

# Daniel Marc Hooper

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## EDUCATION

**The University of Chicago** Chicago, IL  
Ph.D. Candidate, Committee on Evolutionary Biology 2011 - 2017  
Advisor: Trevor D. Price  
Dissertation: Chromosome inversions and avian speciation

**The University of Chicago** Chicago, IL  
MS, Committee on Evolutionary Biology 2011 - 2014

**The University of California, Davis** Davis, CA  
B.S. Evolution, Ecology, and Biodiversity; *Cum Laude* 2006 - 2009  
Department of Evolution and Ecology **Outstanding Graduating Senior** 2010

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## APPOINTMENTS

**American Museum of Natural History** New York, NY  
Gerstner Postdoctoral Scholar in Bioinformatics & Computational Biology 2022 – *present*

**Columbia University** New York, NY  
RISE Postdoctoral Research Scientist 2019 – 2022

**Cornell Lab of Ornithology** Ithaca, NY  
Edward W. Rose Postdoctoral Fellow 2017 – 2019

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## MOST SIGNIFICANT PEER-REVIEWED PUBLICATIONS

- [17] Kelsie A. Lopez\*, Callum S. McDiarmid, Simon S. Griffith, Irby J. Lovette, and **Daniel M. Hooper**. Mitonuclear incompatibilities with the sex chromosomes suggested in the emergence of reproductive isolation within an avian hybrid zone. 2021. *Evolution* 75: 1395-1414. \*Undergraduate first author mentored by **Daniel M. Hooper**
- [16] **Daniel M. Hooper**, Simon C. Griffith, and Trevor D. Price. Sex chromosome inversions enforce reproductive isolation across an avian hybrid zone. 2019. *Molecular Ecology* 28: 1246-1262.
- [15] **Daniel M. Hooper** and Trevor D. Price. Chromosomal inversion differences correlate with range overlap in passerine birds. 2017. *Nature Ecology & Evolution* 1: 1526-1534.

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## ADDITIONAL PEER-REVIEWED PUBLICATIONS

- [14] Callum S. McDiarmid, **Daniel M. Hooper**, Antoine Stier, and Simon C. Griffith. Mitochondrial and nuclear genomes interact to compromise aerobic metabolism in young, naturally hybridizing birds. *In review - Current Biology*.

- [13] Callum S. McDiarmid, Fiona Finch, Marianne Peso, Erica van Rooij, **Daniel M. Hooper**, Melissa Rowe, and Simon C. Griffith. Assortative mate preference in an avian system with unidirectional bill colour introgression. *In revision – Journal of Evolutionary Biology*.
- [12] Ashutosh Singh, Sandeep K. Gupta, Per Alström, Dhananjai Mohan, **Daniel M. Hooper**, Ramani S. Kumar, Dinesh Bhatt, Pratap Singh, and Trevor D. Price. Taxonomy of cryptic species in the *Cyornis rubeculoides* complex in the Indian Subcontinent. 2018. *Ibis* 162: 924-935.
- [11] Simon C. Griffith and **Daniel M. Hooper**. Geographical variation in bill colour in the Long-tailed Finch: evidence for a narrow zone of admixture between sub-species. 2017. *Emu – Austral Ornithology* 117.
- [10] V.V. Robin, C.K. Vishnudas, Pooja Gupta, Frank Rheindt, **Daniel M. Hooper**, Uma Ramakrishnan, and Sushma Reddy. Two new genera of songbirds represent endemic radiations from the Shola Sky Islands of the Western Ghats, India. 2017. *BMC Evolutionary Biology* 17: 31.
- [9] **Daniel M. Hooper**, Urban Olsson, and Per Alström. The rusty-tailed flycatcher (*Muscicapa ruficauda*; Aves: Muscicapidae) is a member of the genus *Ficedula*. 2016. *Molecular Phylogenetics & Evolution* 102: 56-61.
- [8] Trevor D. Price and **Daniel M. Hooper**. The potential role of parapatric and allopatric divergence in Junco speciation. 2016. *Snowbird: Integrative Biology and Evolutionary Diversity in the Junco* (Ellen D. Ketterson and Jonathan W. Atwell, eds.), 199-221. University of Chicago Press.
- [7] David P.L. Toews, Leonardo Campagna, Scott A. Taylor, Christopher N. Balakrishnan, Daniel T. Baldassarre, Petra E. Deane-Core, Michael G. Harvey, **Daniel M. Hooper**, Darren E. Irwin, Caroline D. Judy, Nicholas A. Mason, John E. McCormack, Kevin G. McCracken, Carl H. Oliveros, Rebecca J. Saffran, Elizabeth S. Scordato, Katherine F. Stryjewski, Anna Tigano, Albert Uy, and Benjamin M. Winger. Genomic approaches to understanding population divergence and speciation in birds. 2016. *The Auk* 133: 13-30.
- [6] **Daniel M. Hooper** and Trevor D. Price. Rates of karyotypic evolution in Estrildid finches differ between island and continental clades. 2015. *Evolution* 69: 890-903\*.  
\*Faculty Opinions (formerly F1000) mentioned article
- [5] Sonal Singhal, Ellen M. Leffler, Keerthi Sannareddy, Isaac Turner, Olivia Venn, **Daniel M. Hooper**, Alva I. Strand, Qiye Li, Brian Raney, Christopher N. Balakrishnan, Simon C. Griffith, Gil McVean, and Molly Przeworski. Stable recombination hotspots in birds. 2015. *Science* 350: 928-932.
- [4] Trevor D. Price, **Daniel M. Hooper**, Caitlyn D. Buchanan, Ulf S. Johansson, Per Alström, Urban Olsson, Mousumi Ghosh-Harihar, Jochen E. Martens, Bettina Harr, Pratap Singh and Dhananjai Mohan. Niche filling slows the accumulation of Himalayan songbirds. 2014. *Nature* 509: 22-225.
- [3] Per Alström, **Daniel M. Hooper**, Yang Liu, Urban Olsson, Dhananjai Mohan, Magnus Gelang, Le Manh Hung, Jian Zhao, Fumin Lei, and Trevor D. Price. Discovery of a relict lineage of passerine bird in a monotypic family. 2014. *Biology Letters* 10: 20131067.
- [2] Jonathan D. Kennedy, Jason T. Weir, **Daniel M. Hooper**, D. Thomas Tietze, Jochen Martens, and Trevor D. Price. Ecological limits on diversification of the Himalayan Core Corvoidea. 2012. *Evolution* 66: 2599-2613.
- [1] Trevor D. Price, Dhananjai Mohan, D. Thomas Tietze, **Daniel M. Hooper**, C. David L. Orme, and Pamela C. Rasmussen. Determinants of northerly range limits along the Himalayan bird diversity gradient. 2011. *The American Naturalist* 178: 97-108.
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## NATIONAL HONORS & AWARDS

