

Curriculum Vitae

PATRICIA J. WITTKOPP (née Polaczyk)

1061 Natural Science Bldg.
830 N. University Ave.
University of Michigan
Ann Arbor, MI 48109-1048

Telephone: 734 / 763-1548
Fax: 734 / 763-0544
Email: wittkopp@umich.edu
Labpage: www.umich.edu/~pwlab

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
Trainer, NIH Open Data 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
2010 Henry Russel Award (University of Michigan)²
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
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

1. 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. *To be submitted 2/21/14*

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.

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.

2. 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*.
3. 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*.
4. Coolon, J.D.*, W. Webb, and **P.J. Wittkopp**. (2013) Sex-specific effects of *cis*-regulatory variants in *Drosophila melanogaster*. *Genetics* **195**, 1419-22.
5. 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*]
6. 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*]
7. 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 Genomics*, **14**, 536.
"Highly accessed"
Selected by Faculty of 1000
8. **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 primer
9. Coolon, J.D. and **P.J. Wittkopp***. (2012) "*cis*- and *trans*-regulation in interspecific *Drosophila* hybrids" in *Polyloid and Hybrid Genomics*, Wiley-Blackwell Publishing. Editors: Z. Jeffrey Chen and Jim Birchler, *in press*.
Invited book chapter
10. 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
11. 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
12. **Wittkopp, P.J.***, and G. Kalay. (2011) *cis*-regulatory elements: molecular mechanisms and evolutionary processes underlying divergence. *Nature Reviews Genetics* **13**, 59-69.
Invited Review
13. **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
14. **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

15. 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
16. **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
17. **Wittkopp, P.J.*** (2010). Variable transcription factor binding: a mechanism of evolutionary change. *PLoS Biology*, **8**, e1000342. PMCID: PMC2843594
Invited Primer
18. 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
19. 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
20. **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 1000
Selected 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.
21. **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*
22. **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
23. **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
24. 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

25. Kohn, M.H. and **P.J. Wittkopp**. (2007) Annotating *ebony* on the fly. *Molecular Ecology*, **16**, 2831-3.
Invited commentary
26. **Wittkopp, P.J.*** (2007) Evolutionary genetics: how flies get naked. *Current Biology* **17**, R881-3.
Invited commentary
27. **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*
28. 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*
29. **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. PMID: PMC1526670
30. **Wittkopp, P.J.*** (2006) Evolution of *cis*-regulatory sequence and function in diptera. *Heredity* **97**, 139-147
Invited, *Evolution and Development (EvoDevo) special issue*
31. 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. PMID: PMC1456106
Selected by Faculty of 1000
32. **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"
33. 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, 1878-1879
News and Views by Brakefield and French, *Nature* 433, 466-467
Selected by Faculty of 1000
34. **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 1000
Featured in Briefings in Bioinformatics 5, 370-377
35. **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
36. **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

37. 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.
38. **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 article

Featured in *Nature Reviews Genetics* Research Highlights section, November 2002

39. 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.
40. **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

41. 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

42. **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 (draft available upon request):

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

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. *Submitted*

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)*: 2013.005; doi: 10.1534/gsaprep.2013.005

<http://www.genetics-gsa.org/education/GSAPREP.2013.005.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:

- 2010 Molecular Underpinnings linking Evolution 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:

- 2015 EMBO Conference on Chromatin and Epigenetics, Heidelberg, Germany (Schedule conflict)
 Population Genetics Group, Sheffield, UK – *Plenary Speaker*
 Fondation les Treilles; Mechanisms of evolutionary changes, Tourtour, France
- 2014 Arthropod Genomics Symposium, Urbana, IL, *Keynote Speaker*
 Principles in Population Genetics: Symposium honoring Andrew G. Clark, Cornell University, Ithaca, NY
 Society of Molecular Biology and Evolution, Puerto Rico
 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
 Regulatory Genomics meeting held alongside ISMB 2014, Boston, MA (Schedule conflict),
- 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)
 Dept. of Evol, Ecol and Organismal Biology, Ohio State University, Columbus, OH (Schedule conflict)
 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
- 2007 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
2008 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)

A List of Presentations by Wittkopp Lab Members at Conferences is maintained [HERE](#).

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)
- 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, Christian Landry) 2013-

Service

Professional Service:

2014 Panelist, "Preparing Future Faculty" Seminar, University of Michigan (May 2014)
2014-2016 REBUILD: Researching Evidence Based Undergraduate Instructional and Learning Developments
2014-2015 Education officer, Society of Evolutionary Developmental Biology (founding member of new society)
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
 Prelim Evaluation committee (Matthew Pauly), Microbiology and Immunology
 MCDB preliminary exam committee (Ding He, Klionsky)
 Prelim Evaluation committee (Chee Lee, Sartor lab), Bioinformatics (retake)
 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*

2007-2008 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
- 2006 University 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
- 2008 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