CURRICULUM VITAE: Michael James Braun

PROFESSIONAL INTERESTS AND EXPERTISE

Molecular evolutionary genetics; ornithology; molecular phylogenetics; speciation; dynamics of hybrid zones; conservation genetics; Neotropical biogeography; ancient DNA.

PERSONAL INFORMATION

Address: Dept. of Vertebrate Zoology
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Citizenship: U.S. Foreign Language: Spanish; extensive practical use.

EDUCATION

B.A. - 1977 Cornell University
Major: Biochemistry
Minor: Ecology and Systematics

Ph.D. - 1983 Louisiana State University Medical Center
Major: Biochemistry
Dissertation:"Molecular vs. Morphological and Behavioral Differentiation Across Contact Zones Between Closely Related Avian Species."
Advisor: Herbert C. Dessauer.

Postdoctoral -1983-1985, National Cancer Institute Fellowship studying tumor induction by retroviruses and oncogenes.
Advisor: James Casey.

PROFESSIONAL EXPERIENCE

1988-Present Research Scientist, Dept. of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution

1988-Present Adjunct Professor, Behavior, Ecology, Evolution and Systematics Program, Department of Biology, University of Maryland

1988-2001 Director, Laboratory of Molecular Systematics, National Museum of Natural History, Smithsonian Institution

1987-1988 Assistant Professor, Department of Biological Sciences, University of Cincinnati

1985-1987 Molecular Studies Group Leader, Laboratory of Cell and Molecular Structure, Program Resources, National Cancer Institute

1978-1981 Instructor in Field Ornithology, Louisiana Nature Center

1977-1983 Teaching Assistant and Instructor in Biochemistry, LSU Medical Center

1976 Research Assistant, Plant Pathology, Cornell University

PROFESSIONAL SOCIETIES

American Association for the Advancement of Science
Society for the Study of Evolution
American Ornithologist's Society
Wilson Ornithological Society
Association of Field Ornithologists

EXAMPLES OF SERVICE

Meeting Co-Convenor- "Second International Conference on Ancient DNA" (with N. Tuross, R. Fleischer and E. Bermingham). Three day meeting with 170 participants. 1993.

Workshop Organizer- "Collecting, Preserving and Accessioning Genetic Resources", 1999 meeting of the Society for the Preservation of Natural History Collections

Course Faculty- "Molecular Genetic Techniques for the Inventory and Characterization of Biodiversity" 1997-1999. A two-week intensive lecture and lab course, held annually at the Centro Internacional de Agricultura Tropical (CIAT) in Cali, Colombia. Sponsored by the Instituto von Humboldt.

Workshop Panel- National Science Foundation Workshop on Frozen Tissue Collections, 1983

Grant Review- National Science Foundation Programs in Systematic Biology, Population Biology, Anthropology, NERC, National Geographic Society, Smithsonian Scholarly Studies, Smithsonian Fellowships

Paper Review- Science, PNAS, Proceedings of the Royal Society, Evolution, Systematic Biology, Journal of Molecular Evolution, Molecular Ecology, Molecular Phylogenetics and Evolution, Journal of Heredity, Auk, Condor, Cotinga, numerous *ad hoc*, presubmission and tenure reviews

Workshop Organizer- "New Technological Developments for Field Ornithology", 1989 meeting of the American Ornithologist's Union

Program Committee- Fourth International Congress of Systematics and Evolutionary Biology, July 1990

Editorial Board - Molecular Phylogenetics and Evolution, 1992-2000

Collections Committee- American Ornithologist's Union, 1990-1995

Councilor- Association of Field Ornithologists, 2005-2010

Lead-PI- Frontiers in Phylogenetics Program, NMNH, 2010-2020.

Chair, Steering Committee- Smithsonian Initiative in Biodiversity Genomics, 2011-2012

Coordinator- ***"Workshop on Sequence Capture for Next Generation Phylogenomics"*** (with Brant Faircloth and Noor White). Five day workshop with 30 participants. 2012.

Co-Organizer- ***"Next Generation DNA Sequencing: Transformative Technology for Biodiversity Science"*** (with Marc Allard, FDA). Three day symposium with 120 participants. 2011.

Co-Host- ***"Workshop on Comparative Genomics at the Smithsonian"*** (with S. Brady, R. Fleischer, M. Cummings and S. Handley). Six day event with 85 participants. 2011.

Co-Host- ***"Workshop on Molecular Evolution at the Smithsonian"*** (with R. Fleischer, M. Cummings and S. Handley). A week long workshop with 80 participants. 2009.