<b>Columbia University Research Initiatives in Science and Engineering (RISE)</b>	2019
<b>Cornell Lab of Ornithology Edward W. Rose Postdoctoral Fellowship</b>	2017
<b>National Science Foundation Graduate Research Fellowship Program (GRFP)</b>	2011

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## RESEARCH FUNDING

Sarah Woolley, Peter Andolfatto, and **Daniel M. Hooper**. Columbia University Research Initiatives in Science and Engineering (RISE). “A New and Comprehensive Approach to Studying Speciation via Hybrid Dysfunction.” 2019, \$160,000.

Simon C. Griffith, **Daniel M. Hooper**, Melissah Rowe, Trevor D. Price, Michael Webster, and Nick Mundy. Australian Research Council Grant. “Hybridising long-tails to examine Large-Z effects and chromosome inversions.” 2017, \$228,321.

Trevor D. Price and **Daniel M. Hooper**. National Science Foundation Doctoral Dissertation Improvement Grant. “Chromosome inversions and reproductive isolation in an avian hybrid zone.” 2016, \$19,693.

**Daniel M. Hooper**. National Geographic Society Young Explorer’s Grant. “The Genomics of Reproductive Isolation in an Avian Hybrid Zone: Chromosomal rearrangements and the long-tailed finch (*Poephila acuticauda* sp.)” 2013, \$5000.

**Daniel M. Hooper**. University of Chicago Hinds Fund “Comparative genomic analyses of chromosomal rearrangements in avian evolution: rate variation across the Estrildid finches (*Estrildidae*).” 2013, \$1000.

**Daniel M. Hooper**. American Ornithologists’ Union Hesse Student Research Award “Chromosomal inversions and the incipient speciation of juncos (genus *Junco*).” 2012, \$2500.

**Daniel M. Hooper**. University of Chicago Hinds Fund “The role of chromosomal inversions in the incipient speciation of Juncos.” 2011, \$2000.

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## SELECT PRESENTATIONS

-*Linked-read genomic data (Haplotagging) from an avian hybrid zone reveals the evolutionary history of chromosome inversions and their contribution to reproductive isolation.* Talk delivered to the American Ornithological Society & Birds Caribbean 2022, San Juan, PR. June 2022.

-*Genetic constraint on song learning ability in songbirds.* Talk delivered to the American Ornithological Society and Society of Ornithologists Canada conference. August 2021.

-*Evaluating the Faster-Z Effect in the Australian Grassfinches.* Talk delivered to the North American Ornithological Conference (NAOC) VII, San Juan, PR. August 2020.

-*Sex chromosome inversions may enforce reproductive isolation across an avian hybrid zone.* Talk delivered at the 137<sup>th</sup> American Ornithological Society conference, Anchorage, AK. June 2019.

-*Hybridization as a creative process: insights from an avian hybrid zone.* Talk delivered at Ornithology Seminar, Cornell University, Ithaca, NY. October 2018.

-*Chromosome inversions and avian speciation: reproductive isolation across an avian hybrid zone.* Talk delivered at the ‘Darwin’s Weekly’ Seminar Series, University of Chicago, IL. March 2018.

-*Chromosome inversions and reproductive isolation in an avian hybrid zone.* Talk delivered at Ecology and Evolution Seminar Series, LMU Munich, Germany. January 2018.

- Chromosome inversions and reproductive isolation in an avian hybrid zone*. Talk delivered at EvoGroup Seminar, Cornell University, Ithaca, NY. October 2017.
- Range overlap drives chromosome inversion fixation in passerines*. Talk delivered at Evolution, Austin, TX. June 2016.
- Chromosome inversions and avian speciation: The Estrildid finches – and beyond*. Talk delivered at Commonwealth Scientific and Industrial Research Organization (CSIRO): Finch Summit, Canberra, ACT, Australia. October 2015
- Chromosome inversions in Estrildid finches*. Talk delivered at American Ornithologists' Union and Cooper Ornithological Society, Estes Park, CO. September 2014.
- Chromosomal inversions and avian speciation*. Talk delivered at Evolution, Raleigh, NC. June 2014

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## TEACHING EXPERIENCE

2022 Comparative Genomics 2: Bioinformatics	(American Museum of Natural History)
2015, 2017 North American Deserts, Field School (TA)	(University of Chicago)
2015-2017 Natural History of North American Deserts (TA & Lecturer)	(University of Chicago)
2014 Environmental Ecology (TA)	(University of Chicago)
2008 New Tutor Instructor	(University of California, Davis)
2008 Physics (Tutor)	(University of California, Davis)
2007-2008 Calculus (Tutor)	(University of California, Davis)

*Current as of 10/20/22*