

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

4010 Biological Sciences Building  
1105 North University Avenue  
University of Michigan  
Ann Arbor, MI 48109-1048

Telephone: 734 / 763-1548  
Fax: 734 / 763-0544  
Email: [wittkopp@umich.edu](mailto:wittkopp@umich.edu)  
Labpage: [sites.lsa.umich.edu/wittkopp-lab/](http://sites.lsa.umich.edu/wittkopp-lab/)

**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:**

2019 Visiting Group Leader, European Molecular Biology Laboratory (EMBL), Heidelberg

2017 Sally L. Allen Collegiate Professor<sup>1</sup>, University of Michigan

2016 - Arthur F. Thurnau Professor<sup>2</sup>, University of Michigan

2015 - Professor of Ecology and Evolutionary Biology  
Professor of Molecular, Cellular, and Developmental Biology

2015 – 2018 Professor of Honors Program, University of Michigan

2014 - 2019 Associate Chair of Graduate Studies, Ecology and Evolutionary Biology, University of Michigan

2011 - 2015 Associate Professor of Ecology and Evolutionary Biology  
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

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<sup>1</sup> Collegiate Professorships are awarded for exceptional scholarly achievement and impact on advancing knowledge in science, engineering, health, education, the arts, the humanities or other academic field of study.

<sup>2</sup> Thurnau Professorships recognize and reward a highly select group of tenured faculty for their outstanding contributions to undergraduate education

**Honors and Awards:**

2019	Friedrich Wilhelm Bessel Research Award - Alexander von Humboldt Foundation
2019	John Simon Guggenheim Memorial Foundation Fellow
2019	Society of Molecular Biology and Evolution Margaret Dayhoff Mid-Career Award
2019	Elizabeth Caroline Crosby Award (University of Michigan)
2017	Sally L. Allen Collegiate Professorship (University of Michigan)
2016	Arthur F. Thurnau Professorship (University of Michigan)
2015	John Dewey Award (University of Michigan) <sup>3</sup>
2014	Faculty Recognition Award (University of Michigan) <sup>4</sup>
2014	Faculty Speaker, LSA Honors Program Graduation Ceremony (University of Michigan)
2013	Work/Life Champion Award for Supervisors (University of Michigan) <sup>5</sup>
2013	Excellence in Education Award (University of Michigan) <sup>6</sup>
2011	Class of 1923 Memorial Teaching Award (University of Michigan) <sup>7</sup>
2010	Henry Russel Award (University of Michigan) <sup>8</sup>
2008	"Scientist to Watch", <i>The Scientist</i>
2008-2010	Alfred P. Sloan Research Fellow
2007-2009	March of Dimes Basil O'Connor Starter Scholar Research Award
2003-2006	Damon Runyon Cancer Research Foundation Postdoctoral Fellow
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

- Hill, M.S.<sup>1</sup>, P. Vande Zande<sup>1</sup>, and **P.J. Wittkopp\***. (2020) TITLE IN PROGRESS. In preparation for *Nature Reviews Genetics*.  
*Invited submission; <sup>1</sup>co-first authors*
- Lamb, A. M., Z. Wang, P. Simmer, H. Chung, and **P.J. Wittkopp\*** (2020) *ebony* affects pigmentation divergence and cuticular hydrocarbons in *Drosophila americana* and *D. novamexicana*. Submitted to *Frontiers in Ecology and Evolution* on 2/27/2020  
*Invited submission to special collection on Evo-Devo of Color Pattern Formation*
- Massey, J.H., G.R. Rice, A. Firdaus, C.-Y. Chen, S.-D. Yeh, D.L. Stern\*, and **P.J. Wittkopp\*** (2020) Co-evolving wing spots and mating displays are genetically separable traits in *Drosophila*. *Evolution*, in revision 2/8/20. Posted to BioRxiv: <https://biorxiv.org/cgi/content/short/869016v1>
- Massey, J.H., D. Chung, I. Siwanowicz, D.L. Stern\*, **P.J. Wittkopp\*** (2019) The *yellow* gene influences *Drosophila* male mating success through sex comb melanization. *eLife*. 2019 Oct 15;8.
- Metzger, B.P.H., and **P.J. Wittkopp\*** (2019) Compensatory *trans*-regulatory alleles minimizing variation in *TDH3* expression are common within *Saccharomyces cerevisiae*. *Evol Lett*. 2019 Aug 29;3(5):448-461

<sup>3</sup> This award recognizes a long-term commitment to the education of undergraduate students. Recipients are selected by the college executive committee from among those recommended for promotion from associate professor to full professor.

<sup>4</sup> This award recognizes up to five mid-career faculty a year who have demonstrated remarkable contributions to the University through outstanding achievements in scholarly research and/or creative endeavors; excellence as a teacher, advisor and mentor; and distinguished participation in the service activities of the university and elsewhere.

<sup>5</sup> This award recognizes 10 supervisors from throughout the university (both academic and non-academic) who create a working environment that supports work/life balance for their staff. Nominations come from staff members themselves.

<sup>6</sup> This award recognizes special efforts in the areas of classroom teaching, curricular innovation, and the supervision of student research, as well as other significant contributions to the quality of the College's teaching-learning environment.

<sup>7</sup> 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.

<sup>8</sup> This award is conferred annually to recognize up to 2 mid-career faculty members who have demonstrated an impressive record of accomplishment in scholarship and/or creativity, as well as their conspicuous ability as a teacher.

