Curriculum Vitae

**PATRICIA** **J.** **WITTKOPP (née Polaczyk)**

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**Research Interest:** Understanding the genetic basis of development and evolution, with an emphasis on the molecular mechanisms controlling gene expression

**Education**:

1997-2002 Ph.D. in Genetics

University of Wisconsin, Madison, WI

Advisor: Dr. Sean Carroll

1993-1997 B.S. in Cellular and Molecular Biology (with “Highest Honors” and distinction)

B.S. Chemistry (with distinction)

 University of Michigan, Ann Arbor, MI

 Advisor: Dr. Greg Gibson

**Academic appointments:**

2011 - Associate Professor of Ecology and Evolutionary Biology (with tenure)

Associate Professor of Molecular, Cellular, and Developmental Biology

University of Michigan, Ann Arbor, Michigan

2005- Member, Program in the Biomedical Sciences

Member, Center for Computational Medicine and Biology

Member, Center for Statistical Genetics

Trainer, NIH Genome Sciences Training Grant

Trainer, NIH Genetics Training Grant

Trainer, NIH Organogenesis Training Grant

2005-2011 Assistant Professor of Ecology and Evolutionary Biology

Assistant Professor of Molecular, Cellular, and Developmental Biology

University of Michigan, Ann Arbor, Michigan

2002-2005 Damon Runyon Cancer Research Foundation Postdoctoral Fellow

Cornell University, Ithaca, NY

Advisor: Dr. Andrew Clark

**Honors and Awards**:

2013 Work/Life Champion Award for Supervisors (University of Michigan)

2013 2013 Excellence in Education Award (University of Michigan)

2011 Class of 1923 Memorial Teaching Award (University of Michigan)[[1]](#footnote-2)

2010 Henry Russel Award (University of Michigan)[[2]](#footnote-3)

2009 Semi-finalist, Howard Hughes Medical Institute Early Career Award

2008 “Scientist to Watch”, *The Scientist*

2008 Institutional nominee for Packard Award

2008-2010 Alfred P. Sloan Research Fellow

2007-2009 March of Dimes Basil O’Connor Starter Scholar Research Award

2006 Institutional nominee for Searle Scholar Award

2003-2006 Damon Runyon Cancer Research Foundation Postdoctoral Fellow

2003 American Cancer Society Postdoc Fellowship (ranked 1st in section prior to withdrawal)

2003 National Institutes of Health NRSA Postdoctoral Fellowship (Declined)

2000 Best Poster award at the 9th Annual "Egg to Organ" Symposium

1998-2001 National Institutes of Health Genetics Training Grant

1998 Henry Vilas Fellowship

1998 National Science Foundation Predoctoral Fellowship Honorable Mention

1997-1998 Wisconsin Alumni Research Foundation Fellowship

1993-1997 W.R. Hotchkiss Foundation Scholarship

**Publications**: *undergraduate co-authors in italics,* corresponding author(s) indicated with asterisks

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|  |
| 1. Coolon, J.D., C.J., McManus, K. Stevenson, B.R. Graveley, and **P.J. Wittkopp\*.** (2014) Tempo and mode of regulatory evolution in *Drosophila*. *Genome Research, in press.*
2. McManus, C.J.\*, J.D. Coolon, J. Eipper-Mains, **P.J. Wittkopp**, and B.R. Graveley\* (2014) Evolution of Splicing Regulatory Networks in Drosophila. *Genome Research, in press.*
3. Coolon, J.D.\*, W. Webb, and **P.J. Wittkopp**. (2013) Sex-specific effects of *cis*-regulatory variants in *Drosophila* *melanogaster*. *Genetics* **195**, 1419-22.
4. He, B.Z.\*, M.Z. Ludwig, D.A. Dickerson, L. Barse, B. Arun, S-Y. Park, N.A. Tamarina, S.B. Selleck, **P.J. Wittkopp**, G.I. Bell, and M. Kreitman\* (2013) Effect of Natural Genetic Variation on Phenotype in a Drosophila Model of Diabetes-Associated Misfolded Human Proinsulin.*Genetics, Nov 26. [Epub ahead of print]*
5. Meiklejohn, C. D\*., Coolon, J., D. L. Hartl, and **P. J. Wittkopp**. (2013) The roles of *cis-* and *trans-*regulation in the evolution of regulatory incompatibilities and sexually dimorphic gene expression. *Genome Research, Nov 26. [Epub ahead of print]*
6. Stevenson, K., J.D. Coolon, and **P.J., Wittkopp**. (2013) Sources of bias in measures of allele-specific expression derived from RNA-seq data aligned to a single reference genome. *BMC Genomic*s, **14**, 536.

“Highly accessed”Selected by Faculty of 10001. **Wittkopp, P.J.** (2013) Population Genetics and a Study of Speciation using Next-Generation Sequencing: An Educational Primer for Use with “Patterns of Transcriptome Divergence in the Male Accessory Gland of Two Closely Related Species of Field Crickets”. *Genetics* **193,** 671-5*.*

Invited educational primer1. Coolon, J.D. and **P.J. Wittkopp**\*. (2012) “*cis*- and *trans*-regulation in interspecific *Drosophila* hybrids” in *Polyploid and Hybrid Genomics*, Wiley-Blackwell Publishing. Editors: Z. Jeffrey Chen and Jim Birchler, *in press.*

Invited book chapter1. Coolon, J.D.\*, K. Stevenson, C.J., McManus, B. Graveley, and **P.J. Wittkopp.** (2012) Genomic imprinting absent in *Drosophila melanogaster* adult females, *Cell Reports,* **2**, 69-75*.* PMID: 22840398
 |
|  |
| 1. Gruber, J.D., *K. Vogel*, G. Kalay, and **P.J. Wittkopp\*.** (2012) Contrasting Properties of Gene-specific Regulatory, Coding, and Copy Number Mutations in *Saccharomyces cerevisiae*: Frequency, Effects and Dominance*. PLoS Genetics,* **8***,* e1002497. PMCID: PMC3276545

Selected by Faculty of 1000 |
| 1. **Wittkopp, P.J.\*,** and G. Kalay. (2011) *cis*-regulatory elements: molecular mechanisms and evolutionary processes underlying divergence. *Nature Reviews Genetics* **13**, 59-69.

Invited Review1. **Wittkopp, P.J.\*** (2011) Using pyrosequencing to measure allele-specific mRNA abundance and infer the effects of *cis*- and *trans*-regulatory differences. *Methods Mol Biol.* **772**, 297-317.

Invited book chapter |
| 1. **Wittkopp, P.J.\*** (2011) “Evolution of Gene Expression” in *The Princeton Guide to Evolution*, Editor-in-chief, Jonathan Losos; Section editor, Hopi Hoekstra, *in press*.

