Tyler Duncan Hether

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Education

Ph.D. Bioinformatics & Computational Biology, University of Idaho. Expected May, 2016

Dissertation: "The role of genetic interactions in adaptation".

Committee: P. Hohenlohe, P. Joyce, C. Parent, & J. Foster.

M.S. Biology, University of Central Florida. Received July, 2010

Thesis: "Using landscape genetics to assess population connectivity in a habitat generalist".

B.S. Biology, University of Central Florida. Received December, 2006

Employment

University of Idaho 2010–2015.

University of Central Florida 2006–2010.

Research Support

Eugene Magelby Natural Sciences Scholarship, 2015–2016

NSF DDIG "The role of genetic interactions in adaptation", 2014–2016

Bioinformatics & Computational Biology Fellowship "Develop computational tools to analyze recombination rate variation from low-coverage sequence data", 2014–2016

NSF BEACON Graduate Fellowship "The Genetic Architecture of Multi-dimensional Adaptation & Speciation", 2011–2013

Sigma Xi Grants-in-Aid of Research "Evaluating the role of landscape features on gene flow", 2008-2009

Programming & Scripting Languages

R, C++, perl, python, LaTeX, mathematica, & bash

Publications

Hand, B.K, T.D. Hether, R.P. Kovach, C.C. Muhlfeld, S.J. Amish, M.C. Boyer, S.M. O'Rourke, M.R. Miller, W.H. Lowe, P.A. Hohenlohe, & G. Lukart. 2015. Genomics and introgression: Discover and mapping of thousands of species-diagnoistic SNPs using RAD sequencing. Current Zoology 61 (1): 146-154

Hether, T.D. and P.A. Hohenlohe. Genetic regulatory network motifs constrain adaptation through curvature in the landscape of mutational (co)variance. Evolution (68) 4: 950-964.

Rosenblum, E.B., B.A. Sarver, J.W. Brown, S. Des Roches, K. M. Hardwick, T.D. Hether, J.M. Eastman, M.W. Pennell, and L.J. Harmon. 2011. Goldilocks meets Santa Rosalia: an ephemeral speciation model explains patterns of diversification across time scales. Evolutionary Biology. 39, number 2, 255-261.

Hether, T.D. and E.A. Hoffman. Machine learning identifies specific habitats associated with genetic connectivity in *Hyla squirella*. 2012. J. Evolutionary Biology 25, issue 6, 1039-1052

Degner, J.F., D.M. Silva, T.D. Hether, J.M. Daza, E.A. Hoffman. 2010. Fat frogs, mobile genes: unexpected phylogeographic patterns for the ornate chorus frog (*Pseudacris ornata*). Molecular Ecology 19, issue 12, 2501-2515.

Jenkins D.G,..., T.D. Hether, et al. 2010 Isolation by distance: 20th century relic or reference standard for 21st century landscape genetics? Ecography 33, issue 2, 315-320.

Hether, T. D. and E. A. Hoffman. Characterization of five dinucleotide and six tetranucleotide polymorphic microsatellite loci for the squirrel treefrog (*Hyla squirella*). Appeared in D. Abdoullaye, I. Acevedo, A.A. Adebayo, et al. 2010. Permanent Genetic Resources added to Molecular Ecology Resources Database 1 August 2009-30 September 2009. Molecular Ecology Resources 10, 232-236.

Degner, J. F., T. D. Hether, and E. A. Hoffman. 2009. Eight novel tetranucleotide and five cross-species dinucleotide microsatellite loci for the ornate chorus frog (*Pseudacris ornata*). Molecular Ecology Resources 9, 622-624.

Talks & Presentations

University of Idaho's IBEST Science Update. Talk title: Experimental Evolution of Local Adaptation in Yeast, 2014.

University of Idaho's College of Science Research Exposition 2014. Poster title: "Hidden Markov Models Aid in Identifying Recombination Rate and Gene Conversion Hotspots in Low-Coverage DNA Sequencing of *Saccharomyces cerevisiae* Crosses". Primary author, 2014.

Evolution. Poster title: "Genetic network architecture, mutation rate, and correlational selection affect G-matrix stability". Primary author, 2014.

Evo-Wibo. Poster title: "Genetic network architecture, mutation rate, and correlational selection affect G-matrix stability". Primary author, 2014.

BEACON seminar series. Talk title:"Recombination rate and gene conversion heterogeneity: implications for 'genomic islands' of divergence". Primary author, 2013.

Evolution. *Hamilton Award Nominee*. Presentation Title: "Genetic regulatory motifs constrain adaptation through curvature in the landscape of mutational variation" Primary author, 2013.

BEST Science Exposition, University of Idaho. Poster Title: "Spatial autocorrelation structure of genomic sequence divergence under neutrality using coalescent simulations" Contributing author, 2012.

BEST Science Exposition, University of Idaho, Idaho. Poster Title: "Genetic Regulatory Networks, G-matrices, & Adaptive Divergence" Primary author, 2012.

Evolution. Poster Title: "Genetic Network Architecture and the G-matrix Under Divergent Selection" Primary author, 2012.

Seventh Annual Southeastern Ecology and Evolution Conference (SEEC), Atlanta, Georgia. Presentation Title: "Using landscape genetics to evaluate habitat permeability in an abundant frog" Primary author, 2010.

Biogeography Conference, Baja, Mexico. Poster Title: "Isolation by distance is dead: long live IBD" Contributing author, 2009.

Sixth Annual Southeastern Ecology and Evolution Conference (SEEC), Gainesville, Florida. Poster Title: "Is clinal variation in skin color of the ornate chorus frog (*Pseudacris ornata*) driven by natural selection?" Primary author, 2009.

Evolution. Presentation Title: "Testing for selection along a cline of color change in a polymorphic frog" Contributing author, 2008.

Educational Outreach

"NIMBioS Evolutionary Quantitative Genetics Workshop", 2015 – Helped teach quantitative genetics to graduate students and postdocs

"Creatures of the night", 2011 – Helped teach chiropteran natural history elementary childern

"White Sands Institute", 2011 – Helped teach lizard evolution to middle school children

"Save the Frogs Day", 2011, Helped teach amphibian decline awareness and habitat requirements to preschool children.

Journal Referee

Biological Journal of the Linnean Society, Evolution, & Molecular Ecology