6. Hodgins-Davis, A., F. Duveau, E. Walker, **P.J. Wittkopp\*** (2019) Empirical measures of mutational effects define neutral models of regulatory evolution in *Saccharomyces cerevisiae*. *Proc Natl Acad Sci U S A*. 2019 Oct 15;116(42):21085-21093
7. Massey J.H., N. Akiyama, T. Bien, K. Dreisewerd, **P.J. Wittkopp\***, J.Y. Yew\*, A. Takahashi\* (2019) Pleiotropic effects of *ebony* and *tan* on pigmentation and cuticular hydrocarbon composition in *Drosophila melanogaster*. *Frontiers in Physiology*, **10**, 518.  
Invited submission to special collection "Melanism: macrophysiology to molecules"  
(Note: first author of this collaborative work was a graduate student from my lab)
8. Kalay, G., J. Lachowiec, U. Rosas, M. R. Dome, and **P.J. Wittkopp\*** (2019) Redundant and cryptic enhancer activities of the *Drosophila yellow* gene. *Genetics* **212**, 343-360.  
Selected for Highlight in May 2019.
9. Duveau, F., A. Hodgins-Davis, B.P.H. Metzger, B. Yang, S. Tryban, E.A. Walker, P. Lybrook, and **P.J. Wittkopp\*** (2018). Effects of gene expression noise on fitness in a constant environment. *eLife*. 2018 Aug 20;7. pii: e37272. doi: 10.7554/eLife.37272.
10. Duveau, F.<sup>1</sup>, D.C. Yuan<sup>1</sup>, B.P.H. Metzger, A. Hodgins-Davis, and **P.J. Wittkopp\*** (2017) Effects of mutation and selection on plasticity of promoter activity in *Saccharomyces cerevisiae*. *Proceedings of the National Academy of Sciences*, **114**(52):E11218-E11227, doi: 10.1073/pnas.1713960115. <sup>1</sup>co-first authors
11. Duveau, F., W. Toubiana, and **P.J. Wittkopp\*** (2017) Fitness effects of *cis*-regulatory variants affecting expression of the *Saccharomyces cerevisiae* *TDH3* promoter. *Molecular Biology and Evolution*, **34**, 2908-2912.
12. Metzger, B.P.H., **P.J. Wittkopp**, and J.D. Coolon\*. (2017) Evolutionary dynamics of regulatory changes underlying gene expression divergence among *Saccharomyces* Species. *Genome Biology and Evolution* **9**, 843-854.
13. Yang, B. and **P.J. Wittkopp\***. (2017) Structure of the transcriptional regulatory network correlates with regulatory divergence in *Drosophila*. *Molecular Biology and Evolution* **34**:1352-1362.
14. Andrade López, J. M., S.M. Lanno, J.M. Auerbach, E.C. Moskowitz, L.A. Sligar, **P.J. Wittkopp** and J.D. Coolon\*. (2016) Genetic basis of octanoic acid resistance in *Drosophila sechellia*: functional analysis of a fine-mapped region. *Molecular Ecology*, **26**:1148-1160.
15. **Wittkopp, P.J.** (2016) Voices: Big Questions in Evolution. *Cell* **166**, 528-29.  
invited opinion
16. Kalay, G., R. Lusk, M. Dome, K. Hens, B. Deplancke and **P.J. Wittkopp\***. (2016) Potential direct regulators of the *Drosophila yellow* gene identified by yeast one-hybrid and RNAi screens. *G3: Genes, Genomics, Genetics* **13**, 3419-343.
17. John, A., L. Sramkoski, E. Walker, A.M. Cooley, and **P.J. Wittkopp\***. (2016) Sensitivity of allelic divergence to genomic position: Lessons from the *Drosophila tan* gene. *G3: Genes, Genomics, Genetics* **6**, 2955-62.
18. Lamb, A., E. Walker, and **P.J. Wittkopp**. (2016) CRISPR/Cas9 allele-swaps: genome editing with single-nucleotide precision in *Drosophila*. *FLY*, 2016 Aug 5:1-12.
19. Massey, J. and **P.J. Wittkopp\*** (2016). The genetic basis of pigmentation differences within and between *Drosophila* species. *Curr Top Dev Biol*. **119**, 27-61  
Invited
20. Metzger, B.P.H.<sup>1</sup>, F. Duveau<sup>1</sup>, D.C. Yuan<sup>1</sup>, S. Tryban, B. Yang, and **P.J. Wittkopp\***. (2016) Contrasting frequencies and effects of *cis*- and *trans*-regulatory mutations on gene expression. *Molecular Biology and Evolution* **33**, 1131-46. <sup>1</sup> co-first authors
21. Moczek, A.P, K.E. Sears, A. Stollewerk, **P.J. Wittkopp**, P. Diggle, I. Dworkin, C. Ledon-Retting, D. Q. Matus, S. Roth, E. Abouheif, F.D. Brown, C-H, Chiu., S. Cohen, A.W. De Tomaso, S.F. Gilbert, B. Hall, A. Love, D.C. Lyons, T. Sanger, J. Smith, C. Secht, M. Vallejo-Marin, C. Extavour. (2015) The significance and scope of evolutionary developmental biology: a vision for the 21st century. *Evolution & Development*, **17**, 198-219. (I wrote the section on Science Education in this collaborative paper.)
22. Coolon, J.D.\*<sup>1</sup>, K.R. Stevenson, C.J. McManus, B.R. Graveley, and **P.J. Wittkopp\***. (2015) Molecular mechanisms and evolutionary processes contributing to accelerated divergence of gene expression on the *Drosophila* X chromosome. *Molecular Biology and Evolution* **32**, 2605-15.  
Recommended by Faculty of 1000
23. Metzger, B.P.H.<sup>1</sup>, D.C. Yuan<sup>1</sup>, J.D. Gruber, F. Duveau and **P.J. Wittkopp\***. (2015) Selection on noise constrains variation in a eukaryotic promoter. *Nature* **521**, 344-7. <sup>1</sup>co-first authorship  
Recommended by Faculty of 1000

24. Duveau, F\*, B.P.H. Metzger, J.D. Gruber, K. Mack, N. Sood, T. Brooks and **P.J. Wittkopp\***. (2014) Mapping small effect mutations in *Saccharomyces cerevisiae*: impacts of experimental design and mutational properties. *G3: Genes, Genomics, Genetics*, **4**, 1205-16.
25. 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* **24**, 797-808.
26. 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* **24**, 786-796.
27. Coolon, J.D.\*, W. Webb, and **P.J. Wittkopp**. (2013) Sex-specific effects of *cis*-regulatory variants in *Drosophila melanogaster*. *Genetics* **195**, 1419-22.
28. 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* **196**, 557-67 PMID: PMC3914626
29. 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* **24**, 84-95 PMID: PMC3875864
30. 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. PMID: PMC3751238  
"Highly accessed"  
Recommended by Faculty of 1000
31. **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. PMID: PMC3583991  
Invited educational primer
32. Cooley, A.M., *Shefner, L., W.N. McLaughlin, E.E. Stewart, and P.J. Wittkopp* (2012) The ontogeny of color: Developmental origins of divergent pigmentation in *Drosophila americana* and *D. novamexicana*. *Evolution & Development* **14**, 317-325. PMID: PMC3402224  
Cover article
33. Coolon, J.D. and **P.J. Wittkopp\***. (2012) "*cis*- and *trans*-regulation in interspecific *Drosophila* hybrids" in *Polyloid and Hybrid Genomics*, pp. 37-58, Wiley-Blackwell Publishing. Editors: Z. Jeffrey Chen and Jim Birchler  
Invited book chapter
34. 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: PMC3565465
35. 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. PMID: PMC3276545  
Recommended by Faculty of 1000
36. **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
37. **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
38. **Wittkopp, P.J.\*** (2011) "Evolution of Gene Expression" in *The Princeton Guide to Evolution*, pp. 413-419, Editor-in-chief, Jonathan Losos; Section editor, Hopi Hoekstra.  
Invited book chapter
39. 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. PMID: PMC2996884
40. **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. PMID: PMC3183901
41. **Wittkopp, P.J.\*** (2010). Variable transcription factor binding: a mechanism of evolutionary change. *PLoS Biology*, **8**, e1000342. PMID: PMC2843594  
Invited Primer

42. 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. PMID: PMC2877578  
Recommended by Faculty of 1000
43. 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. PMID: PMC3217793  
*Next Generation Molecular Ecology special issue*
44. **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.  
Recommended 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.
45. **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*
46. **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. PMID: PMC2278090
47. **Wittkopp, P.J.\***, B.K. Haerum, and A.G. Clark. (2008) Regulatory changes underlying expression differences within and between *Drosophila* species. *Nature Genetics* **40**, 346-50.  
Recommended by Faculty of 1000
48. 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. PMID: PMC2040266
49. Kohn, M.H. and **P.J. Wittkopp**. (2007) Annotating *ebony* on the fly. *Molecular Ecology*, **16**, 2831-3.  
Invited commentary
50. **Wittkopp, P.J.\*** (2007) Evolutionary genetics: how flies get naked. *Current Biology* **17**, R881-3.  
Invited commentary
51. **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*
52. 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*
53. **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
54. **Wittkopp, P.J.\*** (2006) Evolution of *cis*-regulatory sequence and function in diptera. *Heredity* **97**, 139-147  
Invited, *Evolution and Development (EvoDevo) special issue*
55. 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  
Recommended by Faculty of 1000
56. **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”
57. 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  
Recommended by Faculty of 1000