Co-Host- ***"Challenges for Large-scale Phylogeny and Alignment Estimation"*** (with T. Warnow, R. Linder, M. Holder, E. Moriyama, J. Leebens-Mack). A 3-day workshop with 60 participants at the National Evolutionary Synthesis Center. 2011.

Co-Host- ***"Sequence Alignment and Tree Estimation"*** (with Tandy Warnow). A three-day symposium and workshop with 160 participants at NMNH. May 2012.

Co-Organizer- ***"Genome-enabled Research on Manakins"*** (with Bette Loiselle and 5 others). Three-day workshop with 25 participants, funded and hosted by the National Evolutionary Synthesis Center, Durham, NC. January 2013.

Co-Organizer- "***Genome-Scale Phylogenetics: Collecting the Data***" (with Charles Mitter, UMd). Two day symposium and workshop at NMNH with 230 participants. May 2013.
Co-Organizer- "*Genome-scale Phylogenetics: Analysing the Data*" (with Guillermo Orti). One-day symposium at NMNH with seven invited speakers, 325 registrants, and over 1000 viewers tuning in to the live webcast or recorded podcast. Sept 2014.
Chair - Senate of Scientists, National Museum of Natural History, 2016-2018.
Member- Steering Committee, Smithsonian Conservation Commons, 2018-onward.

FIELD RESEARCH

1977	Arizona - for Cornell Laboratory of Ornithology (1 month)
1979, 1981	Mexico - Research on speciation in towhees (2 months)
1979, 1980	Missouri, Louisiana - Research on speciation in chickadees (1 month)
1980 -1985	Peru, Panama, Costa Rica, Mexico (Total of 10 months)
1986	Australia (3 weeks)
1987	Peru (3 weeks)
1988	Texas (2 weeks)
1989	Mexico, Texas (1 month)
1990-2016	Panama, (12 research trips to study *Manacus*; 6 months)
1992, 1993	Ecuador (2 trips; 3 weeks)
1994-2014	Guyana (10 general survey expeditions; 11 months)
1997-1999	Colombia (3 trips; 6 weeks)
2000-2014	Venezuela (6 trips, 11 weeks)
2008-2009	Mexico (10 weeks)
2013	Australia (4 weeks)

Total of 56 months on 62 trips to 10 countries

MENTORSHIP

Postdoctoral Fellows

Mara McDonald	1988-1989	Thomas Parsons	1989-1992
Jean Mariaux	1991-1992	Carey Krajewski	1989-1990
Patricia Gutierrez	1992-1993	Judith Rhymer	1989-1991
Kenneth Rosenberg	1993	Winston Hide	1991-1992
Kevin Winker	1994-1997	Scott Steppan	1996-1998
David McDonald	1994-1997	Andrew Mitchell	1998-1999
John Huelsenbeck	1997-1998	Nirmal Bhagabati	2000-2001
John Harshman	2000-2001	Wallace Holznagel	2001-2002
Tamaki Yuri	2002-2007	Brian Coyle	2012-2017
Haw Chuan Lim	2013-2017		

Ph.D. Students

Patricia Sawaya	1988-1990	Gene Sattler	1988-1996
Travis Glenn	1991-1997	Robb Brumfield	1993-1999
Cindy Bronson	1995-2002	Sheila Reynolds	2002-2010
Sarah Kingston	2005-2012	Noor White	2011-2017
Kevin Bennett	2017-present	Shauna Rasband	2018-present

M.S. Students

Karen Zeller	1988-1990	John Tschirky	1990-1993
Jon Bollback	1995-1998	Katherine Dryer	1998-2002
Kin-Lan Han	2003-2007	Brian Davidson	2006-2011

Interns

Melissa Etheridge	1990	Rebecca Christie	1993
Meng-Keong Choo	1991	Ryan Ojerio	1993
Lawrence Lopez	1992	Ryan Bavis	1994-1995
Denise Waller	1993-1994	Dale Young	1997
Caryn Strupczewski	1998-1999	Heather Moncrief	2001
Meade Krosby	2002-2003	Huyen Nguyen	2008
Subir Shakya	2013	Elizabeth Reardon	2016

RECENT GRANTS ($25,000 and over)

2002-2008 National Science Foundation. Early Bird: A collaborative project to resolve the deep nodes of avian phylogeny" (with S. Hackett, F. Sheldon, W. Moore, E. Braun, R. Kimball and D. Steadman). $2.2 million total, $312,000 to SI.