Invited book chapter |
| 1. Kalay, G. and **P.J. Wittkopp\*.** (2010) Nomadic enhancers: tissue-specific *cis*-regulatory elements of the *yellow* gene changed genomic locations during *Drosophila* evolution. *PLoS Genetics*, **6**, e1001222. PMCID: PMC2996884
 |
| 1. **Wittkopp, P.J.\***, *G. Smith-Winberry*, L.L. Arnold, *E.M. Thompson,* A.M. Cooley, D. Yuan, Q. Song, and B.F. McAllister (2010). Local adaptation for body color in *Drosophila americana*. *Heredity* **106**, 592-602. PMCID: PMC3183901
 |
| 1. **Wittkopp, P.J.\*** (2010). Variable transcription factor binding: a mechanism of evolutionary change. *PLoS Biology*, **8**, e1000342*.* PMCID: PMC2843594

Invited Primer |
| 1. McManus, C.J.,J. Coolon, M. Duffy, J. Eipper-Mains, B. Graveley\*, and **P.J. Wittkopp\*** (2010) Regulatory divergence in *Drosophila* revealed by mRNA-Seq, *Genome Research*, **20**, 816-25*.* PMCID: PMC2877578

Selected by Faculty of 1000 |
| 1. Fontanillas, P.\*,C.R. Landry, **P.J. Wittkopp**, C. Russ, J.D. Gruber, and D.L. Hartl (2009). Key considerations for measuring allelic expression on a genomic scale using high-throughput sequencing. *Molecular Ecology,* **19** (Suppl. 1), 212–227.PMCID: PMC3217793

*Next Generation Molecular Ecology special issue* |
| 1. **Wittkopp, P.J.\***, *E.E. Stewart*, L.L. Arnold,A.H. Neidert, B.K. Haerum, *E.M. Thompson*, *S. Akhras, G. Smith-Winberry* and *L. Shefner* (2009). Connecting intraspecific polymorphism to interspecific divergence: genetics of pigmentation evolution in *Drosophila*, *Science,* **326**, 540-544.

Selected by Faculty of 1000Selected as a “Research Highlight” by *Nature Genetics* (2009) **41**, 1267 “Today’s top science news” story on ScienceDaily, October 25, 2009.Highlighted in “Spineless fish and dark flies prove gene regulation crucial.” *Science* (2009) 326:1612. |
| 1. **Wittkopp, P.J.** and P. Beldade\* (2009) Development and evolution of insect pigmentation: genetic mechanisms and the potential consequences of pleiotropy, *Seminars in Cell and Developmental Biology**,* **20**, 65-71.

Invited, *Pigment Cell Development special issue*  |
| 1. **Wittkopp, P.J.\*** *B.K. Haerum*, and A.G. Clark. (2008). Independent effects of *cis*- and *trans*-regulatory variation on gene expression in *Drosophila melanogaster,* *Genetics* **178**, 1831-5. PMCID: PMC2278090
 |
| 1. **Wittkopp, P.J**.\*, *B.K. Haerum*, and A.G. Clark. (2008) Genetic basis of regulatory variation within and between *Drosophila* species.*Nature Genetics* **40**,346-50*.*

Selected by Faculty of 1000 |
| 1. Davis, GK, Srinivasan, D, **Wittkopp, PJ** and DL Stern\* (2007) The function and regulation of *Ultrabithorax*in the legs of *Drosophila* *melanogaster. Developmental Biology* **308**, 621-631. PMCID: PMC2040266
2. Kohn, M.H. and **P.J. Wittkopp**. (2007) Annotating *ebony* on the fly. *Molecular Ecology,* **16**, 2831-3.

Invited commentary1. **Wittkopp, P.J.\*** (2007) Evolutionary genetics: how flies get naked. *Current Biology* **17**, R881-3.

Invited commentary |
| 1. **Wittkopp, P.J.\*** (2007). Variable gene expression in eukaryotes: a network perspective. *Journal of Experimental Biology,* **210**, 1567-1575.

Invited, *Post-genomic Comparative Physiology special issue* |
| 1. Fay, J.C.\* and **P.J. Wittkopp** (2007). Evaluating the role of natural selection in the evolution of gene regulation. *Heredity,* **100**, 191-199

Invited, *Ecological and Evolutionary Functional Genomics special issue* |
| 1. **Wittkopp, P.J.**\*, *B.K. Haerum*, and A.G. Clark (2006). Parent-of-origin effects on mRNA levels in *Drosophila melanogaster* are not caused by genomic imprinting. *Genetics*, **173**, 1817-1821. PMCID: PMC1526670
 |
| 1. **Wittkopp, P.J.\*** (2006) Evolution of *cis*-regulatory sequence and function in diptera. *Heredity* **97**, 139-147

Invited, *Evolution and Development (EvoDevo) special issue* |
| 1. Landry, C.R, **P.J.** **Wittkopp**, C. Taubes, J.M. Ranz, A.G. Clark, and D.L. Hartl (2005). Compensatory *cis-trans* regulation and dysregulation of gene expression in hybrids between species. *Genetics* **171**, 1813-1822. PMCID: PMC1456106

Selected by Faculty of 1000 |
| 1. **Wittkopp, P.J.\*** (2005) Genomic sources of regulatory variation in *cis* and in *trans*. *Cellular and Molecular Life Sciences* **62**, 1779-83.

Invited, “Visions & Reflections” |
| 1. Gompel, N, B. Prud’homme, **P.J. Wittkopp**, V.A. Kassner, and S.B. Carroll\* (2005) Chance caught on the wing: *cis*-regulatory evolution and the origin of pigment patterns in *Drosophila*. *Nature* **433**, 481-487*.*

Selected by *Nature* as one of “15 Evolutionary Gems” (2009)Featured in 2005 Breakthrough of the year: Evolution in action, *Science* 310, 1878-1879News and Views by Brakefield and French, *Nature* 433, 466-467Selected by Faculty of 1000 |
| 1. **Wittkopp, P.J**.\*, *Haerum, B.K.* and A.G. Clark (2004) Evolutionary divergence of *cis* and *trans* gene regulation. *Nature*, **430**, 85-88.

Selected by Faculty of 1000Featured in Briefings in Bioinformatics 5, 370-377  |
| 1. **Wittkopp, P.J**., S.B. Carroll\*, and A. Kopp (2003) Evolution in Black and White: Genetic control of pigment patterns in *Drosophila*. *Trends in Genetics*, **19**, 495-504.

Cover article |
| 1. **Wittkopp, P.J**, B.L. Williams, J.E. Selegue, and S.B. Carroll\* (2003) *Drosophila* pigmentation evolution: divergent genotypes underlying convergent phenotypes. *Proc Natl Acad Sci U.S.A.*, **100**, 1808-1813 PMCID: PMC149915

Featured in *Nature Reviews Genetics* Research Highlights section, April 2003 |
| 1. Drapeau, M.D.\*, A. Radovic, **P.J. Wittkopp**, and A. Long (2003) A gene necessary for normal male courtship, *yellow*, acts downstream of fruitless in the *Drosophila* *melanogaster* larval brain. *J. of Neurobiology*, **55**, 53-72.
 |
| 1. **Wittkopp, P.J.,** K. Vaccaro and S.B. Carroll\* (2002) Evolution of *yellow* gene regulation and pigmentation patterns in *Drosophila*. *Current Biology*, **12**, 1547-1556.

Cover articleFeatured in *Nature Reviews Genetics* Research Highlights section, November 2002 |
| 1. Radovic, A, **P.J. Wittkopp**, A.D. Long, and M.D. Drapeau\* (2002) Immunohistochemical colocalization of Yellow and male-specific Fruitless in *Drosophila melanogaster* neuroblasts. *Biochemical and Biophysical Research Communications*, **293**, 1262-1264.
 |
| 1. **Wittkopp, P.J.**, J.R. True, and S.B. Carroll\* (2002) Reciprocal functions of the *Drosophila* Yellow and Ebony proteins in the development and evolution of pigment patterns. *Development*, **129**, 1849-1858.