58. **Wittkopp, P.J.\***, Haerum, B.K. and A.G. Clark (2004) Evolutionary divergence of *cis* and *trans* gene regulation. *Nature*, **430**, 85-88.  
Recommended by Faculty of 1000  
Featured in Briefings in Bioinformatics 5, 370-377
59. **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
60. **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 PMID: PMC149915  
Featured in *Nature Reviews Genetics* Research Highlights section, April 2003
61. 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.
62. **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
63. 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.
64. **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
65. 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
66. **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

#### Other peer-reviewed papers published by lab members during their time in the Wittkopp lab

1. Lusk, R.W., (2014) Diverse and widespread contamination evident in the unmapped depths of high throughput sequencing data. *PLoS ONE*, 2014 Oct 29;9(10):e110808.  
This work was picked up by many news outlets, including *The Scientist* magazine ( <http://www.the-scientist.com/?articles.view/articleNo/41344/title/Fact-or-Artifact-/> )

#### 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, 9<sup>th</sup> edition* by Griffiths, Wessler, Lewontin, and Carroll (W.H. Freeman and company)

#### Presentations

#### Invited departmental seminars and conference presentations:

- 2021 EMBO workshop: Predicting Evolution, Heidelberg, Germany  
Harvard University, Department of Systems Biology, Cambridge, MA  
Harvard University, Department of Genetics, Cambridge, MA  
Harvard University, Department of Organismic and Evolutionary Biology, Cambridge, MA
- 2020 National Academies Next Steps for Functional Genomics: A Workshop, Washington DC, *Keynote*  
Biology of Genomes, Cold Spring Harbor Labs, Cold Spring Harbor, NY  
Biology of Populations Seminar Series, Princeton University, Princeton, NJ  
University of Alabama, Tuscaloosa, AL (Evolution public lecture)\*\*  
EMBO workshop: Sexual Dimorphism, Heidelberg, Germany  
Instituto Gulbenkian de Ciência, Oeiras, Portugal  
University of Buffalo, Department of Biology  
Department of Biology, Oregon State University, Corvallis, OR
- 2019 Institute for Zoology and Anthropology, Georg-August-University Göttingen  
Division of Biosciences, University College London  
Society for the Study of Molecular Biology and Evolution, Manchester, UK  
Biological Sciences Seminar Series, Columbia University, New York, NY  
Biology Department, New York University, New York, NY  
*Postdoc invited speaker*  
Cell Symposium: Transcription in Evolution, Development, and Disease, Chicago, IL  
EMBL Symposium: System Genetics, Heidelberg, Germany  
From Genes to Organisms: Transcriptional Control during Development, Baeza, Spain  
Behavioral and Evolutionary Ecology Seminar Series, University of Bern, Bern, Switzerland  
Seminar in Ecology and Evolution, University of Montpellier, Montpellier, France  
Systems Biology: Networks, Cold Spring Harbor Labs, Cold Spring Harbor, NY  
Duke University, University Program in Genetics & Genomics, Durham, NC  
Michigan State University, Integrative Biology Program, Lansing, MI  
Centre for Genomic Regulation, Barcelona, Spain  
*Graduate Student Invited Speaker*  
Wayne State University Annual Genomics@Wayne Symposium – schedule conflict  
Lehrstuhl für Zoologie und Evolutionsbiologie, University of Konstanz – schedule conflict  
Institut de Génomique Fonctionnelle(IGFL); Ecole Normale Supérieure, Lyon, France – schedule conflict  
University of Basel, Basel, Switzerland – schedule conflict  
Gladstone Institute of Data Science & Biotechnology, San Francisco, CA – Reschedule due to weather  
ASBMB Evolution and Core Processes in Gene Expression, Lansing, MI (schedule conflict) – *Keynote*  
International Molecular Plant Protection Congress, Adana City, Turkey, (schedule conflict) - *Keynote*
- 2018 University of Pittsburg, Biology Department Retreat, Pittsburgh, PA  
*Keynote speaker*  
Evolution 2018 (SSE/ASN/ESEB), Montpellier, France  
Department of Human Genetics, University of Chicago, Chicago, IL  
*postdoc invited speaker*  
UNL Biotechnology Center, University of Nebraska, Lincoln, NE  
Department of Human Genetics, University of Michigan, Ann Arbor, MI  
Gene Regulation in Evolution Symposium, Mainz University and IMB, Mainz, Germany  
Molecular and Computational Biology, University of Southern California, Los Angeles, CA  
Department of Entomology, University of Maryland, College Park, MD  
HHMI Janelia Research Campus, Ashburn, VA  
National Laboratory of Genomics for Biodiversity, Langebio, México (schedule conflict) - *Keynote*  
XI European Congress of Entomology, Naples, Italy (schedule conflict)  
University of North Carolina, Chapel Hill, Biology department (schedule conflict)  
Darwin Day, University of Wisconsin – Madison (schedule conflict) – *Keynote*
- 2017 Symposium of the Max Planck Society, Organogenesis meets epigenetics, Berlin, Germany  
Ludwig-Maximilians-Universität Fakultät für Biologie, Munich, Germany – *Keynote Seminar Series*  
Max-Planck Institute for Plant Breeding Research, Cologne, Germany  
Max Planck Institute for Developmental Biology, Tuebingen, Germany - *Distinguished Speaker Seminar*  
Institute of Science and Technology Austria, Vienna, Austria