2007-2009 Smithsonian Research Endowments. "Cryptic Gene Flow At Hybrid Zones: Patterns, Processes and Systematic Implications." $25,000.

2007-2011 National Science Foundation. "Collaborative Research: Large Scale Simultaneous Multiple Alignment and Phylogeny Estimation". With T. Warnow, R. Linder, and five others. $124,301 to SI.

2010-2013 NMNH Program Proposal Call. "Frontiers in Phylogenetics". **Braun** as lead PI, with co-PIs Ted Schultz, Jon Norenburg, Ken Wurdack, Sean Brady, Charles Mitter and Michael Cummings. $150,000 over 3 years.

2010 Smithsonian Grand Challenges Program. "Next generation sequencing: enabling transformative technology for biodiversity research and collections". **Michael Braun**, Seán Brady, Robert Fleischer, Owen McMillan, Kenneth Wurdack as lead PI's, with 19 co-PI's. $70,000.

2011 Smithsonian Scholarly Studies Program. " Adapting Next Generation Sequencing Technologies for Efficient Large-Scale Phylogenetics". **M. J. Braun**, P. Houde and E. Braun. $65,000.

2011 Smithsonian Grand Challenges Proposal Call. " Building the Framework of Biodiversity Science: Next Generation Phylogenomics". **M. J. Braun** as lead PI, with K. Wurdack, Jesus Maldonado, Kris Helgen, Bill Wcislo, and Sean Brady as co-PI's. $100,000 for 18 months.

2012 National Evolutionary Synthesis Center (NESCent). "Genome-enabled Research on Manakins: A Catalysis Meeting ". **Braun** as co-PI, with 6 others. ~$60,000.

2013 Smithsonian Competitive Grants Program for Science. "Origins of the Tepui Highland Avifauna: a Comparative Phylogeographic Approach." **Braun** as PI, with Jorge Perez-Eman and Julie Hebert. $100,000.

2014 Smithsonian Grand Challenges Proposal Call. " Comprehensive Recovery Planning for the Endangered Red Siskin ". **Braun** as Lead PI, with 7 co-PIs. $25,000.

2014 Smithsonian Grand Challenges Proposal Call. "Biodiversity Genomics Exemplar Projects". **Braun** as co-PI, with 11 others. $75,000.

2014 Smithsonian Competitive Grants Program for Science. " Genomic Architecture of Speciation in an Avian Hybrid Zone Characterized by Sexually-Selected Brilliant Male Plumage." **Braun** as Lead PI with H.C. Lim. $100,000.

2014 Smithsonian Grand Challenges Proposal Call. " Coffee to the Rescue: Using Captive Breeding, Conservation Genomics and Sustainable Agroforestry to Recover an Endangered Bird". **Braun** as Lead PI with 8 co-PIs. $65,000.

2015 NSF Division of Environmental Biology. "RCN: Enabling Comparative Studies of the Process and Products of Sexual Selection in a Genomic Context". **Braun** as co-PI with 5 others. **$500,000** over 5 years.

2015 NSF Division of Environmental Biology. "DISSERTATION RESEARCH: Unraveling the Evolutionary History of Nocturnality on the Avian Tree of Life ". **Braun** as co-PI with 2 others. **$16,375**.

2015 Smithsonian James Bond Fund. "Conservation of the highly endangered Red Siskin (*Sporagra cucullata*): Assessing the origin and status of "ghost" populations in the Caribbean." **Braun** as co-PI with 2 others. **$70,837**.

2015 NMNH Program Call. "Frontiers in Phylogenetics Renewal." **Braun** as Lead PI with 9 co-PIs. **$60,000**.

2015 BAND Foundation. "The Red Siskin Recovery Project". **Braun** as PI with 2 co-PIs. **$40,000**.

2016 National Science Foundation. "Construction of Research Aviaries at the Smithsonian Tropical Research Institute." **Braun** as participant with 2 others. **$114,427.**

2017 US Fish and Wildlife Service, International Programs. "*Evitar eliminación de cafetales que son "hábitats seguros" para aves migratorias y para futuras reintroducciones del Cardenalito (Sporagra cucullata)*." With Brian Coyle, Bob Rice at SCBI and colleagues from Provita in Venezuela. **$32,780.**

2019 NMNH Research Grant Program for Science- "*Consequences of Sexual Selection on Trait Evolution in an Avian Hybrid Zone.*" **Braun as PI**, with Kevin Bennett as Co-PI. **$138,292 awarded.**

2019 USFWS Neotropical Bird Conservation Act Program- **"**Migratory Bird Conservation via Shade Crop Farming (II)." **Braun as Key Individual** with 14 others. **$123,392 awarded from USFWS, $70,000 matching from SI Provost's Office**, total project budget ~$500K with matching from other units and organizations.