Cover article |
| 1. Halder G. H., **P. J.** **Polaczyk**, M.E. Kraus, A. Hudson, J. Kim, A. Laughon, and S.B. Carroll\* (1998) The Vestigial and Scalloped proteins act together to directly regulate wing-specific gene expression in response to signaling proteins. *Genes & Development*, **12**:3900-3909.

Co-first authorship |
| 1. ***Polaczyk, P.J.***, R. Gasparini, and G. Gibson\* (1998) Naturally occurring genetic variation affects *Drosophila* photoreceptor determination. *Development, Genes & Evolution* **207**, 462-470.

Cover Article |

***In preparation:***

Metzger,B.P.H.\*, D.C. Yuan\*, J.D. Gruber, F. Duveau and **P.J. Wittkopp**. Contrasting cis-regulatory effects of mutations and polymorphisms to test for selection. \* co-first authorship

Duveau, F., B.P.H. Metzger, J.D. Gruber, K. Mack, N. Sood, T. Brooks and **P.J. Wittkopp**. Mapping small effect mutations in *Saccharomyces cerevisiae*: impacts of experimental design and mutational properties.

Kalay, G., R. Lusk, M. Dome, K. Hens, B. Deplancke and P.J. Wittkopp. A yeast one-hybrid screen identifies putative regulators of the *Drosophila* pigmentation gene *yellow*.

Sramkoski, L, W. McLaughlin, A. Cooley, D. Yuan, A. John and P.J. Wittkopp. Genetic heterogeneity underlying locally adapted body color in *Drosophila americana.*

Kalay, G., M. Dome, R. Lusk, U. Rosas, Weng, X and P.J. Wittkopp. Latent enhancer activities facilitate divergent cis-regulatory activity.

Sramkoski, L, K.R. Stevenson and P.J. Wittkopp Impact of online pre-class quizzes on student learning in a large lecture course.

**Other peer-reviewed papers published by lab members**

1. Lusk, R.W., (2013) Diverse and widespread contamination evident in the unmapped depths of high throughput sequencing data.

**Peer-reviewed Educational Resources**

1. Bakewell, M.A. and P.J. Wittkopp (2013). Basic Probability and Chi-Squared Tests*. Genetics Society of America Peer-Reviewed Education Portal (GSA PREP)*. Retrieved from http://www.genetics-gsa.org/education/education\_resource\_Probability\_chi\_square\_ 11\_01\_2013.shtml

**Research from published work is discussed in the following textbooks:**

2001 *From DNA to Diversity: Molecular genetics and the evolution of animal design* by S.B. Carroll, J.K. Grenier, S.D. Weatherbee (Blackwell Science)

2005 *Evolution* by D.J. Futuyma (Sinauer Associates, Inc)

2006 *Introduction to Genetic Analysis, 9th edition* by Griffiths, Wessler, Lewontin, and Carroll (W.H. Freeman and company)

**Presentations**

**Invited participation in international workshops and working / discussion groups:**

2010Molecular Underpinnings linkingEvolution and Development Workshop

Howard Hughes Medical Institute (Chevy Chase, MD)

2008 Program on “Population Genetics and Genomics”

 Kavali Institute for Theoretical Physics, (Santa Barbara, CA)

2008 Organization of Biological Networks (Schedule conflict)

 Institute for Mathematics and its Applications (Minneapolis, MN)

2008-09 “Trait loss and relaxed selection”, Working group

National Evolutionary Synthesis Center (Durham, NC)

2007 “From Statistics to Genes: Figuring out the Molecular Basis of Complex Traits”

 Banbury Center, Cold Spring Harbor Laboratory (Lloyd Harbor, NY)

2007 Program on “Evolution of Molecular Networks”

Kavli Institute for Theoretical Physics, (Santa Barbara, CA)

2007-08 “Modeling variation in gene networks”, Working group

National Evolutionary Synthesis Center (Durham, NC)

2006 “Post-Genomic Comparative Physiology”, Discussion meeting

*Journal of Evolutionary Biology* (Banff, Canada)

**Invited departmental seminars and conference presentations:**

2014 Symposium honoring Andrew G. Clark, Cornell University, Ithaca, NY

Society of Molecular Biology and Evolution, Puerto Rico

Arthropod Genomics Symposium, Urbana, IL, *Keynote Speaker*

Department of Biology, SUNY-Binghamton University, Binghamton, NY

 Genetics Training Program, University of Iowa, Iowa City, IA

 Genetics Training Program, University of Michigan, Ann Arbor, MI

2013 University of Utah, Genetics Training Program Retreat, Snowbird, UT, *Keynote speaker*

Center for Integrative Genomics Symposium, Lausanne, Switzerland

EMBO/EMBL Symposium: New model systems for linking evolution and ecology, Heidelberg, Germany

University of Arizona IGERT (Genomics) Symposium, Tucson, AZ

University of Dayton, Dayton, OH (Last minute conflict)

2012 Ecological Genomics Symposium, Kansas City, KS

Society of Molecular Biology and Evolution, Dublin, Ireland

Department of Genetics, North Carolina State University, Raleigh, NC

CNRS, Institut Jacques Monod, Paris, France

Society of Developmental Biology, Montreal, Canada

The Biology of Genomes, Cold Spring Harbor Labs, Cold Spring Harbor, NY

Jacques Monod Conf: Theoretical and empirical advances in evolutionary genomics, Roscoff, France

 Evolution, Development and Genomics: The future of Evo-Devo, Eugene, OR (Schedule conflict)

Department of Evolution, Ecology and Organismal Biology, Ohio State University, Columbus, OH

 Department of Biology, Georgia Tech University, Atlanta, GA

 Department of Biology, Emory University, Atlanta, GA

2011 Department of Microbiology, Michigan State University, East Lansing, MI

Department of Human Genetics, University of Chicago, Chicago, IL

Institute for Genomics & Systems Biology, University of Chicago, Chicago, IL, *student invited speaker*

Department of Genetics, Harvard Medical School, Cambridge, MA (Schedule Conflict)

Transcriptional Dynamics, Evolution, and Systems Biology, East Lansing, MI (Schedule Conflict)

Department of Genome Sciences, University of Washington, Seattle, WA

Department of Organismal and Evolutionary Biology, Harvard University, Cambridge, MA

Keystone Symposia: Evolutionary Developmental Biology, Tahoe, City, CA

 52nd Annual Drosophila Research Conference, San Diego, CA, *Plenary presentation*

2010 Department of Biological Sciences, Stanford University, Stanford, CA

European EvoDevo meeting, Population Genetics/EvoDevo, Paris, France (Schedule conflict)

Howard Hughes Medical Institute, Evolution and Development Conference, Chevy Chase, MD

17th EMBO Drosophila Workshop, Kolymbari, Crete, Greece

Department of Biology, University of Oregon, Eugene, OR

Biological Sciences Seminar, Bowling Green State University, Bowling Green, OH

Genetics Department, 100th anniversary seminar series, U. Wisconsin, Madison, WI

Genetics, Genomics & Development Division, U.C. Berkeley, CA

Center for Research on Learning and Teaching, University of Michigan, Ann Arbor, MI

