Mark Stukel

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CURRENT POSITION

Postdoctoral Scholar, Bond Lab 2025 – Present

- Department of Entomology & Nematology, University of California, Davis
- Co-supervised by Michael Forthman at the California Department of Food & Agriculture Plant Pest Diagnostics Center

RESEARCH INTERESTS

Phylogenomics; hybridization; historical biogeography; phylogenetic methods; insect systematics, especially of cicadas and other hemipterans.

EDUCATION

PhD: Ecology and Evolutionary Biology, University of Connecticut 2018 – 2024
Dissertation title: *Phylogenomics and Evolution of Cicadidae: Insights from New Zealand and Across the Globe*
Advisor: Chris Simon
Committee: Paul Lewis, Elizabeth Jockusch, Nick Matzke (University of Auckland)

BS: Biology, Hope College 2012 – 2015

WORKSHOPS ATTENDED

Valencia, Spain. Introduction to Phylogenomics, Oct 7-11, 2019
Woods Hole workshop in Molecular Evolution, May 2022.

FELLOWSHIPS

Fulbright US Graduate Award (10 Months) 2023
School of Biological Sciences & Centre for Computational Evolution, University of Auckland, New Zealand
Originally awarded for 2021, but delayed due to COVID-19 pandemic

GRANTS

External

LinnéSys: Systematics Research Fund ($1,094) 2022
For field observation and collection of New Zealand cicadas during Fulbright award

Internal

UConn Ecology and Evolutionary Biology Student Research Award ($1,500) 2021
For field observation and collection of New Zealand cicadas during Fulbright award

PUBLICATIONS (all peer-reviewed)

Stukel M., Porczak A.E., Gordon E.R.L., Vailionis J., Haji D., Buckley T.R., Lemmon A.R., Lemmon E.M., Simon C. (2024). Phylogenomics improves the phylogenetic resolution and provides strong evidence of mito-nuclear discordance in two genera of a New Zealand cicada (Hemiptera: Cicadidae) species radiation. Systematic Entomology. 49:237–257.

Haji D., Vailionis J., **Stukel M.**, Gordon E., Lemmon E.M., Lemmon A.R., Simon C. (2022). Lack of host phylogenetic structure in the gut bacterial communities of New Zealand cicadas and their interspecific hybrids. Sci Rep. 12:20559.

Sanborn A.F., Cole J.A., **Stukel M.**, Łukasik P., Veloso C., Gonzalez V.A., Karkar J.B., Simon C. (2021). Thirteen new species of Chilecicada Sanborn, 2014 (Hemiptera: Auchenorrhyncha: Cicadidae: Tibicininae) expand the highly endemic cicada fauna of Chile. Zootaxa. 5078:170.

Li J., **Stukel M.**, Bussies P., Skinner K., Lemmon A.R., Lemmon E.M., Brown K., Bekmetjev A., Swenson N.G. (2019). Maple phylogeny and biogeography inferred from phylogenomic data. Journal of Systematics and Evolution. 57:594–606.

PREPRINTS

Stukel M., Simon C. (2025). Untangling a History of Hybridization: A Comparison of Phylogenetic Network Methods in Reconstructing Reticulate Evolution in New Zealand Cicadas. BioRxiv 2025.03.04.641558. doi: https://doi.org/10.1101/2025.03.04.641558

INVITED PRESENTATIONS

Stukel M. Phylogenomic insights into the evolution, timing of diversification, and global biogeography of cicadas. Oral presentation at the 28th Annual New Zealand Phylogenomics Meeting, Kaikōura, NZ. February 2025.

Stukel M. Cicada biology, hybridization, and diversification: insights from New Zealand. Invited oral presentation at the Connecticut Entomological Society 2024 Annual Meeting, New Haven, CT. April 2024.

Stukel M. Using phylogenetic network methods to untangle hybridization in New Zealand cicadas. Oral presentation at the Centre for Computational Evolution monthly seminar series, University of Auckland, Auckland, NZ. November 2023.

Stukel M. Using phylogenomics to untangle hybridization in New Zealand cicadas. Oral presentation at DECO 23, NZ Phylogeneomics meeting, Napier, NZ. February 2023.

Stukel M. Mitochondrial theft: inferring ancient hybridization in New Zealand cicadas. Oral presentation at the Connecticut Entomological Society Student Symposium, Storrs, CT. March 2019.

CONTRIBUTED PRESENTATIONS

Stukel, M., Simon, C. Comparison of phylogenetic network methods in untangling New Zealand cicada hybridization. Oral presentation at the 3rd Joint Congress on Evolutionary Biology (Joint meeting of the American Society of Naturalists, the European Society for Evolutionary Biology, the Society for the Study of Evolution, and the Society of Systematic Biologists), Montreal, Canada. July 2024.

Stukel M. Testing New Zealand cicada hybridization hypotheses. Oral speed talk at UConn Ecology and Evolutionary Biology Graduate Student Symposium, Storrs, CT. February 2024.