2010-2017 Eleven other small grants ranging from $1000-$25,000.

PEER-REVIEWED PUBLICATIONS

According to Google Scholar, my publications have been cited 3600 times in the last 5 years and 9542 times in my career. My h-index is 42 and my i10-index is 74.

Submitted. H. C. Lim, S. B. Shakya, M. G. Harvey, R. G. Moyle, R. C. Fleischer, **M. J. Braun** and F. H. Sheldon. Opening the door to greater phylogeographic inference in continental Southeast Asia: Comparative study of five co-distributed rainforest bird species using target capture and historical DNA. Submitted to *Molecular Ecology* 23 July 2019.

2019 N. D. White and **M. J. Braun**. Extracting Phylogenetic Signal from Phylogenomic Data: Higher-Level Relationships of the Nightbirds (Strisores). *Molecular Phylogenetics and Evolution 141:* 15 pp. https://doi.org/10.1016/j.ympev.2019.106611.

2019 A. Chen, N. D. White, R. B. J. Benson, **M. J. Braun** and D. J. Field. Total-evidence framework reveals complex morphological evolution in nightbirds (Strisores). *Diversity*: 11 (9), 143: 34 pp. https://www.mdpi.com/1424-2818/11/9/143**.**

2019 Kimball, R. T., C. H. Oliveros, N. Wang, N. D. White, F. K. Barker, D. J. Field, D. T. Ksepka, R. T. Chesser, R. G. Moyle, **M. J. Braun**, R.T. Brumfield, B. C. Faircloth, B. T. Smith, and E. L. Braun. A phylogenomic super tree of birds. *Diversity* 11:109: 35 pp. https://www.mdpi.com/1424-2818/11/7/109.

2019 Oliveros C. H., D. J. Field, D. T. Ksepka, F. K. Barker, A. Aleixo, M. J. Andersen, P. Alström, B. W. Benz, E. L. Braun, **M. J. Braun**, G. A. Bravo, R. T. Brumfield, R. T. Chesser, S. Claramunt, J. Cracraft, A. M. Cuervo, E. P. Derryberry, T. C. Glenn, M. G. Harvey, P. A. Hosner, L. Joseph, R. T. Kimball, A. L. Mack, C. M. Miskelly, A. T. Peterson, M. B. Robbins, F. H. Sheldon, L. F. Silveira, B. T. Smith, N. D. White, R. G. Moyle, and B. C. Faircloth. Earth history and the passerine superradiation. *PNAS* 116:7916-7925. https://www.pnas.org/content/pnas/116/16/7916.full.pdf.

2019 Sánchez-Mercado, A., A. Cardozo-Urdaneta, L. Moran, L. Ovalle, M. Á. Arvelo, J. Morales-Campos, B. Coyle, M. J. Braun, K. M. Rodríguez-Clark. Social network analysis reveals specialized trade in an Endangered songbird. *Animal Conservation* 2019: 13 pp. https://zslpublications.onlinelibrary.wiley.com/doi/epdf/10.1111/acv.12514.

2019 Tamashiro, R., N. D. White, **M. J. Braun**, B. Faircloth, E. L. Braun and R. Kimball. What are the roles of taxon sampling and model fit in tests of cyto-nuclear discordance using avian mitogenomic data? *Molecular Phylogenetics and Evolution* 130:132-142.

2018 Rodríguez-Clark, K. M., B. Davidson, S. Kingston, B. J. Coyle, C. Huddleston, P. Duchesne and **M. J. Braun**. Evaluating potential founders for *ex situ* conservation

efforts: the case of Red Siskins (*Spinus cucullatus*). *Endangered Species Research* 36:183-196. https://doi.org/10.3354/esr00898.

