

MATTHEW GIBSON

[gibsonmatt.github.io](https://github.com/gibsonmatt)

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gibsomat@indiana.edu

EDUCATION

Indiana University

2016 -

Ph.D. in Evolution, Ecology, and Behavior, minor in bioinformatics

Advisor: Leonie C. Moyle

University of Kansas

2011 - 2016

Bachelor of Science in Genetics, with honors

Thesis: *Connecting the Breeding System to Mating Patterns in Macaronesian *Tolpis**

Advisors: Mark E. Mort and Daniel J. Crawford

PUBLICATIONS

* Equal Contribution

Gibson, M.J.S., Lourdes Torres, M., Brandvain, Y., & Moyle, L.C. (2021). Reconstructing the history and biological consequences of a plant invasion on the Galapagos islands. *eLife*. 10: e64165. doi: 10.7554/eLife.64165. [BioRxiv: 10.1101/2020.09.26.313627]

Moyle, L.C., Wu, M., **Gibson, M.J.S.** (2021). Reproductive proteins evolve faster than non-reproductive proteins among *Solanum* species. *Frontiers in Plant Science*. In Press [BioRxiv: 10.1101/2020.11.30.405183]

Hibbins, M.S., **Gibson, M.J.S.**, & Hahn, M.W. (2020). Determining the probability of hemiplasy in the presence of incomplete lineage sorting and introgression. *eLife*. 9: e63753. doi: 10.7554/eLife.63753. [BioRxiv: 10.1101/2020.04.15.043752]

Gibson, M.J.S.*, Crawford, D.J.*, Holder, M.T.*, Mort, M.E., Kerbs, B., Menzes de Sequeira, M., Kelly, J.K. (2020). Genome-wide genotyping estimates mating system parameters in the island species *Tolpis succulenta*. *American Journal of Botany*. 107(8): 1189-1197. doi: 10.1002/ajb2.1515.

Gibson, M.J.S. & Moyle, L.C. (2020). Regional differences in the abiotic environment contribute to genomic divergence within a wild tomato species. *Molecular Ecology*. 29(12): 2204-2217. doi: 10.1111/mec.15477. [BioRxiv: 10.1101/744797]

Gibson, M.J.S., Lourdes Torres, M., & Moyle, L.C. (2020). Local extirpation is pervasive among historical populations of Galapagos endemic tomatoes. *Evolutionary Ecology*. 34: 289-307. doi: 10.1007/s10682-020-10035-3. [BioRxiv: 10.1101/744797]

Jewell, C.P., Zhang, S., **Gibson, M.J.S.**, Tovar-Mendez, A., McClure, B., & Moyle, L.C. (2020). Intraspecific standing variation underlying reproductive barriers between species in the wild tomato clade (*Solanum* sect. *Lycopersicon*). *Journal of Heredity*. esaa003: 1-11. doi: 10.1007/s10682-020-10035-3 [BioRxiv: 10.1101/718544]

Kostyun, J.L., **Gibson, M.J.S.**, King, C.M., & Moyle, L.C. (2019). A simple genetic architecture and low constraint allows rapid floral evolution in a diverse and recently radiating plant genus. *New Phytologist*. 223: 1009-1022. doi: 10.1111/nph.15844

Kerbs, B., Ressler, J., Kelly, J.K., Mort, M.E., Santos-Guerra, A., **Gibson, M.J.S.**, Caujape-Castells, J., & Crawford, D.J. (2017). Variation in synthetic interspecific hybrids of *Tolpis* (Asteraceae) in the Canary Islands: novel character combinations, transgressive traits, and phenotypic lines. *AoB Plants*. 9(5): plx043. doi: 10.1093/aobpla/plx043