- Yale University, Department of Genetics, New Haven, CT  
 University of Arkansas, Department of Biological Sciences, Fayetteville, AK  
 University of Minnesota, Department of Genetics, Cell Biology, and Development, Minneapolis, MN  
 Indiana University, Department of Biology, Bloomington, IN  
 RNA Innovation Seminar, University of Michigan, Ann Arbor, MI  
 [BC]2 Computational Biology Conference, Basel, Switzerland, *keynote speaker* (schedule conflict)  
 Institute for Population Genetics, Veterinary Medicine, Vienna, Austria (schedule conflict)  
 Peking University, Biology Department, Beijing, China (schedule conflict)  
 Midwest Ecology and Evolution Conference (MEEC) 2017, *plenary speaker* (schedule conflict)  
 University of Kansas, Department of Ecology and Evolutionary Biology (schedule conflict)  
 Brown University, Department of Ecology and Evolutionary Biology (schedule conflict)  
 Texas A&M University, Genetics Seminar Series (schedule conflict)  
 Darwin Day, Grand Valley State University, Allendale, MI – *Keynote speaker* (schedule conflict)
- 2016 Population, Evolutionary, and Quantitative Genetics @The Allied Genetics Conference, Orlando, FL  
*Plenary Speaker*  
 Society of Molecular Biology and Evolution, Gold Coast, Australia  
 Duke University, Genetics Education Symposium, Durham, NC  
 ASU School of Life Science, Arizona State University, Phoenix, Arizona  
 Department of Biology, University of Toronto, Toronto, Canada  
 Wellcome Trust Conference on Evolutionary Systems Biology, Hinxton, UK  
 Cornell's Center for Comparative and Population Genomics, Cornell University, Ithaca, NY  
 Max-Planck Institute for Evolutionary Biology, Plön, Germany  
 Max Planck Institute for Molecular Genetics, Berlin, Germany  
 School of Life Sciences, Arizona State University, Tempe, AZ  
 Jacques Monod Conf: Theoretical and empirical advances in evolutionary genomics, Roscoff, France  
 EMBO Conference: Experimental Approaches to Evolution and Ecology, Heidelberg, Germany  
 Department of Molecular Biosciences, Northwestern University, Evanston, IL  
 Environmental Genomics at the Mount Desert Island Biol Laboratory, Acadia Natl Pk (schedule conflict)  
 Mechanistic and Population-Level Perspectives on Evolution, Vienna, Austria (schedule conflict)  
 Queenstown Molecular Biology Meeting, Nelson, New Zealand – *Keynote speaker* (schedule conflict)  
 School of Biological Sciences, Monash University, Australia (schedule conflict)
- 2015 Population Genetics Group, Sheffield, UK  
*Plenary Speaker*  
 Indian Institute of Science Education and Research, Biology department, Thiruvananthapuram, India  
 Fondation les Treilles; Mechanisms of evolutionary changes, Tourtour, France  
 ASBMB Special Symposium on Evolution and Core Processes in Gene Regulation, St. Louis, MO  
 François Jacob Conference: Gene Control in Development and Evolution, Paris, France  
 Gordon Research Conference: Ecological and Evolutionary Genomics, Biddeford, ME  
 Gordon Research Conference: Molecular Mechanisms in Evolution, Easton, MA  
 EMBO Conference on Chromatin and Epigenetics, Heidelberg, Germany (Schedule conflict)  
 Society of Molecular Biology and Evolution, Vienna (Schedule conflict)  
 Theoretical and empirical evidence of adaptations, Switzerland (Schedule conflict)  
 Catalan Society of Biology meeting, Barcelona, Spain (Schedule conflict) – invited *Plenary speaker*  
 Autumn School, Systems Modeling Course, Swiss Alps, Switzerland (schedule conflict)  
 RECOMB ISCB Reg and Systems Genomics Conference, Philadelphia, PA, *Keynote* (schedule conflict)  
 13th Annual Ecological Genomics Symposium, Manhattan, KS (schedule conflict)
- 2014 Genetics Department, University of Wisconsin – Madison  
*Graduate Student Invited Speaker*  
 Arthropod Genomics Symposium, Urbana, IL  
*Keynote Speaker*  
 Department of Biology, University of Laval, Quebec City, Canada  
 Principles in Population Genetics: Symposium honoring Andrew G. Clark, Cornell University, Ithaca, NY  
 Society of Molecular Biology and Evolution, Puerto Rico  
 Institute on Integrative and Systems 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)  
 Department of Biology, The University of Hawaii at Manoa, Manoa, HI (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 (Schedule 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,  
*Graduate 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  
 52<sup>nd</sup> 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  
 3<sup>rd</sup> 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  
 4<sup>th</sup> 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*
- 2005 Genomics of Closely Related Organisms, IGERT Symposium, Tucson, AZ  
 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

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

- 2013 Evo-Devo Workshop: Progress and Prospects  
 National Evolutionary Synthesis Center (Durham, NC)
- 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)

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

- 2019 \*European Drosophila Research Conference, Lausanne, Switzerland
- 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  
\*48<sup>th</sup> 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  
46<sup>th</sup> Annual Drosophila Research Conference, San Diego, CA
- 2004 \*Genomes and Evolution Conference, SMBE annual meeting, State College, PA  
45<sup>th</sup> Annual Drosophila Research Conference, Washington DC
- 2003 \*44<sup>th</sup> 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  
\*42<sup>nd</sup> Annual Drosophila Research Conference, Washington DC  
Symposium on the Developmental Basis of Evolutionary Change, Chicago, IL
- 2000 9<sup>th</sup> Annual Symposium in the "Egg to Organ" series, St. Paul, MN
- 1999 Keystone Symposium: Specificity in Signal Transduction, Keystone, CO
- 1997 38<sup>th</sup> Annual Drosophila Research Conference, Chicago, IL

**Session chair or Discussion leader:**

- 2020 The Biology of Genomes, Cold Spring Harbor Labs, Cold Spring Harbor, NY
- 2020 National Academies Next Steps for Functional Genomics: A Workshop, Washington DC, Keynote
- 2019 EMBL Symposium: System Genetics, Heidelberg, Germany
- 2019 From Genes to Organisms: Transcriptional Control during Development, Baeza, Spain
- 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 49<sup>th</sup> 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"

**Conferences, symposia and workshops organized:**

- 2021 EMBO Workshop: Predicting Evolution, Heidelberg, Germany  
(co-organized with Justin Crocker, Joshua Payne, and Aleksandra Walczak)
- 2020 Wellcome Trust Evolutionary Systems Biology, Hinxton, UK  
(co-organized with Mark Siegal, Olivier Tenaillon, and Angela Hay)
- 2018 International Conference in Systems Biology, Lyon, France (Scientific Program Committee)
- 2018 Wellcome Genome Trust Conference on "Evolutionary Systems Biology" (Hinxton, UK)  
(co-organized with Marie-Anne Felix, Ben Lehner, and Csaba Pal)
- 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:

2019-2021 Michigan Israel Partnership Award  
 Networks controlling dynamic patterns of gene expression inferred from comparisons between species  
 Co-P.I., (\$100,000)  
 This is a collaborative project with Naama Barkai (Weizmann Institute, Israel). Each group receives \$50,000.

2019-2022 National Science Foundation [MCB-1929737]  
 Evolution of gene expression: from static patterns to dynamic systems  
 P.I., (\$593,500)  
 This is a collaborative project with Naama Barkai (Weizmann Institute, Israel), who receives independent funding for her portion from the Israeli Binational Science Foundation (BSF).

