeton University 2008-2009

*Genes, Health and Society*

**Guest Lecturer** Princeton University 2007

*Topics in Evolution*

**Guest Lecturer** University of Chicago 2005

*Population Genetics*

**Laboratory Instructor** University of Chicago 2002

*Ecology & Evolution*

**Teaching Assistant** University of Chicago 2001

*Grants, Publications & Professional Issues*

**Teaching Assistant** Williams College 1995-1998

*The Cell*

*Physiology*

**Teaching Assistant** Northfield Mount Hermon Summer Session 1995

*Marine Biology & SCUBA*

- PUBLICATIONS** EC Andersen\*, JP Gerke\*, **JA Shapiro\***, JR Crissman, R Ghosh, JS Bloom, M-A Félix, L Kruglyak (2012) Chromosome-scale selective sweeps shape *Caenorhabditis elegans* genomic diversity. *Nature Genetics* 44:285-290
- R Ghosh, EC Andersen, **JA Shapiro**, JP Gerke, L Kruglyak (2012) Natural variation in a chloride channel subunit confers avermectin resistance in *C. elegans*. *Science* 355:574-578
- X-M Lu\*, **JA Shapiro\***, C-T Ting, Y Li, C Li, J, Xu, Y-J Chen, AJ Greenberg, S-H Li, C-I Wu (2010) Genome-wide mis-expression of X-linked vs. autosomal genes associated with hybrid male sterility. *Genome Research* 20:1097-1102
- IM Ehrenreich, N Torabi, Y Jia, J Kent, S Martis, **JA Shapiro**, D Gresham, A Caudy, L Kruglyak (2010) Dissection of genetically complex traits with extremely large pools of yeast segregants. *Nature* 464:1039-1042
- J Schacherer\*, **JA Shapiro\***, DM Ruderfer, L Kruglyak (2009) Comprehensive polymorphism survey elucidates population structure of *Saccharomyces cerevisiae*. *Nature* 458:342-345
- MH Kohn, **JA Shapiro**, C-I Wu (2008) Decoupled differentiation of gene expression and coding sequence among *Drosophila* populations. *Genes & Genetic Systems* 83: 265-273
- JA Shapiro**, W Huang, C Zhang, J Lu, DA Turissini, S Fang, H-Y Wang, RR Hudson, C-I Wu (2007) Adaptive genic evolution in the *Drosophila* genomes. *Proceedings of the National Academy of Sciences USA* 104:2271-2276
- S Lee, J Bao, G Zhou, **JA Shapiro**, J Xu *et al.* (2005) Detecting novel low-abundant transcripts in *Drosophila*. *RNA* 11: 939-946
- PP Reddi, AM Shore, **JA Shapiro**, A Anderson, MH Stoler, KK Acharya (2003) Spermatid-specific promoter of the SP-10 gene functions as an insulator in somatic cells. *Developmental Biology* 262:173-182

\*Equal authorship contribution

**PRESENTATIONS**

Chromosome-scale selective sweeps shape *Caenorhabditis elegans* genomic diversity.  
 Evolution 2011, platform presentation

A survey of global *C. elegans* diversity by RAD-Seq.  
 2nd UK RAD Sequencing Meeting, August 2010, invited speaker

Selective effects of polymorphisms affecting gene expression in a global sample of *Saccharomyces cerevisiae*.  
 Annual Meeting of the Society for Molecular Biology and Evolution 2010, poster

Genome-wide association mapping of gene expression variation in *S. cerevisiae*.  
 Annual Meeting of the Society for Molecular Biology and Evolution 2009, poster

Association mapping of gene expression in *Saccharomyces cerevisiae*.  
 Gordon Research Conference on Quantitative Genetics 2009, poster

Analysis and mapping of gene expression variation in *Saccharomyces cerevisiae*.  
 Yeast Genetics and Molecular Biology Meeting 2008, poster

Gene expression variation in *Saccharomyces cerevisiae*  
 Evolution 2008, platform presentation

Population structure and evolutionary history of *Saccharomyces cerevisiae*.  
 Cold Spring Harbor Labs: The Biology of Genomes 2007, poster

Genetic differentiation between behavioral races of *Drosophila melanogaster*.  
 Drosophila Research Conference 2005, platform presentation

Changes in gene expression associated with *Ods* introgression-induced hybrid male sterility.  
 Drosophila Research Conference 2004, poster

**HONORS,  
 AWARDS &  
 AFFILIATIONS**

Post-Doctoral Poster Prize, Annual Meeting of the Society for Molecular Biology and Evolution 2009

Howard Hughes Medical Institute Pre-Doctoral Fellowship in Biological Sciences 2001-2006

NSF Graduate Research Fellowship (Declined) 2000

Honorable Mention NSF Graduate Research Fellowship 1999

Fulbright Award (U.S. Student Program) Full grant to Australia 1999

Erastus C Benedict Prize in Biology, Williams College 1998

Phi Beta Kappa

Sigma Xi

Genetics Society of America

Society for the Study of Evolution

Society for Molecular Biology and Evolution