2018 Sánchez-Mercado, A., K. M. Rodríguez-Clark, J. Miranda, J.R. Ferrer-Paris, B. Coyle, S. Toro, A. Cardozo-Urdaneta and **M. J. Braun**. How to deal with ground truthing affected by human-induced habitat change? Identifying high-quality habitats for the Critically Endangered Red Siskin. *Ecology and Evolution* 8:841-851. DOI: 10.1002/ece3.3628

2018 Costa, T. V. V., B. M. Whitney, **M. J. Braun**, N. D. White, L. F. Silveira, and N. Cleere. A systematic reappraisal of the Rufous Potoo (*Nyctibius bracteatus* Gould, 1846) (Nyctibiidae) and description of a new genus. *Journal of Ornithology* 159:367-377. doi.org/10.1007/s10336-017-1511-2**.**

2017 Reddy, S., R. T. Kimball, A. Pandey, P. A. Hosner, **M. J. Braun**, K.-L. Han, J. Harshman, S. J. Hackett, C. J. Huddleston, S. Kingston, B. D. Marks, K. J Miglia, W. S. Moore, F. H. Sheldon, C. C. Witt, T. Yuri, and E. L. Braun. Why do phylogenomic data sets yield conflicting trees? Data type influences the avian tree of life more than taxon sampling. *Systematic Biology* 66(4):857–879.

2017 Kingston, S. E., T. L. Parchman, Z. Gompert, C. A. Buerkle, and **M. J. Braun**. Heterogeneity and concordance in locus-specific differentiation and introgression between species of towhees. *Journal of Evolutionary Biology* 30: 474-485 (doi: 10.1111/jeb.13033).

2017 White, N. D., C. W. Mitter and **M. J. Braun**. Ultraconserved Elements Resolve the Phylogeny of Potoos (Aves: Nyctibiidae). *Journal of Avian Biology* 48: 872-880 (doi: 10.1111/jav.01313).

2017 Arvelo, M., **M. J. Braun**, B. J. Coyle, S. Davis, Z. Diaz, J. Fink, W. Lynch, P. Hansen, P. Marinari, J. Miranda, S. Monfort, L. Ovalle-Moleiro, J. P. Rodríguez, K. M. Rodríguez-Clark, A. Rodríguez-Ferraro, E. Royer, A. Y. Sánchez-Mercado, B. Sucre. The Red Siskin Initiative: Saving an endangered finch in partnership with aviculturists. Pp. 45-66 in *Finches '17: White Papers from the Sixth International Finch Convention*. Queensland Finch Society, Ltd., Brisbane.

2016 White, N. D., G. F. Barrowclough, J. G. Groth and **M. J. Braun**. A multi-gene estimate of higher-level phylogenetic relationships among nightjars (Aves: Caprimulgidae). *Ornitología Neotropical* 27:223-236.

2016 Lim, H. C. and **M. J. Braun.** High-throughput SNP genotyping of historical and modern samples of five bird species via sequence capture of ultraconserved elements. *Molecular Ecology Resources* 16:1204-1223 (doi: 10.1111/1755-0998.12568).

2014 Jarvis, E. D., and 104 others including **M. J. Braun**. Whole Genome Analyses Resolve Early Branches in the Tree of Life of Modern Birds. Science 346:1320-1331.

2014 Reynolds, S. M., J. A. C. Uy, G. Patricelli, S. Coleman, **M. J. Braun** and G. Borgia. Tests of the kin selection model of mate choice and inbreeding avoidance in satin bowerbirds. Behavioral Ecology 25:1005-1014 (doi:10.1093/beheco/aru065).

2014 Kingston, S. E., A. G. Navarro-Sigüenza, E. A. García-Trejo, H. Vázquez-Miranda, W. F.

Fagan, and **M. J. Braun**. Genetic differentiation and habitat connectivity across towhee hybrid zones in Mexico. Evolutionary Ecology 28: 277-297.

2013 Davidson, B. S., G. D. Sattler, S. Via and **M. J. Braun**. Reproductive isolation and cryptic introgression in a sky island enclave of Appalachian birds. Ecology and Evolution 3(8): 2485– 2496.

2013 Parchman, T. L., Z. Gompert, **M. J. Braun**, R. Brumfield, D. B. McDonald, J. A. C. Uy, G. Zhang, E. D. Jarvis, B. A. Schlinger and C. A. Buerkle. The genomic consequences of adaptive divergence and reproductive isolation between species of manakins. Molecular Ecology 22: 3304-3317.

See also the related *News and Views* commentary: Yeaman, S. 2013. Hybridization and the porous genome: patterns of isolation and introgression in manakins. Molecular Ecology 22:3195-3197.

2013 Yuri, T., R. Kimball, J. Harshman, R. Bowie, **M. J. Braun**, J. Chojnowski, K-L. Han, S. Hackett, C. Huddleston, W. Moore, S. Reddy, F. Sheldon, D. Steadman, C. Witt & E. Braun. Parsimony and model-based analyses of indels in avian nuclear genes reveal congruent and incongruent phylogenetic signals. *Biology* 2(1): 419–444.