Stukel M., Porczak A., Gordon E.R.L., Vailionis J., Simon C.Phylogenomics of mito-nuclear discordance: an example from New Zealand cicadas. Oral presentation at Evolution 2022 meeting (Annual joint meeting of the American Society of Naturalists, the Society for the Study of Evolution, and the Society of Systematic Biologists), Cleveland, OH. June 2022.

Stukel M., Gordon E.R.L., Haji D., Buckley T.R., Lemmon A., Lemmon E.M., Simon C. Mitochondrial theft: inferring ancient hybridization in New Zealand cicadas using whole mtDNA genomes from hybrid capture by-catch. Oral presentation at Evolution 2019 meeting (Annual joint meeting of the American Society of Naturalists, the Society for the Study of Evolution, and the Society of Systematic Biologists), Providence, RI. June 2019.

Stukel M.. Mitochondrial theft: inferring ancient hybridization in NZ cicadas. Oral presentation at UConn Ecology and Evolutionary Biology Graduate Student Symposium, Storrs, CT. February 2019.

Stukel M., Li J. Patterns of DNA Sequence Variation in Plastid Genomes of Species Pairs Between Eastern Asia and Eastern North America: an Example From Tulip Trees (*Liriodendron*). Poster presentation at the Celebration of Undergraduate Research and Creative Performance, Hope College, Holland, MI. April 2015.

Stukel M., Li J. Population Genetic Structures of Two Sister Tulip Tree Species: Implications for the Diversity Anomaly Between Eastern Asia and North America. Poster presentation at the Michigan Space Grant Consortium Conference, University of Michigan, Ann Arbor, MI. October 2014.

Stukel M., Skinner K., Li J.. Population Genetic Structures of Two Sister Tulip Tree Species: Implications for the Diversity Anomaly Between Eastern Asia and North America. Poster

presentation at the Celebration of Undergraduate Research and Creative Performance, Hope College, Holland, MI. April 2014.

Stukel M., Best A., Stukey J., et al. Isolation of 20 Mycobacteriophages and Genomic Analysis of the Novel Mycobacteriophage, Inventum. Poster presentation at the Celebration of Undergraduate Research and Creative Performance, Hope College, Holland, MI. April 2013.

ACADEMIC ORGANIZATIONS

Society for the Study of Evolution — February 2020 – Present
Society of Systematic Biologists — March 2019 – Present
Connecticut Entomological Society — September 2018 – Present
Beta Beta Beta (TriBeta) Biological Honors Society (Alpha Eta Chapter) — April 2014 – Present

ACADEMIC SERVICE

Manuscript reviewer

- Systematic Biology (1 paper) — April 2024 – Present
- Molecular Phylogenetics and Evolution (1 paper) — February 2024 – Present
- Systematic Entomology (1 paper) — December 2021 – Present

Webmaster, Connecticut Entomological Society — September 2020 – Present

TEACHING EXPERIENCE

Graduate Teaching Assistant — August 2018 – Present
Ecology and Evolutionary Biology, University of Connecticut

- Lab Instructor, BIOL1108, Principles of Biology II: 7 semesters
- Teaching Assistant, EEB2245, Evolutionary Biology: 3 semesters
- Lab Instructor, EEB4250, General Entomology: 1 semester
- Teaching Assistant, EEB5300, Practical Genomics in Ecology and Evolution: 1 semester

Undergraduate Teaching Assistant — September 2014 – December 2014
Department of Biology, Hope College — Holland MI

- Assisted students in the 2014-2015 SEA-PHAGES Program in isolating and purifying novel mycobacteriophages based on previous experience in the class.

UNDERGRADUATE RESEARCH EXPERIENCE

Undergraduate Research Assistant — May 2015 – July 2015
Department of Biology, Hope College — Holland MI

- Censused bird populations through point counts in the field and wildlife cameras to determine wildlife use patterns at various habitat sites.

Undergraduate Research Assistant — May 2013 – April 2015

Department of Biology, Hope College Holland MI

- Sequenced partial and full chloroplast genomes to determine population genetic structures of *Liriodendron tulipifera* and *L. chinense*.
- Co-authored and presented 3 poster presentations.

Undergraduate Research Student September 2012 – May 2013

Department of Biology, Hope College Holland MI

2012-2013 SEA-PHAGES Program

- Isolated and purified a novel mycobacteriophage.
- Analyzed and annotated the genome of mycobacteriophage Inventum.
- Co-authored and presented 1 poster presentation.

SKILLS

- Molecular laboratory experience (DNA extraction, PCR, Sanger sequencing, Illumina library preparation)
- Bash scripting
- Basic knowledge of R and Python programming languages
- Experience with phylogenetic tree and network software (RAxML, IQ-TREE, BEAST2, RevBayes, SNaQ, PhyloNet, PhyNEST)
- Experience with bioinformatics software (SPAdes, BLAST, MITObim)

Updated 03/28/2025