PRESENTATIONS

[†] Presenter

- Gibson, M.J.S.[†]**, Lourdes Torres, M., Brandvain, Y., & Moyle, L.C. (2021). Reconstructing the history and biological consequences of a plant invasion on the Galapagos islands. Contributed presentation. *SICB Island Biology Special Session in honor of Vicky Funk*.
- Gibson, M.J.S.[†]**, Lourdes Torres, M., Brandvain, Y., & Moyle, L.C. (2021). Reconstructing the history and biological consequences of a plant invasion on the Galapagos islands. Contributed presentation. *IU EEB Brown Bag series*.
- Gibson, M.J.S.[†]**, Lourdes Torres, M., Brandvain, Y., & Moyle, L.C. (2020). Reconstructing the history and biological consequences of a plant invasion on the Galapagos islands. Contributed presentation. *SOL International Online Meeting*.
- Gibson, M.J.S.[†]**, Lourdes Torres, M., & Moyle, L.C. (2019). Demographic histories of tomato species on the Galapagos islands: genomic consequences of a biological invasion. Contributed presentation. *Galapagos Conservation and Research Symposium*. San Cristobal, Galapagos, Ecuador
- Gibson, M.J.S.[†]**, Lourdes Torres, M., & Moyle, L.C. (2019). Demographic and genomic threats to endemic tomato species on the Galapagos islands: evidence for local hybridization and extinction. Contributed poster. *Plant Sciences Symposium*. Davis, California.
- Hibbins, M.[†], **Gibson, M.J.S.**, Guerrero, R.F., & Hahn, M.W. (2019) Introgression greatly increases the probability of hemiplasy in phylogenetic inference. Poster. *Evolution*. Providence, RI.
- Gibson, M.J.S.[†]** & Moyle, L.C. (2018). Rapid phenotypic evolution is unconstrained by pleiotropy in the florally diverse genus *Jaltomata*. Poster. *American Genetic Association Presidents Symposium*. Toronto, Canada
- Gibson, M.J.S.[†]**, Josephs, E.B., & Moyle, L.C. (2017). Parallel QTL mapping of shared and unique loci for adaptation and reproductive isolation between *Solanum* species. Poster. *Midwest Ecology and Evolution Conference*. Champaign, Illinois, USA
- Gibson, M.J.S.[†]** (2016). Connecting the Breeding System to Mating Patterns in Macaronesian *Tolpis*. Presentation. *Undergraduate Research Symposium*. Lawrence, Kansas, USA.
- Mort, M.E.[†], Archibald, J.K., **Gibson, M.J.S.**, Bontrager, H., Hauber, D.P., Borges Silva, L., Menezes de Sequeira, Moura, M., Santos-Guerra, A., Kelly, J.K., Gruenstaeudl, M., Juli Caujape-Castells, & Crawford, D.J. (2016). The utility of Multiplexed-Shotgun-Genotyping (MSG) for resolving phylogenetic relationships within and among oceanic archipelagos: an example from Macaronesian *Tolpis* (Asteraceae). *Island Biology*. Azores, Portugal.
- Mort, M.E.[†], Archibald, J.K., **Gibson, M.J.S.**, Bontrager, H., Hauber, D.P., Borges Silva, L., Menezes de Sequeira, Moura, M., Santos-Guerra, A., Kelly, J.K., Gruenstaeudl, M., Juli Caujape-Castells, & Crawford, D.J. (2016). Analyses of Multiplexed-Shotgun-Genotyping (MSG) data reveal cryptic biodiversity in Macaronesian *Tolpis*. *Island Biology*. Azores, Portugal.

SOFTWARE

HeIST: Hemiplasy Inference and Simulation Tool. Hibbins, M. & Gibson, M.J.S. 2020.
[<https://github.com/mhibbins/HeIST>]

TEACHING EXPERIENCE

| | |
|---|------|
| Assistant Instructor, BIOL 318 Evolution, Indiana University | 2021 |
| Assistant Instructor, BIOL 318 Evolution, Indiana University | 2020 |
| Helper, Command Line Bioinformatics for Beginners Workshop, ECR ² Conference | 2020 |
| Assistant Instructor, R Programming Boot camp, Indiana University | 2019 |
| Guest lecture on climate change and adaptation, BIOL 318 Evolution, Indiana University | 2019 |

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| Assistant Instructor, BIOL 318 Evolution, Indiana University | 2019 |
| Instructor, Our Evolving World, Indiana University | 2018-2019 |
| Assistant Instructor, BIOL 111 Evolution and Diversity, Indiana University | 2018 |
| Guest lecture on genetic mapping, BIOL 318 Evolution, Indiana University | 2017 |
| Assistant Instructor, BIOL 318 Evolution, Indiana University | 2017 |
| Assistant Instructor, BIOL 113 Biology Laboratory, Indiana University | 2016-2017 |
| Undergraduate Teaching Assistant, Human Anatomy, University of Kansas | 2015 |

AWARDS/HONORS (\$153,226)

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|--|-----------|
| William Ogg Final Year Fellowship, Indiana University, \$10,000 (declined) | 2021 |
| USDA NIFA Predoctoral Fellowship [†] , \$119,726 | 2021 |
| American Genetic Association EECG Research Award, \$6000 | 2021 |
| American Society of Naturalists George Gilchrist Student Research Award, \$2000 | 2020 |
| Charles Heiser Fellowship, Indiana University, \$2000 | 2020 |
| George W. Brackenridge Fellowship, Indiana University, \$2500 | 2019 |
| Plant Sciences Symposium Travel Award, UC Davis, \$500 | 2019 |
| Cleland Plant Science Travel Award, Indiana University, \$500 | 2018 |
| Summer Institute in Statistical Genetics Scholarship, University of Washington, \$2000 | 2017 |
| Floyd Plant Biology Fellowship, Indiana University, \$3000 | 2017-2020 |
| Departmental Honors, University of Kansas, | 2016 |
| Undergraduate Research Award, University of Kansas, \$1000 | 2016 |
| Deans List, University of Kansas | 2014-2016 |
| [†] Recommended for funding | |

PROFESSIONAL EXPERIENCE

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| Reviewer, <i>Molecular Ecology</i> , <i>Molecular Biology and Evolution</i> , <i>New Phytologist</i> | |
| Student representative EEB search committee, Indiana University | 2019 |
| Student representative EEB hiring committee, Indiana University | 2018 |

WORKSHOPS

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| Summer Institute in Statistical Genetics, University of Washington | 2017 |
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VOLUNTEER EXPERIENCE

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|---|-----------|
| Mentor, Jim Holland Summer Science Research Program, Indiana University | 2018-2019 |
| Mentor, Groups Scholars STEM Program, Indiana University | 2016-2017 |
| Natural Science Community Organization, University of Kansas | 2015 |