2009 Honors Kickoff 2009, University of Michigan, Ann Arbor, MI

Evolutionary Biology at the Zoological Institute, Universitat Basel, Basel, Switzerland

National Institute of Genetics, Mishima, Japan

University of Illinois, Department of Entomology, Urbana-Champaign, IL

Max Planck Institute for Plant Breeding Research, Dept of Plant Devel Bio, Cologne, Germany

Darwin Symposium, Queen’s College, Flushing, NY

Princeton University, Department of Biology, Princeton, NJ

"Evolution of Molecular Function” Symposium at 2009 SSE meeting (Schedule conflict)

The Japanese Drosophila Research Conference (Kobe, Japan) (Schedule conflict)

Gordon Research Conference: Developmental Biology, Andover, N.H (Schedule conflict)

Gordon Research Conference: Microbial Population Biology, Andover, NH

Gordon Research Conference: Quantitative Genetics and Genomics Galveston Island, TX

3rd Insect Genomics Symposium, Riken CDB, Kobe, Japan

2008 16th EMBO Drosophila Workshop, Kolymbari, Crete, Greece

RECOMB Satellite Workshop on Comparative Genomics, Paris, France, *Keynote presentation*

National Association of Biology Teachers, Memphis, TN

Integrative Post-Genomics Symposium, Lyon, France, *Keynote presentation*

University of Rochester, Department of Biology, Rochester, NY

7th Annual Genomics Symposium, NYU Genomics and Systems Biology, New York, NY

Symposium on Transcriptional Regulation and Systems Biology, East Lansing, MI

Society of Molecular Biology and Evolution, Barcelona, Spain

Gordon Research Conference: Molecular Evolution, Ventura, CA

1. Indiana University, Biology Department, Bloomington, IN

*Graduate Student Invited speaker*

Gordon Research Conference: Ecol and Evol Funct Genomics, Newport, RI (Discussion leader)

University of Notre Dame, Biology Department, South Bend, IN

University of Maryland Baltimore County, Baltimore, MD

Eastern Great Lakes Molecular Evolution meeting, Toronto, ON, Canada

 University of Michigan, Department of Cell and Developmental Biology, Ann Arbor, MI

 University of Michigan, Center for Statistical Genetics, Ann Arbor, MI

2006 University of Chicago, Department of Ecology and Evolution, Chicago, IL

Wayne State University, Department of Biological Sciences, Detroit, MI

4th annual Ecological Genomics Symposium, Kansas City, KS

 *Graduate Student Invited speaker*

Duke University, Evolution and Development Group, Durham, NC

*Graduate student invited “Super Speaker”,* 2 seminars

Genomics of Closely Related Organisms, IGERT Symposium, Tucson, AZ

2005 Gordon Research Conference: Evolutionary and Ecological Functional Genomics, Oxford, UK

Genomes Evolving Symposium, University of California, San Diego, CA

2004 University of Michigan, Dept. of Molecular, Cellular, and Developmental Biology, Ann Arbor, MI

University of Michigan, Department of Ecology and Evolutionary Biology, Ann Arbor, MI

Harvard University: Population and Evolutionary Genetics Seminar Series, Cambridge, MA

The Evolution of Gene Regulation, an IGERT Symposium, Eugene, OR

Cornell Ecology and Evolutionary Biology Annual Symposium, Ithaca, NY

Regional SDB meeting “Evolution and Development” section, Woodshole, MA

University of Rochester, Department of Biology, Rochester, NY

2002 Wayne State University, Department of Biological Sciences, Detroit, MI

**Contributed Presentations:** (\*selected for oral presentation)

2009 \*Evolutionary Transcriptomics symposium, ESEB 2009, Turin, Italy

2007 \*European Society for Evolutionary Biology, Uppsala, Sweden

Gordon Research Conference: Ecol and Evol Funct Genomics, Newport, RI

\*48th Annual Drosophila Research Conference, Philadelphia, PA

2006 Origin of Novel Features, an IGERT symposium, Bloomington, IN

\*Evolution (SSE/SSB/ASN Annual meeting), Stony Brook, NY

 Society of Developmental Biology, Ann Arbor, MI

2005 Developmental Basis of Evolutionary Change, U. Chicago, IL

46th Annual Drosophila Research Conference, San Diego, CA

2004 \*Genomes and Evolution Conference, SMBE annual meeting, State College, PA

45th Annual Drosophila Research Conference, Washington DC

2003 \*44th Annual Drosophila Research Conference, Chicago, IL

Gordon Research Conference: Ecol and Evol Functional Genomics, New London, NH

2002 The Microevolution of Development, an IGERT Symposium, Eugene, OR

2001 \*Annual meeting for the Society of Developmental Biology, Seattle, WA

\*42nd Annual Drosophila Research Conference, Washington DC

Symposium on the Developmental Basis of Evolutionary Change, Chicago, IL

2000 9th Annual Symposium in the "Egg to Organ" series, St. Paul, MN

1999 Keystone Symposium: Specificity in Signal Transduction, Keystone, CO

1997 38th Annual Drosophila Research Conference, Chicago, IL

**Session chair or Discussion leader:**

2012 The Biology of Genomes, Cold Spring Harbor Labs, Cold Spring Harbor, NY

 “Evolutionary Genomics”

2011 Keystone Symposia: Evolutionary Developmental Biology, Tahoe, City, CA

1. 49th Annual Drosophila Research Conference, San Diego, CA

“Evolution and Quantitative Genetics”

2007 Banbury Center, Cold Spring Harbor Laboratory, Lloyd Harbor, NY

 “From Statistics to Genes: Figuring out the Molecular Basis of Complex Traits”

Gordon Research Conference: Ecol and Evol Funct Genomics, Newport, RI

“Transcription and Evolution”

**Symposia and workshops organized:**

2013 Evo Devo Workshop, NESCent (Durham, NC)

 (primary organizer Cassandra Extavour)

2011 Keystone Symposium: Evolutionary Developmental Biology

(co-organized with Sean Carroll and Nicole King)

2008 University of Michigan Early Career Scientist Symposium

(co-organized with Annette Ostling)

2006 University of Michigan Early Career Scientist Symposium

(co-organized with Jianzhi Zhang and Priscilla Tucker)

**Grants and Fellowships**

**Research:**

2013-2017 National Institutes of Health [1 R01 GM108826]

 Evolution of Gene Expression in Yeast

 P.I., ($1,151,793)

2010-2015 National Institutes of Health [1 R01 GM089736-01A1]

Evolutionary Genetics: Contribution of Tan to Drosophila Pigmentation Divergence

 P.I., ($1,332,843)

2010-2013 National Science Foundation [MCB-1021398]

 The evolution of gene expression: molecular mechanisms and inheritance patterns revealed on a genomic scale with next-generation sequencing, P.I. ($733,334)

 2011 REU supplement ($7000)

2013-2015 European Molecular Biology Organization postdoctoral fellowship [EMBO ALTF 1114-2012]

 *Postdoctoral fellowship for Fabien Duveau*

 Genomic profile of new regulatory mutations in *Saccharomyces cerevisiae*

Sponsor, ($80,472.00)