2012 Pravosudov, V. V., T. C. Roth II, M.L. Forister, L. D. LaDage, T. M. Burg, **M. J. Braun**, B. S. Davidson. Population genetic structure and its implications for adaptive variation in memory and the hippocampus on a continental scale in food-caching black-capped chickadees. Molecular Ecology 21: 4486-4497.

2012 Kingston, S. E., R. W. Jernigan W. F. Fagan, D. Braun and **M. J. Braun**. Genomic variation in cline shape across a hybrid zone. Ecology and Evolution 2(11): 2737-2748 (doi: 10.1002/ece3.375).

2011 Braun, E. L., R. T. Kimball, K.-L. Han, N. R. Iuhasz, A. J. Bonilla, J. L. Chojnowski, J. V. Smith, R. C. K Bowie, **M. J. Braun**, S.J. Hackett, J. Harshman, C. J. Huddleston, B. D. Marks, K. J. Miglia, W. S. Moore, S. Reddy, F. H. Sheldon, C. C. Witt, T. Yuri. Homoplastic microinversions and the avian tree of life. BMC Evolutionary Biology 11:141 (10 pages). http://www.biomedcentral.com/1471-2148/11/141.
Recognized by BioMed Central as a "Highly Accessed" article in Sept 2011.

2011 Han K. L., E. L. Braun, R. T. Kimball, S. Reddy, R. C. K. Bowie, **M. J. Braun**, J. L. Chojnowski, S. J. Hackett, J. Harshman, C. J. Huddleston, B. D. Marks, K. J. Miglia, W. S. Moore, F. H. Sheldon, D. W. Steadman, C. C. Witt, and T. Yuri. Are Transposable Element Insertions Homoplasy Free? An Examination Using the Avian Tree of Life. Systematic Biology 60(3): 375-86.

2010 Han, K.-L., M. B. Robbins and **M. J. Braun**. A multi-gene estimate of phylogeny in the nightjars and nighthawks (Caprimulgidae). Molecular Phylogenetics and Evolution 55: 443-453.

2010 **Braun, M. J.**, and C. J. Huddleston. Response to Mayr and Manegold. Molecular Phylogenetics and Evolution 55: 345-346.

2010 Olson, J. R., S. J. Cooper, D. L. Swanson, **M. J. Braun**, and J. B. Williams. The relationship of metabolic performance and distribution in Black-capped and Carolina Chickadees. Physiological and Biochemical Zoology 83: 263-275.

2009 Yuri, T., R. W. Jernigan, R. T. Brumfield, N. K. Bhagabati, and **M. J. Braun**. The effect of marker choice on estimated levels of introgression across an avian (Pipridae: *Manacus*) hybrid zone. Molecular Ecology 18: 4888-4903.

2009 **Braun, M. J.**, and C. J. Huddleston. A molecular phylogenetic survey of caprimulgiform nightbirds illustrates the utility of non-coding sequences. Molecular Phylogenetics and Evolution 53: 948-960.

2009 Kimball, R. T., E. L. Braun, F. K. Barker, R. C. K. Bowie, **M. J. Braun**, J. L. Chojnowski, S. J. Hackett, K.-L. Han, J. Harshman, V. Heimer-Torres, W. Holznagel, C. J. Huddleston, B. D. Marks, K. J. Miglia, W. S. Moore, S. Reddy, F. H. Sheldon, J. V. Smith, C. C. Witt, and T. Yuri. A well-tested set of primers to amplify regions spread across the avian genome. Molecular Phylogenetics and Evolution 50: 654-660.

2009 Reynolds, S. M., M. C. Christman, J. A. C. Uy, G. L. Patricelli, **M. J. Braun**, and G. Borgia. Lekking satin bowerbird males aggregate with relatives to mitigate aggression. Behavioral Ecology 20(2): 410-415.

2009 Meares, K., D. A. Dawson, G. J. Horsburgh, T. C. Glenn, K. L. Jones, **M. J. Braun**, M. R. Perrin and T. D. Taylor. Microsatellite loci characterized in three African crane species (Gruidae, Aves). Molecular Ecology Resources 9: 308–311.

2008 Harshman, J.*, E. L. Braun*, **M. J. Braun***, C. J. Huddleston, R. C. K. Bowie, J. L. Chojnowski, S. J. Hackett, K.L. Han, R. T. Kimball, B. D. Marks, K. J. Miglia, W. S. Moore, S. Reddy, F. H. Sheldon, D. W. Steadman, S. J. Steppan, C. C. Witt, T. Yuri. Phylogenomic evidence for multiple losses of flight in ratite birds. Proceedings of the National Academy of Science USA 105: 13462-13467.

