

## Mark S. Hibbins

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## Current Appointment

### EEB Postdoctoral Fellow

June 2022 - Present

Department of Ecology & Evolutionary Biology

University of Toronto, Toronto, ON, CA

## Education

### PhD in Evolutionary Biology (Minor in Bioinformatics)

May 2022

Indiana University, Bloomington, IN, USA.

**Advisor:** Matthew Hahn

### Honours Bachelor of Science with High Distinction

June 2017

Specialist in Ecology & Evolutionary Biology

University of Toronto, Toronto, ON, Canada.

**Senior thesis advisor:** Aneil Agrawal

## Preprints

**Hibbins M.S.**, Hahn M.W. 2022. Distinguishing between histories of speciation and introgression using genomic data. *BioRxiv*. <https://doi.org/10.1101/2022.09.07.506990>

## Peer-Reviewed Journal Articles

**Hibbins M.S.**, Breithaupt L.C, Hahn M.W. 2023. Phylogenomic comparative methods: accurate evolutionary inferences in the presence of gene tree discordance. *PNAS* 120(22): e2220389120.

**Hibbins M.S.**, Hahn M.W. 2022. Phylogenomic approaches to detecting and characterizing introgression. *Genetics* 220(2): iyab173.

**Hibbins M.S.**, Hahn M.W. 2021. The effects of introgression across thousands of quantitative traits revealed by gene expression in wild tomatoes. *PLoS Genetics* 17(11): e1009892.

Vanderpool D., Minh B.Q., Lanfear R., Hughes D., Murali S., Harris R.A., Raveendran M., Muzny D.M., **Hibbins M.S.**, Williamson R.J., Gibbs R.A., Worley K.C., Rogers J., Hahn M.W. 2020. Primate phylogenomics uncovers multiple rapid radiations and ancient interspecific introgression. *PLoS Biology* 18(12): e3000954

**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.

- Hamlin J.A.P., **Hibbins M.S.**, Moyle L.C. 2020. Assessing biological factors affecting post-speciation introgression. *Evolution Letters* 4(2): 137-154.
- Hahn M.W. & **Hibbins M.S.** 2019. A three-sample test for introgression. *Molecular Biology and Evolution*, 36(12): 2878-2882.
- Hibbins M.S.** & Hahn M.W. 2019. The timing and direction of introgression under the multispecies network coalescent. *Genetics* 211(3): 1059 – 1073.
- Rouard M., Droc G., Martin G., Sardos J., Hueber Y., Guignon V., Cenci A., Geigle B., **Hibbins M.S.**, Yahiaoui N., Baurens F.C, Berry V., Hahn M., D'Hont A., Roux N. 2018. Three new genome assemblies support a rapid radiation in *Musa acuminata* (wild banana). *Genome Biology and Evolution* 10(12): 3129 – 3140.

## Presentations

- Hibbins M.S.**, Breithaupt L., Hahn M.W. 2022. Phylogenomic comparative methods: accurate evolutionary inferences in the presence of gene tree discordance. Platform talk. *Evolution*, Cleveland, OH. **Winner of Ernst Mayr Award in Systematic Biology.**
- Hibbins M.S.**, Breithaupt L., Hahn M.W. 2022. Phylogenomic comparative methods: accurate evolutionary inferences in the presence of gene tree discordance. Virtual talk. *Population, Evolutionary, and Quantitative Genetics*, Virtual.
- Hibbins M.S.**, Hahn M.W. 2021. The effects of introgression across thousands of quantitative traits revealed by gene expression in wild tomatoes. Poster. *Midwest Population Genetics*, Madison, WI. **Winner of best late-PhD student poster.**
- Hibbins M.S.**, Hahn M.W. 2021. The effects of introgression across thousands of quantitative traits revealed by gene expression in wild tomatoes. Virtual poster and Q&A. *Society for Molecular Biology and Evolution*, Virtual.
- Hibbins M.S.**, Hahn M.W. 2020. Determining the risk of hemiplasy in the presence of incomplete lineage sorting and introgression. Virtual poster and Q&A. *The Allied Genetics Conference*, Virtual.
- Hibbins M.S.**, Hahn M.W. 2019. Introgression substantially increases the risk of hemiplasy in phylogenetic inference. Poster. *Evolution*, Providence, RI.
- Hibbins M.S.**, Hahn M.W. 2018. Population genetic tests for the direction and relative timing of introgression. Platform talk. *Population, Evolutionary, and Quantitative Genetics*, Madison, WI.
- Hibbins M.S.**, Agrawal A.F. 2017. Mother knows best: parental effects on fitness in *D. melanogaster*. Poster. *EEB Undergraduate Research Fair*, Toronto, ON, CA.