2012-2014 National Research Service Award National Institutes of Health [1-F32-GM-100685-01-A1]

 *Postdoctoral fellowship for Dr. Richard Lusk*

Linking sequence to expression using binding diversity in interspecies hybrids

Sponsor, ($101,404.00)

2010 - 2012 National Research Service Award National Institutes of Health [1F32-GM089009-01A1]

*Postdoctoral fellowship for Dr. Joseph Coolon*

Using next-generation sequencing to understand the evolution of gene regulation

Sponsor, ($94,758)

2009 - 2012 National Research Service Award National Institutes of Health [1F32GM087928-01]

*Postdoctoral fellowship for Dr. Arielle Cooley*

Characterizing functional variants in natural populations of Drosophila

Sponsor, ($142,137)

2008 Margaret and Herman Sokol Endowment for Faculty and Graduate Student Research Projects in the Sciences, Office of the Vice President for Research and the Horace H. Rackham School of Graduate Studies ($4000)

2008 - 2012 Alfred P. Sloan Research Fellowship ($50,000)

2008 - 2011 National Research Service Award National Institutes of Health [1 F32 GM083513-0]

*Postdoctoral fellowship for Dr. Jonathan Gruber*

"Investigating compensatory mechanisms for gene expression in the yeast genome" Sponsor, Sponsor, ($141,318)

2007-2010 National Science Foundation [DEB-0640485]

 “Genetic basis of pigmentation evolution in Drosophila”, P.I. ($450,000)

 2007 REU supplement ($6000)

 2008 REU supplement ($6000)

2007-2010 March of Dimes Basil O’Connor Starter Scholar Research award [5-FY07-181]

 “The genetic basis of abnormal gene expression”, P.I. ($150,000)

2006-2007 Rackham Graduate School (University of Michigan) [G005283]

 “Genomic sources of altered gene expression”, P.I. ($15,000)

2006 Whitaker II award, Department of Ecology and Evolutionary­ Biology, (University of Michigan), P.I. ($300)

**Teaching:**

2011 CRLT Investigating Student Learning Grant (U. Michigan), PI ($4,000)

 “Evaluating Techniques to Improve Student Learning in a Large Lecture Genetics Course”

2007-2008 CRLT Large Lecture Course Grant (U. Michigan), co-PI ($22,500)

 “Energizing Genetics: Incorporating active and cooperative learning into a large lecture course”

2006 LSA “Teaching with technology” mini-grant (University of Michigan), P.I. ($2,000) “Presenting Interactive Lectures Using a Tablet PC”

**Teaching and Mentoring**

**Courses:**

2014-2015 Introduction to Ecology and Evolutionary Biology (Biology 171)

Genetics, Development, and Evolution (EEB404/MCDB404)

2013-2014 Genetics (Biology 305)

 *Guest Lecture*: Molecular Evolution (EEB512)

 *modified duties (teaching reduction) W2014 due to birth of a child*

2012-2013 Evolutionary Genetics seminar (EEB800, 15 grad students and postdocs, 7 enrolled, E&EQ2: 4.8)

 *sabbatical (teaching release) W2013*

2011-2012 Genetics (Biology 305, 412 students, E&E Q2: 4.11)

 Principles of Evolution (EEB516, 23 students, E&EQ2: 4.57)

 Genetics, Development, and Evolution (EEB404/MCDB404, 34 students, E&E Q2: 4.94)

 Independent study: Chuan Li (Zhang lab), EEB730

*Guest lecture*: Human Genetics Training Grant Seminar (HG632), Molecular Evolution (EEB512)

2010-2011 Genetics (Biology 305, 419 students, E&E Q2: 4.24/5)

 Principles of Evolution (EEB516, 13 students), E&E Q2: 4.88/5)

2009-2010 Genetics (Biology 305), 450 students (E&E Q2: 3.98/5)

 *modified duties (teaching reduction) W2010 due to birth of a child*

2008-2009 *pre-tenure teaching release*

2007-2008 Genetics (Biology 305), 430 students, (E&E Q2: 4.22/5, *highest for faculty in ≥ 7 years*)

 Genetics, Development and Evolution (EEB404/MCDB404), 35 students (E&E Q2: 4.95/5)

 *Guest lecture:* Developmental Biology (CDB580)

 Molecular Evolution (EEB512)

2006-2007 Genetics (Biology 305), 400 students (E&E Q2: 3.83/5)

 Genetics, Development, and Evolution (EEB 401), 22 students (E&E Q2: 4.93/5)

 20 undergraduate, 2 graduate students

 Model Systems (MCDB 614) (*Drosophila* module), 19 students

 *Guest lecture*: Genetic Analysis (Human Genetics 632), 15 students

2005-2006 Genetics (Biology 305), 300 students (E&E Q2: 3.86/5.0, *highest for faculty in* *≥ 5 years*)

 *Guest lecture*: Principles of Evolution (Biology 516), 20 students

**Participation in teaching/mentoring seminars and discussion groups:**

2013 Member of CRLT Special Interest Group on Teaching with Technology (U. Michigan)

2012 Panelist: The Art of Leading a Research Group (U. Michigan)

2012 Panelist: CRLT session on assessing student learning online (U. Michigan)

2011 Panelist: The Art of Leading a Research Group (U. Michigan)

2011 Advisor: Large Lecture Course Initiative (CRLT, U. Michigan)

2011 Invited speaker: Managing tasks and yourself (Genome Sciences Training Program Retreat, U. Mich)

2011 MORE Mentoring Plan Workshop (with Kraig Stevenson)

2010 Panelist: Mentoring and Graduate Teaching: Managing a Lab (U. Michigan LSA Teaching Academy)

2010 Invited speaker for CRLT program on learning assessment tools

2007 Life Sciences Learning Community, discussion group (organized by D. Klionsky)

2007 “The Vanishing professor? The changing role of faculty in the world of pod-casting and lecture posting”, CRLT seminar

2006 “Authority and credibility in the classroom”, CRLT seminar

2006 Teaching with technology lecture series:

 Engaging students in problem-based learning

 Making “group work” work: effective activities for groups

2005 “Evolution: Using new resources for teaching complex issues”, CRLT seminar

**Students:**

Post-doctoral

 Fabien Duveau (2012-) Ph.D. from CNRS, Paris, France, advisor Dr. Marie-Anne Felix

 *Funded by EMBO fellowship*

Gizem Kalay (2012-2013) Ph.D. from U. Michigan, advisor Dr. Patricia Wittkopp

 *Continuation of graduate studies*

Richard Lusk (2011-), Ph.D. from UC Berkeley, advisor Dr. Michael Eisen

 *Funded by NIH NRSA fellowship*

Arielle Cooley (2009-2012), Ph.D. from Duke University, advisor Dr. John Willis

 *Funded by NIH NRSA fellowship*

 *Assistant Professor, Whitman College, starting August 2012*

Joseph Coolon (2008-), Ph.D. from Kansas State U., advisor Dr. Michael Herman

 *Funded by NIH NRSA fellowship*

Jonathan Gruber (2008-2012), Ph.D. from U. California – Irvine, advisor Dr. Anthony Long