2019-2021 National Science Foundation [DEB-1911322]  
 OPUS: CRS Integrating data and theory to understand the evolution of gene expression  
 P.I., (\$253,575)

2016–2021 Maximizing Investigators' Research Award (R35) [1R35GM118073]  
 National Institutes of Health  
 Genetic mechanisms and evolutionary processes underlying diversity within and between species  
 P.I., (\$2,021,980)

2016-2018 National Research Service Award National Institutes of Health [1-F32-GM-100685]  
*Postdoctoral fellowship for Dr. Jennifer Lachowiec*  
 Linking sequence to expression using binding diversity in interspecies hybrids  
 Sponsor, (\$101,404.00)

2016-2019 National Research Service Award National Institutes of Health [1F32GM115198]  
*Postdoctoral fellowship for Dr. Andrea Hodgins-Davis*  
 Environment-specific effects of new mutations on gene expression  
 Sponsor, (\$157,218)

2013-2016 National Institutes of Health [1 R01 GM108826]  
 Evolution of Gene Expression in Yeast  
 P.I., (\$1,151,793)

2010-2016 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)

2012-2014 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]  
*Postdoctoral fellowship for Dr. Richard Lusk*  
 Linking sequence to expression using binding diversity in interspecies hybrids

- 2010 - 2012 Sponsor, (\$101,404.00)  
National Research Service Award National Institutes of Health [1F32-GM089009]  
*Postdoctoral fellowship for Dr. Joseph Coolon*  
Using next-generation sequencing to understand the evolution of gene regulation
- 2009 - 2012 Sponsor, (\$94,758)  
National Research Service Award National Institutes of Health [1F32GM087928]  
*Postdoctoral fellowship for Dr. Arielle Cooley*  
Characterizing functional variants in natural populations of *Drosophila*
- 2008 Sponsor, (\$142,137)  
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 (\$4,000)
- 2008 - 2012 Alfred P. Sloan Research Fellowship (\$50,000)
- 2008 - 2011 National Research Service Award National Institutes of Health [1 F32 GM083513]  
*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 taught:

2018-2019	Introduction to Ecology and Evolutionary Biology (Biology 171, 596 students, Q2: 4.3/5, student nominated anonymously as "Honored Instructor") EEB foundational course: Discussions in EEB (EEB800), <i>Guest lecture</i> : EEB 516
2017-2018	Introduction to Ecology and Evolutionary Biology (Biology 171, 584 students, Q2: 4.62/5) Biology and Society (Honors 232/Biology 232, 140 students, E&EQ2: 4.74/5)
2016-2017	Biology and Society (Honors 232/Biology 232, 119 students, E&EQ2: 4.83/5) PIBS 503: Fraud, Fabrication and Plagiarism (3 sessions, 20 students each) <i>Guest Lecture</i> : Biology 305
2015-2016	Introduction to Ecology and Evolutionary Biology (Biology 171, 548 students, E&EQ2: 4.31/5) Biology and Society (Honors 232/Biology 232, 134 students, E&EQ2: 4.69/5)
2014-2015	Introduction to Ecology and Evolutionary Biology (Biology 171, 592 students, E&EQ2: 3.99/5) <i>Guest Lecture</i> : Human Genetics Training Grant Seminar (HG532, ~15 students)
2013-2014	Genetics (Biology 305, 337 students, E&EQ2: 4.22/5) <i>Guest Lecture</i> : Molecular Evolution (EEB512) <i>modified duties (teaching reduction) W2014 due to birth of a child</i>
2012-2013	Evolutionary Genetics seminar (EEB800, 15 participants, 7 enrolled, E&EQ2: 4.8/5) <i>sabbatical (teaching release) W2013</i>
2011-2012	Genetics (Biology 305, 412 students, E&E Q2: 4.11/5) Principles of Evolution (EEB516, 23 students, E&EQ2: 4.57/5) Genetics, Development, and Evolution (EEB404/MCDB404, 34 students, E&E Q2: 4.94/5) Independent study: Chuan Li (Zhang lab), EEB730 <i>Guest lecture</i> : 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) <i>modified duties (teaching reduction) W2010 due to birth of a child</i>
2008-2009	<i>pre-tenure teaching release</i>
2007-2008	Genetics (Biology 305), 430 students, (E&E Q2: 4.22/5) Genetics, Development and Evolution (EEB404/MCDB404), 35 students (E&E Q2: 4.95/5) <i>Guest lecture</i> : 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) Model Systems (MCDB 614) ( <i>Drosophila</i> module), 19 students <i>Guest lecture</i> : Genetic Analysis (Human Genetics 632), 15 students
2005-2006	Genetics (Biology 305), 300 students (E&E Q2: 3.86/5) <i>Guest lecture</i> : Principles of Evolution (Biology 516), 20 students

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

2020	Panel moderator: Training and mentoring panel: National Academies Next Steps for Functional Genomics: A Workshop, Washington DC
2019	Career advice panel: From Genes to Organisms: Transcriptional Control during Devel, Baeza, Spain
2016	New Faculty Discussion Panel, The Allied Genetics Conference, Orlando, FL
2015	Presenter: Alliance for Graduate Education and the Professoriate, Work-family balance (U. Michigan)
2015	MORE Mentoring Plan Workshop (with Jose Andrade Lopez)
2015	REBUILD: Lessons for Everyone from the STEM Classroom, LSA Diversity Institute (U. Michigan)
2014	MORE Mentoring Plan Workshop (with Alisha John and Bing Yang)
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

### Training:

#### Visiting Scholar

Zurab Tsetsckhladze, Professor, New Vision University (NVU), Tbilisi, Georgia

#### Independent Postdoctoral Fellow

André Green (Jan 2018-) PhD from Harvard University, advisor Cassandra Extavour  
*Funded by University of Michigan's President's Postdoctoral Fellowship Program*

#### Post-doctoral

- Mohammad Siddiq (2019-) PhD from University of Chicago, advisor Joseph Thornton  
*Funded by Michigan Life Sciences Fellows program and Genome Sciences Training Program*
- Mark Hill (Sept, 2017-) Ph.D. from University College London, advisor Dr. Max Reuter
- Jennifer Lachowiec (2014-2017) Ph.D. from U. Washington, advisor Dr. Christine Queitsch  
*Funded by NIH Genome Sciences Training Program and NIH NRSA fellowship*  
*Assistant Professor, Montana State University*
- Andrea Hodgins-Davis (2014-2019) Ph.D. from Yale, advisor Dr. Jeffrey Townsend  
*Funded by NIH NRSA fellowship*
- Fabien Duveau (2012-2017) 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  
*Postdoc, University of California – Davis (advisor: Dr. Susan Lott)*
- Richard Lusk (2011-2015), Ph.D. from UC Berkeley, advisor Dr. Michael Eisen  
*Funded by NIH NRSA fellowship*  
*McKinsey Consulting group (Started March 2015)*
- Arielle Cooley (2009-2012), Ph.D. from Duke University, advisor Dr. John Willis  
*Funded by NIH NRSA fellowship*  
*Assistant Professor, Whitman College (started August 2012)*
- Ulises Rosas (2009), Ph.D. from John Innes Centre, advisor Dr. Enrico Coen  
*Funded by Darwin Award from British Council*  
*Faculty, Instituto de Biología, at the Universidad Nacional Autónoma de México (Started Nov 2015)*
- Joseph Coolon (2008-2013), Ph.D. from Kansas State U., advisor Dr. Michael Herman  
*Funded by NIH NRSA fellowship*  
*Assistant Research Scientist, University of Michigan*  
*Assistant Professor, Wesleyan University (Started August 2015)*
- Jonathan Gruber (2008-2012), Ph.D. from U. California – Irvine, advisor Dr. Anthony Long  
*Funded by NIH NRSA fellowship*  
*Bioinformatics Scientist, Monsanto (2012-2018), Genomics Scientist at Bayer (2018-present)*

#### Graduate

Anna Redgrave (2019-) PhD student, Ecology and Evolutionary Biology  
*Genome Sciences Training Program*