## Teaching & Mentorship Experience

**Undergraduate Mentor**  
 Mentee: Lara Breithaupt  
 Indiana University, Bloomington.

2021-Present

- Mentorship in C++, R, and Bash scripting; planning and carrying out an independent research project; manuscript writing and publication

**Teaching Assistant**, INFO-I590 SNP Discovery & Population Genetics Fall 2020  
Luddy School of Informatics, Computing, & Engineering  
Indiana University, Bloomington.

- Delivered a one-hour introduction to basic command line and Python for bioinformatics
- Assisted students with technical issues relating to class assignments

**Assistant Instructor**, BIOL-L113 Biology Laboratory Fall 2017  
Department of Biology, Indiana University, Bloomington.

- Assisted in the instruction of basic biology laboratory practices, concepts, and principles of experimental design.

## Employment History

**Research Assistant**, Hahn Lab, Indiana University, Bloomington IN. August 2018 – May 2022

**Natural Heritage Educator**, Bon Echo Provincial Park, ON, CA Summers 2014 - 2016

**Classroom Tutor**, Admaston Township Public School, Renfrew, ON, CA May 2014

**Project Wilderness Instructor**, Camp Trillium, Bloomfield, ON, CA Summer 2013

## Awards & Recognitions

**Ernst Mayr Award in Systematic Biology** 2022  
Society of Systematic Biologists, Evolution 2022, Cleveland OH. \$1000 USD.

**EEB Postdoctoral Fellowship**, Department of EEB, University of Toronto, Toronto, ON, CA. 2022  
\$126,000 CAD (\$55k salary + \$8k research support annually for two years).

**Best late-PhD student poster** 2021  
Midwest Population Genetics, Madison, WI, USA

**Edwin J. Crossman Undergraduate Scholarship in Ecology and Evolutionary Biology** 2017  
University of Toronto, Toronto, ON, Canada. \$479 CAD.

**High Distinction**, University of Toronto, Toronto, ON, CA. 2017

**Dean's List**, University of Toronto, Toronto, ON, CA. 2016, 2017

**New College Student Council In-Course Scholarship** 2016  
University of Toronto, Toronto, ON, Canada. \$1500 CAD.

**New College Raptors Foundation In-Course Scholarship** 2015  
University of Toronto, Toronto, ON, Canada. \$1000 CAD.

## Service

**Peer reviewer:** *Systematic Biology* (11x), *Molecular Biology and Evolution* (6x), *PLoS Biology* (4x), *BMC Plant Biology* (3x), *Ecology & Evolution* (2x), *PLoS Genetics* (2x), *Insect Systematics and Diversity* (2x), *Evolution Letters* (2x), *Genome Biology and Evolution*, *New Phytologist*, *PNAS*, *Molecular Phylogenetics and Evolution*, *Molecular Ecology*, *eLife*, *Evolution*

**Committees:** 2022-2023 University of Toronto EEB Wellness Committee; PEEBL co-chair (University of Toronto Postdoc EEB Leadership) (2022-present); Graduate student member of faculty search committee at Indiana University (2019)

**Organized seminars/workshops/journal clubs:** Macroevolution Discussion Group (University of Toronto EEB, 2023), Quantitative Methods in EEB Journal Club (Indiana University, 2019)

**Graduate student host,** Graduate Recruitment Weekend. 2018, 2020, 2021  
Indiana University, Bloomington, IN

## Software

***seastaR*:** Constructs a phylogenetic variance-covariance matrix from gene trees. Co-author with Lara C. Breithaupt. <https://github.com/larabreithaupt/seastaR>

***HeIST*:** Hemiplasy Inference Simulation Tool. Co-author with Matthew J.S. Gibson.  
<https://github.com/mhibbins/HeIST>