 *Funded by NIH NRSA fellowship*

 *Bioinformatics Scientist, Monsanto*

Visiting postdoctoral scholar

 Ulises Rosas (2009), Ph.D. from John Innes Centre, advisor Dr. Enrico Coen

 *Funded by Darwin Award from British Council*

Graduate

 José M. Andrade López (2013-), M.S. student, MCDB Pathways

Alisha John (2012- ), Ph.D. student, PIBS/Molecular, Cellular, and Developmental Biology

Bing Yang (2012-), Ph.D. student, Molecular, Cellular, and Developmental Biology

Kraig Stevenson (2010-), Ph.D. student, Bioinformatics

 *NIH IGERT Open Data Fellowship (2009-2011)*

Brian Metzger (2010-), Ph.D. student, Ecology and Evolutionary Biology

 *Rackham Merit Fellowship, NIH Genome Sciences Training Grant*

Dave Yuan (2009-), Ph.D. student, PIBS/Molecular, Cellular, and Developmental Biology

*NIH Genetics Training Grant (2009-2011)*

 Lisa (Arnold) Sramkoski (2007-2012), Ph.D. student, Molecular, Cellular, and Developmental Biology

Gizem Kalay (2006-2012), Ph.D. student, Molecular, Cellular, and Developmental Biology

 *Postdoctoral researcher with Susan Lott, University of California - Davis*

Elliott Howell (2007-2008), Ph.D. student, Ecology and Evolutionary Biology

Erin Shellman (2006), Master’s student, Biostatistics Department

Additional graduate rotation students

 Jiyuan Yang (Winter 2014), MCDB

 Abigail Lamb (Winter 2014), MCDB

 Chetna Gopinath (Fall 2013), PIBS

 William Webb (Fall 2010), EEB Frontiers MS program

 Mairin Balisi (Fall 2009), EEB Frontiers MS program

 Melissa Cui (Winter 2009), PIBS/MCDB

 Hilary Archbold (Fall 2008), PIBS/MCDB

 Qingxuan Song (Fall 2008), MCDB

 Emily Petty (Winter 2006), PIBS/MCDB

 Ceyda Bilgir (Winter 2006), MCDB

Tyler Nusca (Fall 2006), PIBS/MCDB

Undergraduate

 Emily Roberts (2013-) Undergraduate Research Opportunities Program

 Stephen Tryban (2013-) Undergraduate researcher

Emily Valice (2012-) Undergraduate researcher

Natasha Sood (2012-), Undergraduate Research Opportunities Program

 Cassandra Kirkland (2012-), Undergraduate Research Opportunities Program

 Laura Sligar (2012-2013) Undergraduate researcher

 Robert Dikeman (2012), Undergraduate researcher

 Bradley Lankowsky (2011-2012) Undergraduate researcher

 *Started Medical School at Case Western Reserve University in Fall 2012*

Hussein Al-Asidi (2011-2012) Undergraduate researcher

 *Started Ph.D program in Evolutionary Biology at Univ. of Chicago in Fall 2012.*

 Katya Mack (2011-2012) Undergraduate researcher

 *Started Ph.D program in Evolutionary Biology at Univ. of Arizona in Fall 2012.*

Mackenzie Dome (2011-2012) Undergraduate researcher, MCDB300

 *Started MS in Global Health at Notre Dame in Fall 2012*

 Wesley McLaughlin (2010-2012) Undergraduate researcher, EEB300, *REU summer 2010*

 *HIGHEST HONORS*

 *Started Medical School at Rosalind Franklin University (Chicago) in Fall 2012*

 Kara Vogel (2009-2010) Undergraduate researcher

 *Started Biology Ph.D. program at Michigan Technological University in Fall 2010*

wei Weng (2007-2010) Undergraduate Research Opportunities Program, *honors thesis*

 *HONORS*

*Started Medical School @Duke-NUS (Singapore) in Fall 2010*

Laura Shefner (2008-2009) Undergraduate researcher, *honors thesis*

*HIGH HONORS*

 *Started Medical School @University of Toledo in Fall 2009*

Marisa Weizel (2007), Biology major, post-bachelors researcher

 *Started Masters in Public Health at University of Michigan in Fall 2011*

 Elizabeth Thompson (2006-2008), Biology major, MCDB 300, MCDB 400

 *Started a Biology Ph.D. program at Duke University in Fall 2008*

Gabriel Smith-Winberry (2006-2007) Political Science major, pre-med, EEB 300, EEB 400

 *Started Medical school @ University of Virginia in Fall 2007*

 Emma Stewart (2005 - 2009) Biology major, Undergraduate Research Opportunities Program

 *2009-2010 Continued in the laboratory full time as lab manager/technician*

 *Started accelerated education degree program at University of Georgia in fall 2010*

 Alekhya Ratnala (2005-2006) Engineering major, Undergraduate Research Opportunities Program

 Monica Woll (2005-2006) History major, EEB 300

*Summer Research Opportunities Program (for non-UM minority students)*

 Yainna Hernaiz Hernandez (2008) (home institution: Universidad Metropolitana, Puerto Rico)

 *Started Ph.D. program in Biology at the University of Vermont in fall 2009*

Saleh Akhras (2007) (home institution: Northeastern Illinois University)

 *Started dentistry graduate program at University of Illinois at Chicago in Fall 2009*

*Exchange program between UM and Peking University and Tsinghua University (B. Coppola organizer)*

Zhiyuan Yao (2011) (home institution: Peking University)

Zhixiu Yang (2010) (home institution: Tsinghua University)

*ED-QUE2ST: Enhancing Diversity, Quality, and Understanding of the Ecological and Evolutionary Sciences for Tomorrow*.

Alejandra Torres Marrero (2012) (home institution: University of Puerto Rico, RUM)

Tiffany Brooks (2013) (home institution: University of Cincinnati, Cincinnati, OH)

*Co-sponsored students (primary advisor)*

Emily Hogikyan (F12, W13) (Katherine Gallagher, Surgery, UM)

Michael Ho (F12) (Alvaro Rojas-Pena, Surgery, UM ECLS Laboratory)

Vlad Nasta (W12) MCDB300 (Afaf Absood, Metabolism, Endocrinology & Diabetes, UM)

 Daniel Lyons (W11- ) EEB300

Anthony Zaki (W11) MCDB300 (Internal Medicine, UM)

David Magno (W11) MCDB300

Thomas Liu (F11) MCDB400

Daniel Meister (F10-F11) MCDB300, MCDB400 (Michal Olszewski, Internal Medicine, UM)

Ameya Walimbe (F08 - W10), MCDB 300/400 (Stephen Weiss, Mol. Med & Genet, UM)

 Melissa Wylie (W08), MCDB 400 (David Burke, Human Genetics, UM)

 Whitney Chadwick (F07), MCDB 300 (Evan Keller, Pathology, UM)

 Kimberly Ku (F07, W08), MCDB 300/MCDB 400 Yongqun He, Micro and Immun, UM)

 Shayna Ravindran (W07), MCDB 300, (Paresh Patel, Mol & Behav Neuro Inst)

 Jeff Gibson (W06, F06), MCDB 300, 400 (Deneen Wellik, Dept. of CDB, UM)

 Patrick McLaren (F06,W07), EEB 300 (Julia Richards, Kellogg Eye Center, UM)

 Neha Sekhri (F06), MCDB 300 (Madhavi Kadakia, Wright State University)

 Kelly Daws (F06), MCDB400 (Benedict Lucchesi, Dept of Pharmacology, UM)