Tasmine Clement (2018-2020), M.S. student, MCDB Pathways  
 Jun Li (2017-2018) Visiting PhD Student, Central China Normal University  
*Fully funded by China Scholarship Council (CSC)*  
 Henry Ertl (2017-) PhD Student, Ecology and Evolutionary Biology  
 Crisandra (Jade) Diaz (2016-2017) MS Student, Molecular, Cellular, and Developmental Biology  
 Petra Vande Zande (2016-) PIBS/PhD Student, Molecular, Cellular, and Developmental Biology  
*NIH Genetics Training Grant*  
 Joseph Walker (2016-2018) PhD Student, Ecology and Evolutionary Biology (co-advised w/ Stephen Smith)  
*University of Michigan Rackham predoctoral fellowship*  
 Jonathan Massey (2014-2019) Ph.D. student, Ecology and Evolutionary Biology  
*NIH Genetics Training Grant*  
*Janelia Graduate Research Fellowship (HHMI) (advisor: David Stern)*  
*ProQuest Distinguished Dissertation Award for 2020 Honorable Mention*  
 Abigail Lamb (2013-2020), Ph.D. student, Molecular, Cellular, and Developmental Biology  
*NIH Genetics Training Grant*  
*NSF Graduate Research Fellowship*  
 José M. Andrade López (2013-2015), M.S. student, MCDB Pathways  
*PhD program in Biology at Stanford University*  
 Alisha John (2012-2017), Ph.D. student, PIBS/Molecular, Cellular, and Developmental Biology  
 Bing Yang (2012-2017), Ph.D. student, Molecular, Cellular, and Developmental Biology  
*Postdoc with Dr. Scott Rifkin at UCSD*  
 Kraig Stevenson (2009-2014), Ph.D. student, Bioinformatics  
*NIH IGERT Open Data Fellowship (2009-2011)*  
*Program Leader, Data Scientist; Predictive Analytics, Strategy & Insights, Domino's Pizza*  
 Brian Metzger (2010-2015), Ph.D. student, Ecology and Evolutionary Biology  
*University of Michigan Rackham Merit Fellowship,*  
*NIH Genome Sciences Training Grant*  
*ProQuest Distinguished Dissertation Award for 2015*  
 Dave Yuan (2009-2014), Ph.D. student, PIBS/Molecular, Cellular, and Developmental Biology  
*NIH Genetics Training Grant (2009-2011)*  
*Postdoc with Dr. Dmitri Petrov at Stanford University*  
 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

Elli Fackelman (Fall 2018), PIBS  
 Lorraine Horwitz (Winter 2017), PIBS  
 Katherine Wozniak (Fall 2016), MCDB  
 Zhangyuan Yin (Winter 2016), MCDB  
 Ricardo Albanus (Winter 2015), PIBS  
 William Toubiana (Spring 2014), University of Lyon  
 Jiyuan Yang (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

Nicholas Brown (2020-) Undergraduate research assistant  
 Alicia Wang (2019-) Undergraduate researcher (mentor: Henry Ertl)  
 Anati Azhar (2017-) Undergraduate Research Opportunities Program (mentor: Abby Lamb)  
*Honors thesis, 2019 Award winner Undergraduate Research Symposium*  
 Swara Sarvepalli (2017-) Undergraduate researcher (mentor: Petra Vande Zande)  
 Rebecca Tarnopol (2016-) Undergraduate researcher  
*Honors thesis, NSF GRFP, Marshall Nirenberg Life Sciences Honors Award*  
*Started PhD Program at UC Berkeley in September 2019*  
 Kiran Ajani (2016-2017) Undergraduate lab assistant  
 Lisa Kim (2016-2017) Undergraduate researcher  
 Madison Drye (2016-2017) Undergraduate lab assistant  
 Ali Farhat (2016) Undergraduate researcher  
 Hannah Shuman (2016) Undergraduate researcher  
 Patricia Lybrook (2016) Undergraduate researcher  
 Patricia Simmer (2015-2016) Undergraduate researcher  
*Honors thesis*  
*Starting Ross Business School Master of Management in Fall 2017, University of Michigan*  
 Daayun Chung (2014-2017) Undergraduate Research Opportunities Program  
*Honors thesis: Neuroscience (High honors; Director in the Program in Neuroscience Award)*  
*Starting PhD program in Neuroscience in Fall 2017*  
 Emily Roberts (2013-2014) Undergraduate Research Opportunities Program  
 Stephen Tryban (2013-2016) Undergraduate researcher, technician  
*Started MS in Public Health at UM in September 2016*  
 Emily Valice (2012-2014) Undergraduate researcher  
 Natasha Sood (2012-2014), Undergraduate Research Opportunities Program  
 Cassandra Kirkland (2012-2014), Undergraduate Research Opportunities Program  
*2014 UROP summer fellowship*  
 Laura Sligar (2012-2013) Undergraduate researcher  
*PhD program in Biology at University of North Carolina*  
 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*  
*Recipient of NSF Graduate Research Fellowship Program*  
 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*  
 Xiaowei 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), starting Biochemistry and Biophysics PhD program at Texas A&M Fall 2016

Tiffany Brooks (2013) (home institution: University of Cincinnati, Cincinnati, OH), starting Medical School at Ohio State University Fall 2016

*Co-sponsored students (primary advisor)*

Brenna Barton, (F17) MCDB 400 (John Traynor, Pharmacology, UM)

Emma Gerlinger, (F17) MCDB 300 (Jacob Mueller, Ph.D. Human Genetics, UM)

Anita Vaishampayan (W17, F17) MCDB 300 (Benjamin Levi, Plastic Surgery, UM)

Matthew Gologorsky (F16, W17, F17) MCDB 300 (Paul Jenkins, Ph.D., Pharmacology, UM)

Ricki Pad (W15) MCDB 300 (Michal Olszewski, UM)

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-W12) 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 (Fo8 - W10), MCDB 300/400 (Stephen Weiss, Mol. Med & Genet, UM)

Melissa Wylie (Wo8), MCDB 400 (David Burke, Human Genetics, UM)

Whitney Chadwick (Fo7), MCDB 300 (Evan Keller, Pathology, UM)

Kimberly Ku (Fo7, Wo8), MCDB 300/MCDB 400 Yongqun He, Micro and Immun, UM)

Shayna Ravindran (Wo7), MCDB 300, (Paresh Patel, Mol & Behav Neuro Inst)

Jeff Gibson (Wo6, Fo6), MCDB 300, 400 (Deneen Wellik, Dept. of CDB, UM)

Patrick McLaren (Fo6, Wo7), EEB 300 (Julia Richards, Kellogg Eye Center, UM)

Neha Sekhri (Fo6), MCDB 300 (Madhavi Kadakia, Wright State University)

Kelly Daws (Fo6), MCDB400 (Benedict Lucchesi, Dept of Pharmacology, UM)

#### K-12 lab experiences

Alyssa McKinney, 12<sup>th</sup> grader at Ida High School, Ida, MI (2017)

Sanjana Sathrasala, 11<sup>th</sup> grader at Canton, Canton, MI (2015)

