Mark S. Hibbins

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Education

PhD Candidate in Evolutionary Biology (Bioinformatics Minor) August 2017 – Present
Indiana University, Bloomington, IN, USA.
Expected graduation in Spring of 2022
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. 2021. The effects of introgression across thousands of quantitative traits revealed by gene expression in wild tomatoes. *BioRxiv*. https://doi.org/10.1101/2021.07.01.450726

Hibbins M.S., Hahn M.W. 2021. Phylogenomic approaches to detecting and characterizing introgression. *EcoEvoRxiv*. https://doi.org/10.32942/osf.io/uahd8

Peer-Reviewed Journal Articles

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.

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

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

Midwest Population Genetics. Madison, WI. Poster. 2021

The effects of introgression across thousands of quantitative traits revealed by gene expression in wild tomatoes

Winner of best late PhD student poster

Society for Molecular Biology and Evolution. Virtual poster and Q&A session. 2021

The effects of introgression across thousands of quantitative traits revealed by gene expression in wild tomatoes

The Allied Genetics Conference. Virtual poster and Q&A session. 2020

Determining the risk of hemiplasy in the presence of incomplete lineage sorting and introgression

IU EEB Brown Bag Seminar, Bloomington, IN. Talk. 2020

Introgression, genealogical discordance, and the evolution of traits

Evolution Meeting, Providence, RI. Poster. 2019

Introgression substantially increases the risk of hemiplasy in phylogenetic inference

Population, Evolutionary, and Quantitative Genetics Conference, Madison, WI. Talk. 2018

Population genetic tests for the direction and relative timing of introgression

EEB Undergraduate Research Fair, Toronto, ON, CA. Poster. 2017

Mother knows best: parental effects on fitness in D. melanogaster

Teaching & Mentorship Experience

Undergraduate Mentor 2021
Mentee: Lara Breithaupt
Indiana University, Bloomington.

- Writing a C++ program which implements Felsenstein's pruning algorithm over a set of gene trees

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
- Aided in coordination of group projects

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 – Present

- Developing methods for evolutionary inference in the presence of gene tree discordance

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

Best later 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

New College Student Council In-Course Scholarship 2016
University of Toronto, Toronto, ON, Canada

New College Raptors Foundation In-Course Scholarship 2015
University of Toronto, Toronto, ON, Canada

Service

Peer reviewer: *Systematic Biology* (6x)*, Molecular Biology and Evolution* (3x)*, Ecology & Evolution* (2x)*, PLoS Genetics* (2x), *Genome Biology and Evolution*

Faculty search committee, Graduate student member. 2019
Indiana University, Bloomington, IN

Quantitative Methods in EEB Journal Club, Organizer. 2019
Indiana University, Bloomington, IN

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

Software

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

***D-statistics*:** Various scripts implementing a suite of *D*-statistics developed for introgression analysis in Hahn & Hibbins 2019, Hibbins & Hahn 2019. https://github.com/mhibbins/D1_D2_scripts
https://github.com/mhibbins/D3_introgression