K-12 lab experiences

 Jalen Copeland, 8th grader at Summit Academy School, Romulus, MI (2011)

 Taylor James, Notre Dame Academy (senior project, 2006)

Ph.D. Thesis committee memberships

 Tim Connallon, Ecology and Evolutionary Biology (major advisor, Lacey Knowles), 2005-2009

 Ben-yang Liao, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2006-2008

 Christina Rogers, Cell and Developmental Biology (major advisor, Scott Barolo), 2006-2009

 Margaret Bakewell, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2007-2011

 Karishma Sadikot, Mol, Cell, and Devel Biology (major advisor, Gyorgyi Csankovszki), 2007-2011

 Zhi Wang, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2007-2010

 Victoria Cattani, Univ. of Rochester Biology Dept (major advisor, Daven Presgraves), 2007–2012

 Wenfeng Qian, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2008-2012

 Michael DiGiorgio, Bioinformatics (major advisor, Noah Rosenberg), 2009-2011

 Raquel Assis, Bioinformatics (major advisor, Alexy Kondrashov), 2009-2011

 Jen-Pan Huang, Ecology and Evol Biology (major advisor, Lacey Knowles) 2010- *secondary advisor*

Anne Sonnenschein, Michigan State University (major advisor, David Arnosti) 2011-

Chuan Li, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2011- *secondary advisor*

 Katherine Gurdziel, Bioinformatics (major advisor, Deb Gumucio), 2012-

 Junrui Xu, Bioinformatics (major advisor, Jianzhi Zhang), 2012-

 Qingxuan Song, MCDB (major advisor, Anuj Kumar), 2012-2013

 Daniel Zinder, Bioinformatics (major advisor, Mercedes Pascal) 2012-

 Bryan Moyers, Bioinformatics (major advisor, Jianzhi Zhang) 2013-

 Alexander Taylor, Ecology and Evolutionary Biology (major advisor, Yin-Long Qiu) 2013-

 Wei-Chin Ho, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2013-

 Thomas Jenkinson, Ecology and Evolutionary Biology (major advisor, Tim James), 2013-

 Matthew Pauly, Microbiology and Immunology (major advisor, Adam Lauring), 2013-

 Ling Huang, Molecular, Cellular, and Developmental Biology (major advisor, John Schiefelbein) 2013-

 Jukka-Pekka Verta, Biology Department, University of Laval (major advisor, Chriistian Landry) 2013-

**Service**

**Professional Service:**

2014-2016 REBUILD: Researching Evidence Based Undergraduate Instructional and Learning Developments

2014-2015 Education officer, Society of Evolutionary Developmental Biology

2012-2015 Education Committee, member, Genetics Society of America

2012 Panelist for Honors discussion on the nature of science (U. Michigan, organized by B. Coppola)

2012 External Advisory Committee for University of Texas Teaching Academy

2012 SMBE Satellite Symposium selection committee (chair Soojin Yi, Georgia Tech)

2012 “Integrating Piazza into course discussion” Provost symposium (organized by CRLT)

2012 “Using Clickers for Formative Assessment and Student Engagement” New Faculty Orientation

2012 Judge for poster competition, Society of Molecular Biology and Evolution (~1000 attendees)

2011 Panelist, “Preparing Future Faculty” Seminar, University of Michigan (May 2011)

2010 Panelist, “Mentoring and Graduate Teaching: Managing a Lab” at LSA Teaching Academy (Aug 2010)

2010 Panelist, “Preparing Future Faculty” Seminar, University of Michigan (May 2010)

2009 Scientific program committee, Society of Molecular Biology and Evolution annual meeting

2008 Judge for poster competition, Society of Molecular Biology and Evolution (~1000 attendees)

2008 Panelist, “Preparing Future Faculty” Seminar, University of Michigan (May 2008)

2007 Judge for poster competition, 48th Annual Drosophila Research Conference (~1500 attendees)

2007 Panelist, “Preparing Future Faculty” Seminar, University of Michigan (May 2007)

2007 Panelist, “Preparing Future Faculty” Seminar, University of Michigan (October 2007)

**Editorial roles:**

*Molecular Biology and Evolution*, Associate Editor (2013-2015)

*Genome Biology and Evolution,* Associate Editor (2012-2015)

*Heredity,* Editorial board member (2012- )

*Proceedings of the Royal Society B: Biological Sciences,* Editorial board member (2011-2012)

*Evolution*, Associate editor (2009-2012)

*PLoS Genetics*, guest associate editor (2009, 2011, 2012, 2013)

*Proceedings of the National Academy of Sciences,* guest editor (2011, 2012, 2013)

**Reviewing activity: Grants**

Portuguese Foundation for Science and Technology

National Science Foundation (Panelist: Molecular Evolution and Genomics)

National Science Foundation (Panelist: Population and Evolutionary Processes)

National Science Foundation (Panelist: Networks, Synthetic Biology, and Evolution)

National Science Foundation (ad hoc reviewer: Genes and Genome Systems, Eukaryotic Genetics, Population and Evolutionary Processes, Physiological and Structural Systems, Mechanisms of Inheritance, Mechanisms and Regulation of Transcription)

Human Frontier Science Program

Austrian Science Fund

Kansas State University Ecological Genomics Institute

University of Michigan, Office of the Vice President for Research

**Reviewing activity: Academic Journals**

*BMC Evolutionary Biology*

*BMC Genomics*

*Current Biology*

*Development*

*Evolution and Development*

*FLY*

*Gene*

*Genetica*

*Genetics*

*Genome Biology*

*Genome Biology and Evolution*

*Genome Research*

*Heredity*

*Journal of Molecular Evolution*

*Molecular Biology and Evolution*

*Molecular Systems Biology*

*Nature*

*Nature Genetics*

*Nature Reviews Genetics*

*Philosophical Transactions B*

*Plant Cell*

*PLoS Biology*

*PLoS Genetics*

*PLoS ONE*

*Proceedings of the National Academy of Sciences*

*Proceedings of the Royal Society B*

*Science*

*Trends in Ecology and Evolution*

*Trends in Genetics*

**Reviewing activity: Books**

2006 “Introduction to Genetic Analysis”,(9th edition)

Griffiths et al. (WH Freeman Publishers)

2006 “Developmental Basis of Evolutionary Change”

 D.L. Stern (Roberts and Company Publishers)

2000 “From DNA to Diversity: Molecular genetics and the evolution of animal design” (1st edition)

S.B. Carroll, J.K. Grenier, S.D. Weatherbee (Blackwell Science)

2000 “A primer of Genome Science” (1st edition)

G. Gibson and S. Muse (Sinauer Publishing)

**Membership in professional Societies:**

Genetics Society of America, member

American Association for the Advancement of Science, member

Society of Developmental Biology, member

Society for the Study of Evolution, member

American Society of Naturalists, member

**Departmental Service:**

2014-2015 Associate Chair for Graduate Studies, EEB (includes chairing Admissions committee and Graduate Affairs Committee)

2013-2014 Prelim Evaluation committee (Brittany Nelson), Bioinformatics

 MCDB preliminary exam committee (Ding He, Klionsky)