Jalen Copeland, 8<sup>th</sup> 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  
 Anne Sonnenschein, Michigan State University (major advisor, David Arnosti) 2011-2017  
 Chuan Li, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2011- 2017  
 Jin Liu, Biology department, Wayne State University (major advisor, Aleksander Popadic) 2011-2016  
 Katherine Gurdziel, Bioinformatics (major advisor, Deb Gumucio), 2012-2015  
 Junrui Xu, Bioinformatics (major advisor, Jianzhi Zhang), 2012-2015  
 Qingxuan Song, MCDB (major advisor, Anuj Kumar), 2012-2013  
 Daniel Zinder, Bioinformatics (major advisor, Mercedes Pascal) 2012-2015  
 Bryan Moyers, Bioinformatics (major advisor, Jianzhi Zhang) 2013-2016  
 Alexander Taylor, Ecology and Evolutionary Biology (major advisor, Yin-Long Qiu) 2013-2018  
 Wei-Chin Ho, Ecology and Evolutionary Biology (major advisor, Jianzhi Zhang), 2013-2017  
 Thomas Jenkinson, Ecology and Evolutionary Biology (major advisor, Tim James), 2013-2017  
 Matthew Pauly, Microbiology and Immunology (major advisor, Adam Luring), 2013-2016  
 Ling Huang, Molecular, Cellular, and Devel Biology (major advisor, John Schiefelbein) 2013-2016  
 Eric Cosky, Molecular, Cellular, and Devel Biology, Pathway Masters (advisor, Anuj Kumar) 2013- 2015  
 Emily Maclary, Bioinformatics (major advisor: Sundeep Kalantry) 2015-2016  
 Shiya Song, Human Genetics (major advisor, Jeffrey Kidd) 2015-2016  
 Xinzhu 'April' Wei, Ecology and Evolutionary Biology (major advisor: Jianzhi Zhang) 2015-2018  
 Chetna Gopinath, Human Genetics (major advisor: Anthony Antonellis) 2015-2017  
 Zhengting Zou, Bioinformatics (major advisor: Jianzhi Zhang) 2015 – 2017  
 Alyssa Kruger, Human Genetics (major advisor: Jacob Mueller) 2016-  
 Shriya Sethuraman, Bioinformatics (major advisor: Andrzej Wierzbicki) 2016-  
 Mengyi Sun, Ecology and Evolutionary Biology (major advisor: Jianzhi Zhang) 2016-  
 Ricardo Albanus, Bioinformatics (major advisor: Stephen Parker) 2017-2020  
 Robert Powers, Ecology and Evolutionary Biology (major advisor: Timothy James) 2017-  
 Adrienne Shami, Human Genetics (major advisor: Sue Hammoud) 2017-  
 Torrin McDonald, Human Genetics (major advisor: Alan Boyle) 2017-  
 Melissa Englund, Human Genetics (major advisor: Alan Boyle) 2017-  
 Haiqing Xu, Ecology and Evolutionary Biology (major advisor: Jianzhi Zhang) 2017-  
 Daniel Lyons, Ecology and Evolutionary Biology (major advisor: Adam Luring) 2018-  
 Sonal Gupta, Ecology and Evolutionary Biology (major advisor: Regina Baucom) 2018-  
 Xukang Shen, Ecology and Evolutionary Biology (major advisor: Jianzhi Zhang) 2018-  
 Daohan (Rex) Jiang, Ecology and Evolutionary Biology (major advisor: Jianzhi Zhang) 2018-  
 John David Curlis, Ecology and Evolutionary Biology (major advisor: Alison Davis-Rabosky) 2019-  
 Elli Fackelman, Molecular, Cellular, and Developmental Biology (major advisor: Laura Buttita) 2019-  
 Eshna Jash, Molecular, Cellular, and Devel Biology (major advisor: Gyorgyi Csankovszki) 2019-

#### External thesis evaluator

2017 Elvira Lafuente, Instituto Gulbenkian de Ciência, Oeiras, Portugal (major advisor, Patricia Beldade)  
 2014 Jukka-Pekka Verta, Biology Department, Univ of Laval, Québec, Canada (major advisor, Christian Landry)

## Service

### Professional:

2019 Society for Molecular Biology and Evolution, Fitch Prize selection committee  
 2019 Society for the Study of Evolution, Dobzhansky Award selection committee  
 2018, 2019 Society for the Study of Evolution, Rosemary Grant Award selection committee  
 2018-2019 Society for the Study of Evolution (SSE), Student Workshop committee, chair  
 2019- xx Senior Advisor, Graduate Training Program in Evolution of Gene Expression, Johannes Gutenberg University Mainz and Institute for Molecular Biology, Mainz, Germany

2018 Society for Molecular Biology and Evolution, External advisory committee for dispute resolution  
 2018 Society for Molecular Biology and Evolution, Faculty Awards, Judge  
 2017 Panelist, LIFT-TTA (Transition to Associate Professor), ADVANCE, University of Michigan  
 2017 Nominating Committee, Genetics Society of America (GSA)  
 2017-2019 Society for the Study of Evolution (SSE), (elected), Councilor  
 2016 Panelist, "Gameful Learning" Workshop, CRLT, University of Michigan  
 2016 Moderator, Provost's Seminar on Teaching, REBUILD, University of Michigan  
 2016 Panelist, LIFT-TTA (Transition to Associate Professor), ADVANCE, University of Michigan  
 2016 Judge for poster competition, Society of Molecular Biology and Evolution (~1000 attendees)  
 2016 Selection committee, James Crow award, The Allied Genetics Conference, Orlando, FL (July 2016)  
 2016 Panelist, New Faculty Workshop, The Allied Genetics Conference, Orlando, FL (July 2016)  
 2016 Invited speaker, Colloquium on Human Genetics Education, Duke University (April 2016)  
 2015 Panelist, Community Connection: *Bridges to Science 2015*, University of Michigan (July 2015)  
 2015 Leader, Evolution and Development Education Workshop, PanAmEvoDevo, Berkeley, (Aug 2015)  
 2015 Panelist, The Art of Leading a Research Group, University of Michigan (Dec 2015)  
 2015 Panelist, LSA Teaching Academy "Active Learning in Large Courses", University of Michigan (Aug 2015)  
 2014-2017 Education officer, PanAmerican Society of Evolutionary Developmental Biology  
 2014 Founding Member, PanAmerican Society of Evolutionary Developmental Biology  
 2014 Faculty speaker, Honors Graduation Ceremony, University of Michigan (May 2014)  
 2014 Panelist, "Preparing Future Faculty" Seminar, University of Michigan (May 2014)  
 2014-2016 REBUILD: Researching Evidence Based Undergraduate Instructional and Learning Developments  
 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, 48<sup>th</sup> 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:

*eLife*, Senior Editor (2016-)

*Genetics*, Associate Editor (2018-)

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

*eLife*, Board of Reviewing Editors (2016)

*Trends in Genetics*, Advisory Editorial Board (2015-2020)

*Genome Biology and Evolution*, Associate Editor (2012-2018)

*Heredity*, Editorial board member (2012-2015)

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

*PLoS Genetics*, guest associate editor (2009, 2011, 2012, 2013, 2015)

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

*Evolution*, Associate editor (2009-2012)

#### Reviewing activity: Grants

National Institutes of Health (MIRA review panel, New investigator award) 2019, 2020

National Institutes of Health (Genomics, Computational Biology and Technology Study Section) 2017

