

Jack M. Colicchio, Ph.D.

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2007 - 2011	Dickinson College	Biological Sciences, B.S.
	Thesis: Phenotypic Plasticity and transgenerational epigenetic inheritance in response to varying light levels	
	Advisor: Carol Loeffler	
2011 - 2016	University of Kansas	Ecology and Evolutionary Biol., Ph.D.
	Dissertation: The Molecular and Evolutionary Outcomes of Transgenerational Phenotypic Plasticity in <i>Mimulus guttatus</i>	
	Advisors: Lena Hileman and John Kelly	

*Postdoctoral Scholar*

2016- University of California, Berkeley  
 Research: Genetic and epigenetic basis of adaptation and acclimation in western US *Mimulus*  
 Supervisor: Benjamin K. Blackman

1. Monnahan P.J.&, **Colicchio J.M.**&, Fishman L., MacDonald S.J., Kelly J. K. Measuring selection at the DNA level in a natural *Mimulus* population. *Accepted at PLoS Genetics*.
2. **Colicchio J.M.**, Kelly J.K., Hileman, L.H. (2020). *Mimulus* sRNAs are wound responsive and associated with transgenerationally plastic genes but rarely both. *IJMS*, 21(20) 7552.
3. Kooyers N.K., Morioka K.A., **Colicchio J.M.**, Clark K.S., Donofrio A., Estill S. K., Pascualy C.R., Anderson I.C., Hagler, M., Cho, C., Blackman, B.K. (2020) Population responses to a historic drought across the range of the common monkeyflower (*Mimulus guttatus*). *American Journal of Botany (in press)*.
4. **Colicchio J.M.**, Herman J. (2020). Environmental oscillations favor the evolution of adaptive transgenerational plasticity. *Ecology and Evolution*, 10 (3) 1648-1665.
5. **Colicchio J.M.**, Monnahan P.J., Wessinger C.A., Kern J.R.\*, Kelly J. K. (2020). Individualized mating system estimation using genomic data. *Molecular Ecology Resources*, 20(1) 333-347.
6. Kooyers N.J., **Colicchio J. M.**, Greenlee A. B., Paterson E., Handloser N.T.\*, Blackman B. K. (2019). Lagging adaptation to climate change supersedes local adaptation to herbivory in an annual monkeyflower. *American Naturalist*, 194 (4) 541-557.
7. **Colicchio J.M.**, Kelly J.K., Hileman L.C. (2018). Parental experience modifies the *Mimulus* methylome. *BMC genomics*, 19(1), 746.
8. **Colicchio J.M.** (2017). Transgenerational effects alter plant defense and fitness in nature. *Journal of Evolutionary Biology*, 30(4), 664-680.
9. **Colicchio J.M.**, Miura F., Kelly J.K., Ito T., Hileman L.C. (2015). DNA methylation and gene expression in *Mimulus guttatus*. *BMC Genomics*, 16(1), 507.
10. Monnahan P.J., **Colicchio J.M.**, Kelly J.K. (2015). A genomic selection component analysis characterizes migration-selection balance. *Evolution*, 69(7), 1713-1727.
11. Erwin A.A., Galdos M.A., Wickersheim M.L., Harrison C.C., Marr K.D., **Colicchio J.M.**, Blumenstiel J.P. (2015). piRNAs Are Associated with Diverse Transgenerational Effects on Gene and Transposon Expression in a Hybrid Dysgenic Syndrome of *D. virilis*. *PLoS Genetics*, 11(8).
12. Kooyers N.J., Greenlee A.B., **Colicchio J.M.**, Oh M., Blackman B.K. (2015). Replicate altitudinal clines reveal that evolutionary flexibility underlies adaptation to drought stress in annual *Mimulus guttatus*. *New*

Phytologist, 206(1), 152-165.

13. **Colicchio J.M.**, Monnahan P.J., Kelly J.K., Hileman L.C. (2015). Gene expression plasticity resulting from parental leaf damage in *Mimulus guttatus*. *New Phytologist*, 205(2), 894-906.

*Manuscripts in preparation/submission*

14. **Colicchio J.M.**, Anderson I.\*, Yuki C.\*, Blackman B.K. The evolution of senescence and obligate annualism in *Mimulus laciniatus*. *Revisions at American Journal of Botany*.
15. **Colicchio J.M.**, Akman M., Blackman B.K. Gene expression variation in *Arabidopsis* driven by adaptation to local climate. *In review at PNAS*.
16. **Colicchio J.M.**, Hamm L., Verdonk H., Kooyers N. The genomic landscape of climate adaptation across central Oregon *Mimulus guttatus*. *In prep for Molecular Ecology*.

\*: Undergraduate Mentee

&: Equal contribution

### Invited Seminars

- 2020 **Colicchio J.M.**, Blackman, B.K. Parental temperature effects on phenology and physiology in the field and growth chamber. Botany 2020.
- 2019 **Colicchio J.M.**, Blackman, B.K. Transgenerational plasticity to temperature in *Mimulus laciniatus*. European Society of Evolutionary Biology (ESEB) conference. Turku, Finland. (oral)
- 2018 **Colicchio J.M.**, Anderson I., Blackman B.K. Natural variation for transgenerational plasticity. Jepson and University Herbaria Botany Lunch Seminar, Berkeley, CA.
- 2017 **Colicchio J.M.** The Evolution and Ecology of Epigenetic Inheritance in *Mimulus guttatus*. Invited seminar speaker. Linfield College, McMinnville, OR.
- 2015 **Colicchio J.M.**, Kelly J.K., Hileman L.C. Epigenetics, Evolution, and Plasticity in *Mimulus guttatus*. MicroMORPH Phenotypic Plasticity Workshop, Arnold Arboretum and Harvard University, Boston, MA.