*These authors contributed equally to the production of the manuscript.

2008 Hackett, S.J., Kimball, R.T., Reddy, S., Bowie, R.C.K., Braun, E.L., **Braun, M.J.**, Chojnowski, J.L., Cox, W.A., Han, K., Harshman, J., Huddleston, C.J., Marks, B.D., Miglia, K.J., Moore, W.S., Sheldon, F.H., Steadman, D.W., Witt, C.C. and Yuri, T. A phylogenomic study of birds reveals their evolutionary history. Science 320: 1763-1768.

2008 Yuri, T., R. T. Kimball, E. L. Braun and **M. J. Braun.** Duplication and accelerated evolution of growth hormone gene in passerine birds. Molecular Biology and Evolution 25: 352-361.

2007 Robbins, M. B., **M. J. Braun**, C. M. Milensky, B. K. Schmidt, W. Prince, N. H. Rice, D. W. Finch and B. J. O'Shea. Avifauna of the upper Essequibo River and Acary Mountains, Southern Guyana. Ornitologia Neotropical 18: 339-368.

2007 Reynolds, S. M., K. Dryer, J. Bollback, J. A. C. Uy, G. L. Patricelli, T. Robson, G. Borgia and **M. J. Braun**. Behavioral paternity predicts genetic paternity in Satin

Bowerbirds (*Ptilonorhynchus violaceus*), a species with a non-resource-based mating system. Auk 124(3): 857-867.

2007 **Braun, M. J.**, D. W. Finch, M. B. Robbins and B. K. Schmidt. *A Field Checklist of the Birds of Guyana, 2nd Ed.* Smithsonian Institution, Washington, D.C.

2007 Cleere, N., A. W. Kratter, D. W. Steadman, **M. J. Braun**, C. J. Huddleston and C. E. Filardi. A new genus of frogmouth (Podargidae) from the Solomon Islands – results from a taxonomic review of *Podargus ocellatus inexpectatus* Hartert 1901. Ibis 149: 271-286.

2007 Sattler. G. D., P. Sawaya and **M. J. Braun**. An assessment of song admixture as an indicator of hybridization in Black-capped Chickadees (*Poecile atricapillus*) and Carolina Chickadees (*P. carolinensis*). Auk 124: 926-944.

2005 Bronson, C. L., T. C. Grubb, Jr., G. D. Sattler, and **M. J. Braun**. Reproductive success across the Black-capped (*Poecile atricapillus*) and Carolina chickadee (*P. carolinensis*) hybrid zone in Ohio. Auk 122: 759-772.

2005 Helbig, A. J., A. Kocum, I. Seibold and **M. J. Braun**. A multi-gene phylogeny of Aquiline eagles (Aves: Accipitriformes) reveals extensive paraphyly at the genus level. Molecular Phylogenetics and Evolution 35:147-164.

2005 **Braun, M. J.,** M. L. Isler, P. R. Isler, J. M. Bates and M. B. Robbins. Avian speciation in the Pantepui: The case of the Roraiman Antbird (*Percnostola[Schistocichla] "leucostigma" saturata*). Condor 107: 329-343.

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OTHER PUBLICATIONS

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1983 Dessauer. H. C., **M. J. Braun**, and S. Neville. A simple hand centrifuge for field use. Isozyme Bulletin 16:91-92.

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RECENT LECTURES AND PRESENTATIONS

* Invited presentation
**Speaker

2019 Annual Meeting of the Society for the Study of Evolution. *"The Genetic Basis of Sexually Selected Traits in an Avian Hybrid Zone."* K.F.P. Bennett**, H.C. Lim, R. Dikow, P. Frandsen, M. Fuxjager, S. Kingston, B. Schlinger, and **M. J. Braun.**

2019 Association of Zoos and Aquaria, Annual Meeting, September 2019. "*The Power of Social Network Analysis: Understanding how the Endangered Red Siskin is Trafficked in Venezuela and Beyond."* K. M. Rodriguez-Clark**, A. Cardozo-Urdaneta, L. Moran, L.Ovalle, M.A. Arvelo,, J. Morales-Campo, B. J. Coyle, **M. J. Braun**, and A. Sanchez-Mercado.