National Institutes of Health (Genetics, Variation, and Evolution Study Section) – 2014, 2016, 2019

National Institutes of Health (Project Grant Special Panel) – 2014, 2016

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  
 Portuguese Foundation for Science and Technology  
 Wellcome Trust, Sir Henry Dale Fellowship

**Reviewing activity: Academic Journals**

<i>BMC Evolutionary Biology</i>	<i>Molecular Biology and Evolution</i>
<i>BMC Genomics</i>	<i>Molecular Systems Biology</i>
<i>Cell</i>	<i>Nature</i>
<i>Current Biology</i>	<i>Nature Genetics</i>
<i>Development</i>	<i>Nature Reviews Genetics</i>
<i>Evolution and Development</i>	<i>Philosophical Transactions B</i>
<i>FLY</i>	<i>Plant Cell</i>
<i>Gene</i>	<i>PLoS Biology</i>
<i>Genetica</i>	<i>PLoS Genetics</i>
<i>Genetics</i>	<i>PLoS ONE</i>
<i>Genome Biology</i>	<i>Proceedings of the National Academy of Sciences</i>
<i>Genome Biology and Evolution</i>	<i>Proceedings of the Royal Society B</i>
<i>Genome Research</i>	<i>Science</i>
<i>Heredity</i>	<i>Trends in Ecology and Evolution</i>
<i>Journal of Molecular Evolution</i>	<i>Trends in Genetics</i>

**Reviewing activity: Books**

2006 "Introduction to Genetic Analysis", (9<sup>th</sup> 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" (1<sup>st</sup> edition)  
 S.B. Carroll, J.K. Grenier, S.D. Weatherbee (Blackwell Science)  
 2000 "A primer of Genome Science" (1<sup>st</sup> edition)  
 G. Gibson and S. Muse (Sinauer Publishing)

**Past and Present Membership in Professional Societies:**

Genetics Society of America  
 PanAmerican Society for Evolutionary Developmental Biology  
 Society of Molecular Biology and Evolution  
 American Association for the Advancement of Science  
 Society of Developmental Biology  
 Society for the Study of Evolution  
 American Society of Naturalists

**University Service:**

2018-2019 LSA Dean Search Advisory Committee  
 2018 Precision Health Faculty Advisory Committee (FAC)  
 2017- Biosciences Initiative Coordinating Committee (BICC)

2017 13 member committee responsible for distributing \$150 million dollars and 30 faculty positions to enrich Biosciences across the University of Michigan  
Henry Russel Award Committee (Rackham)

**College (LSA) Service:**

2016 – 2017 Associate Professor Rank Committee (LSA)

**Departmental Service:**

2019-2020 Sabbatical leave (but still met with Alison Davis Rabosky and Josie Clowney)

2018-2019 Associate Chair for Graduate Studies, EEB (includes chairing Admissions committee and Graduate Affairs Committee)  
Senior career advisor for Josie Clowney, MCDB  
Steering committee, Genome Sciences Training Program (NIH training grant)  
Faculty mentor for Alison Davis Rabosky (EEB)

2017-2018 Associate Chair for Graduate Studies, EEB (includes chairing Admissions committee and Graduate Affairs Committee)  
Senior career advisor for Josie Clowney, MCDB  
ADVANCE Launch Committee for Josie Clowney  
Steering committee, Genome Sciences Training Program (NIH training grant)  
Faculty mentor for Alison Davis Rabosky (EEB)  
EEB Promotion Review Panel: Regina Baucom

2016-2017 EEB-MCDB Preview weekend, presenter/panelist  
Associate Chair for Graduate Studies, EEB (includes chairing Admissions committee and Graduate Affairs Committee)  
Steering committee, Genome Sciences Training Program (NIH training grant)  
Faculty mentor for Regina Baucom (EEB)  
Faculty mentor for Alison Davis Rabosky (EEB)  
Launch Committee: Melissa Duhaime  
Internal Subject Matter Expert for Ro1 bootcamp: Alan Boyle (Computational Medicine and Bioinformatics)

2015-2016 EEB Promotion Review Panel: Catherine Badgley, Elizabeth Tibbetts, Rich Raebeler  
EEB Promotion Review Panel: Timothy James  
EEB Promotion Committee: Christopher Dick  
Prelim Evaluation committee (Jenna Clem), MCDB  
Faculty mentor for Regina Baucom (EEB)  
Internal Subject Matter Expert for Ro1 bootcamp: Alan Boyle (Computational Medicine and Bioinformatics)  
Associate Chair for Graduate Studies, EEB (includes chairing Admissions committee and Graduate Affairs Committee)  
Steering committee, Genome Sciences Training Program (NIH training grant)

2014-2015 Faculty mentor for Regina Baucom (EEB)  
Steering committee, Genome Sciences Training Program (NIH training grant)  
Associate Chair for Graduate Studies, EEB (includes chairing Admissions committee and Graduate Affairs Committee)  
Prelim Evaluation committee (Raymond Cavalcante), Bioinformatics  
Prelim Evaluation committee (Nebibe Matlu), MCDB

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 – 2 <sup>nd</sup> 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 – 1 <sup>st</sup> 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	<i>Pre-tenure "nurturing" leave</i>
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

2015	Hosted lab visit from AP Biology course (Hartland High School, Hartland, MI)
2014	Faculty volunteer for FEMMES (Females Excelling More in Math, Engineering, and Sciences) Capstone event
2013	Class visit, 5 <sup>th</sup> 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, 8 <sup>th</sup> 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, 5 <sup>th</sup> 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 (1 <sup>st</sup> grade) and Deerfield, WI (3 <sup>rd</sup> 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 <i>Nature Education's</i> 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 historically underrepresented groups

2018-2020	Mentor, Master's student in MCDB Pathways program
2017-2020	Mentor, Presidential Postdoctoral Fellow
2015	Panelist and lead lab tour for incoming freshmen in Summer Bridge program
2015-2016	Committee member for MCDB pathways program student, Eric Cosky
2014	Panelist at dinner with M-Bio students, which is a group for underrepresented students
2013-2015	Mentor, Master's student in MCDB Pathways program
2009	Research rotation mentor for EEB Frontiers Masters Program student (William Webb)
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

2020	Interviewed for "Discovering Alabama" TV series, talking about Evolution
2019-2021	- Developing museum exhibit for UMMZ
2017	- Interviewed for two episodes of "How to Science" podcast by Monica Dus and Liz Wason
2016	- Comment on Research Study from Hopi Hoekstra group published in <i>The Atlantic</i>
2016	Saturday Morning Physics Colloquium presentation, open to the public
2015	UM Press release ("Consistency is the key to success in bread baking and biology")
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 <i>Science</i> magazine article: ( <i>Science</i> <b>326</b> : 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 <i>Science</i> magazine article: ( <i>Science</i> <b>321</b> : 760-763) "Deciphering the genetics of evolution"
2006	Interviewed for <i>Seed</i> magazine article: "The spotty history of fruit flies" (4/23/06)
2005	Work featured in a cover story of <i>Wisconsin State Journal</i> (2/3/05) called "The key to evolution?"
2005	Interviewed for article in <i>Chronicles of Higher Education</i> : "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
2016-17	ADVANCE Leadership Coaching Program with Christine D. Euritt