### Selected Contributed Talks and Posters (5 talks and 2 posters)

- 2018 **Colicchio J.M.**, Blackman, B.K. Environmental variation and the evolution of complex traits. Plant and Microbial Biology Retreat. Marconi, CA. (oral)
- 2017 **Colicchio J.M.**, Kelly J.K., Hileman L.C., Blackman, B.K. Transgenerational effects in *Mimulus*. New Phytologist Symposium: Plant Epigenetics. Vienna, Austria. (oral)  
**Colicchio J.M.**, Kelly J.K., Hileman L.C. Stressful memories in *Mimulus guttatus*. Evolution Conference, Portland, OR. (oral)
- 2014 **Colicchio, J.M.**, Mirua F., Ito T., Hileman L.C. Insight into the *Mimulus guttatus* methylome. Plant Biology Conference, Portland, OR. (poster)
- 2013 **Colicchio J.M.**, Kelly J.K., Hileman L.C. *Gene Expression Plasticity in M. guttatus*. Evolution Conference, Snowbird, Utah. (oral)
- 2012 **Colicchio J.M.**, Kelly J.K., Hileman L.C. Patterns of heritable gene expression due to variable parental conditions. Ecological Genomics, Kansas City, MO. (poster)

### Grants and Honors

- National Institute of Health NIGMS Ruth L. Kirschstein NRSA F-32. Genetic Variation and the Heritability of Epigenetic Responses to Temperature. 1 F32 GM125244-01. \$173,196. 8/17 – 8/20
- ESEB Stearns Graduate Student Prize. Winner selected by editorial team as best paper by graduate student published in *Journal of Evolutionary Biology* in 2017: “Transgenerational effects alter plant defense and resistance in nature”. \$4,000. 2018.
- New Phytologist Travel Grant. *New Phytologist*. \$800. 2017
- Arthur J. Mix Scholarship Fund. The University of Kansas. \$3,500. 2016

- Polson Scholarship Fund. The University of Kansas. \$2,100. 2015
- Hall Plant Biology Fund. The University of Kansas. \$3,000. 2015
- NSF MicroMORPH Travel Award. Harvard University. 2015
- Botany Endowment. The University of Kansas. \$2,700/year. 2013-2015
- NSF MicroMORPH Grant. \$4,500. Methylome Research at Todai University, Tokyo, Japan. 2013
- Summer Fellowship for Statistical Genomics. University of Seattle. \$2,100. 2012.

## Teaching Experience

<i>San Francisco State University-</i>	Evolutionary Biology (Guest lecture on Epigenetics, 2019)
<i>University of California Berkeley-</i>	Applied Computational Genomics (Co-instructor, Spring 2017)
	Graduate seminar in evolution (3 Guest lectures, 2017 - 2019)
<i>University of Kansas-</i>	Biostatistics (TA, Fall 2014, 2015)
	Evolutionary Biology (TA, Spring 2014, 2015)
	Introductory Biology (TA, Fall 2013)
	Honors Genetics (TA, Spring 2012)
<i>Dickinson College-</i>	Plant Systematics (TA, Spring 2010)

## Mentoring Experience

Undergraduate Mentoring: Sandhu Sukhinder<sup>#</sup> (2012 - 2014), Nic Nolte (2015 -2016), James Kern (2015 - 2016), Ian Anderson<sup>\*</sup> (2016 - 2018 ), Cameron Yuki<sup>#</sup> (2017 - ), Aspen Smith (2017 - ), Sean Adams<sup>\*</sup> (2018 - ), Hannah Verdonk (2018 - 2019), Kyra Lee (2019 - )

<sup>#</sup>: Honors thesis

<sup>\*</sup>: Student research award

Graduate Student Co-Mentoring: Tim Jeffers (2017), Helen Liu (2018), Lauren Hamm (2019)

## Service and Outreach

- Manuscript reviewing service
  - The American Naturalist, Annals of Botany, Ecosphere, Evolutionary Ecology, Frontiers in Plant Science, Journal of Chemical Ecology, Molecular Ecology, New Phytologist, Plant Biology, PloS ONE Proceedings of the Royal Society B, Scientific Reports, Heredity
- University Service
  - University of Kansas Men's Ultimate Frisbee Head Coach (2015-2016)
  - University of Kansas Women's Ultimate Frisbee Assistant Coach (2014)
- Community Outreach
  - Presented ongoing lab research to museum visitors at California Academy NightLife (2018)
  - Surveying segments of the Pacific Crest Trail in North Cascades and Yosemite National Park for the Walking with Wildflowers citizens science phenology project (<https://pct.usanpn.org>; 2016-present)
  - Designed permaculture edible garden for use on campus at Dickinson College (2011).
  - Assistant scientist with the US Environmental Protection Agency. Worked on projects including electro-fishing to test the health of north-eastern US streams and week-long trip in the North Atlantic surveying ocean algal communities. Surveyed the Hudson river by boat and helicopter to quantify the success of remediation projects. (2010-2011)
  - Forest guide and plant identification for Union County BioBlitz (2010)