 BSB Planning committee: Classrooms and seminar rooms

2012-2013 Graduate Evaluations committee, EEB

 Prelim Evaluation committee (Ling Huang, Alisha John, Bing Yang), MCDB

Prelim Evaluation committee (Chee Lee, Sartor lab), Bioinformatics

Prelim Evaluation committee (Brendan Veeneman), Bioinformatics

 Prelim Evaluation committee (Bryan Moyers), Bioinformatics

2011-2012 ELI exam (Jinrui Xu, Bioinformatics – 2nd attempt)

Prelim Evaluation committee (Jiaxing Li, Collins lab), MCDB

Graduate Evaluations committee, EEB

 Evolutionary Biology faculty job search committee, EEB (chair)

2010-2011 ELI exams (Jinrui Xu, Bioinformatics – 1st attempt; Zengguang Wang, EEB)

Diversity committee, EEB (chair)

 Computational Evolutionary Biology faculty job search committee, EEB

 Evolutionary Biology faculty job search committee (2 positions), EEB

 Graduate admissions committee, MCDB/PIBS

 Frontiers Masters Program Steering Committee member, EEB

2009-2010 Diversity committee, EEB

 Seminar committee (partial term), EEB

 Computational Evolutionary Biology faculty job search committee, EEB

 Graduate admissions committee, MCDB/PIBS

2008-2009 *Pre-tenure “nurturing” leave*

* 1. Executive committee, EEB

Nomination committee, EEB

 Early Scientists Symposium organizing committee (chair), EEB

 Prelim evaluation committee, (Yuliang Ma, Raymond lab), MCDB

2006-2007 Executive committee, EEB

 Prelim evaluation committee (Mikyung Chang, Cadigan lab), MCDB

2005-2006 Departmental seminar committee, EEB

 Young Scientists Symposium organizing committee, EEB

 Prelim evaluation committee (Ryan Frisch, Bender lab), MCDB

**Synergistic activities and Outreach**

**K-12 Outreach**

2014 Faculty volunteer for FEMMES (Females Excelling More in Math, Engineering, and Sciences) Capstone event

2013 Class visit, 5th grade class, Childs Elementary School, Ypsilanti, MI

2012 Hosted lab and class visit from AP biology and chemistry students (Romulus, MI)

2012 Faculty volunteer for FEMMES (Females Excelling More in Math, Engineering, and Sciences) Capstone event

2012 Supplied resources for a Drosophila genetics lab in AP biology course (Romulus, MI)

2011 Job shadowing for class project, 8th grader Jalen Copeland (Summit Academy, Romulus, MI)

2010 Lab visit and discussion, FIRST Lego League team (Techno tadpoles, led by Tammy Damrath)

2008 Lab and class visit with Advanced Placement Biology class from Romulus High School

 Class visit, 5th grade class, Childs Elementary School, Ypsilanti, MI

2006University of Michigan Saturday Seminars for Outstanding HS juniors, 40 students

 “DNA and the Genomics Revolution

2006 Sponsor for high school student senior project (Taylor James)

2004 Visited Lansing High School Biology class (Lansing, NY), and provided resources for fly lab

2001 Visited Deerfield High School Biology class (Deerfield, WI), and provided resources for fly lab

 “Introduction to Genetics”

2000 Visited elementary schools in Livonia, MI (1st grade) and Deerfield, WI (3rd grade)

“Genetics and the fruit fly”

2000 Demonstration for summer day camp participants at the University of Wisconsin

**Improving K-12 and undergraduate education**

2012 Honors Summer Fellows Faculty Panel, University of Michigan

2012 Presenter, New Faculty Orientation, “Using clickers in large lecture courses”, U. of Michigan

2009 Contributed exam problems to *Nature Education*’s genetics test-bank

2008-2010 Presenter, Center for Research on Learning and Teaching seminar on formative assessments

1. Presentation on “evo-devo” at National Association of Biology Teachers annual meeting

2008 Video interview on CD supplement for high school/college teachers (NABT, NESCent, AIBS)

2008 Wrote summary of teaching technique for discussion courses and distributed to colleagues

2007 Redesigned Genetics course required of all biology majors to include more active learning

2006 Contributed to revision of national AP Biology standards for evolution (with Susan Offner)

**Increasing representation of minority groups**

2009-2011 Member of EEB Diversity committee (chair for 2010-2011)

2009 Co-taught module on “Genetics and Genomics” at the Arizona State University Mathematical and Theoretical Biology Summer Institute (enrolls predominantly minority students)

2009 Research rotation mentor for EEB Frontiers Masters Program student (Mairin Balisi)

2008, 2009 Invited speaker for Women in Science and Engineering (WISE) Residential program

2006, 2007 Mentor for Summer Research Opportunity Program (minority students from other universities)

2007-2009 Presentations to visiting students from Howard University and universities from Puerto Rico

**Conveying science to the general public**

2009 UM Press release (“Color differences within and between species have common genetic origin”) picked up by over 34 web sites, including feature as top story on Science Daily,

2009 Interviewed for *Science* magazine article: (*Science* **326**: 1612)

 “Spineless Fish and Dark Flies Prove Gene Regulation Crucial”

2009 Public seminar, “The path to diversity: biological history recorded in DNA”

 (sponsored by Workantile Exchange, Ann Arbor, MI)

2008 Interviewed for *Science* magazine article: (*Science* **321**: 760-763)

 “Deciphering the genetics of evolution”

2006 Interviewed for *Seed* magazine article:

 “The spotty history of fruit flies” (4/23/06)

2005 Work featured in a cover story of *Wisconsin State Journal* (2/3/05) called "The key to evolution?"

2005 Interviewed for article in *Chronicles of Higher* education:

“Is it whom you know?” by Gabriela Montell (7/1/05)

2002 Filmed working with flies for episode 125 of the PBS series: “Secrets of the Sequence”

**Other professional activities**

2006 Society of Developmental Biology New Faculty Boot-camp

**Current collaborators and recent (≤4 years) coauthors** (faculty and postdocs only)

|  |  |  |
| --- | --- | --- |
| Patricia Beldade (Leiden U.) | Bin He (Harvard U.) | Joel McManus (U. Conn. Health Cntr) |
| Graeme Bell (U. Chicago) | Martin Kreitman (U. Chicago) | Colin Meiklejohn (Indiana U.) |
| Pierre Fontanillas (U. Lausanne) | Christian Landry (U. of Laval) | Soo Young Park (U. Chicago) |
| Brenton Gravelely (U. Conn. Health Cntr) | Michael Ludwig (U. Chicago) | Scott Selleck (Penn State U.) |
| Dan Hartl (Harvard U.) | Bryant McAlliser (U. Iowa) | Natalia Tamarina (U. Chicago) |

**A List of Presentations by Lab Members at Conferences is maintained** [**HERE**](https://docs.google.com/spreadsheet/ccc?key=0AqvrjOmev1NrdHF6aWl1S1ptYmYtNklyeDdfQ3dScHc&usp=sharing)**.**

1. This award recognizes the outstanding teaching of undergraduates. Recipients are selected by the college executive committee from among those recommended for promotion from assistant professor to associate professor with tenure. [↑](#footnote-ref-2)
2. This award is conferred annually to recognize 1-2 mid-career faculty who have demonstrated an impressive record of accomplishment in scholarship and/or creativity, as well as their conspicuous ability as a teacher. [↑](#footnote-ref-3)