2018* Embassy of Guyana, January 2018. "*Smithsonian Ornithological Research and Conservation work in Guyana"*. **M. J. Braun**.**

2018* Guyana Republic Day, February 2018. "*Smithsonian Biodiversity Research and Conservation work in Guyana"*. **M. J. Braun**.** Invited talk during a celebration of Guyana's Republic Day at the Smithsonian Castle attended by 150 diplomats, dignitaries and friends of Guyana.

2018* Smithsonian-Mason School of Conservation Biogenomics Course, October 10, 2018. "*Bird on the Brink: Saving the Red Siskin*." **M. J. Braun**.**

2018* Arkansas Executive Forum. "Genomics, Entrepreneurship and Bird-Friendly Coffee: Saving the Red Siskin." **M. J. Braun**.**

2018* University of Arkansas Entrepreneurship Hub. "Bird on the Brink: Saving the Red Siskin with Social Entrepreneurship." **M. J. Braun**.**

2018* Augusta County Bird Club. "Bird on the Brink: Saving the Red Siskin." **M. J. Braun**.**

2018* Anne Arundel Bird Club. "Progress in Resolving the Avian Tree of Life; or Why Geese Now Come Before Loons on Your Checklist." **M. J. Braun**.**

2017 SI Biogenomics Conference Feb 2017. "Conservation genomics of the highly endangered Red Siskin." H. C. Lim**, R. Dikow, B. Coyle, P. Frandsen, W. Johnson and **M. J. Braun.**

2017 Society for the Study of Evolution Annual Meeting. "Testing the limits of phylogenomics for resolving the bird tree of life." S. Reddy**, R. T. Kimball, A. Pandey, P. A. Hosner, **M. J. Braun**, S. J. Hackett, K-L. Han, J. Harshman, C. J. Huddleston, S. Kingston, B. D. Marks, K. J. Miglia, W. S. Moore, F. H. Sheldon, C. C. Witt, T. Yuri and E. L. Braun.

2017* Finches '17- Annual Convention of the Queensland Finch Society. "The Red Siskin Initiative: Saving an endangered finch in partnership with aviculturists." J. Fink**, M. Arvelo, **M. J. Braun**, B. J. Coyle, S. Davis, Z. Diaz, , W. Lynch, P. Hansen, P. Marinari, J. Miranda, S. Monfort, L. Ovalle-Moleiro, J. P. Rodríguez, K. M. Rodríguez-Clark, A. Rodríguez-Ferraro, E. Royer, A. Y. Sánchez-Mercado and B. Sucre.

2016 Society for the Study of Evolution Annual Meeting. Poster on "Progress in Resolving the Avian Tree of Life." N. D. White**, E. L. Braun, B. C. Faircloth and **M. J. Braun**.

2016* Hampshire Bird Club, Amherst MA. "Bird on the Brink: Saving the Red Siskin." **M. J. Braun****

2015 Society for Systematic Biology Annual Meeting. "Resolving the Avian Tree of Life using Ultraconserved Elements." N. D. White**, B. C. Faircloth, E. L. Braun, J. E. McCormack, D. L. Swofford, R. T. Brumfield, T. C. Glenn, and **M. J. Braun**.

NOTE: White won the Ernst Mayr Award for Best Student Paper given at this meeting.

2015* Graduate School Recruiting Event, University of Maryland. "Avian Evolutionary Genomics." **M. J. Braun****

2015* National Zoological Park, Wildlife Trafficking Awareness Day. "The Red Siskin Initiative." **M. J. Braun**** and B. J. Coyle.

2014* Programa Integral de Conservación del Cardenalito, Bararida Zoo, Barquisimeto, Venezuela. "El Cardenalito en Guyana." **M. J. Braun**** (Given in Spanish).

2014 Society for the Study of Evolution Annual Meeting. "Characterizing Avian UCEs and Inference of Nightbird (*Strisores*) Phylogeny." N.D. White**, B. C. Faircloth and **M. J. Braun.**

2014* SI-Illinois IGERT Training Course in Panama. "Sexual Selection, Hybridization and the Genomic Architecture of Speciation in Manakins." **M. J. Braun.****

2013* National Cage Bird Show. "Bird on the Brink: Saving the Red Siskin." **M. J. Braun****

2013* Australia National University. "Early Bird: Assembling the Avian Tree of Life." **M. J. Braun**.****

2013 Society for the Study of Evolution Annual Meeting. "Hybridization, Introgression and Differentiation on a Continental Scale: Genome-Wide Sequence Analysis." S. E. Kingston**, T. L. Parchman, Z. Gompert, C. A. Buerkle, C. Cicero, J. Klicka and **M. J. Braun**.

2013 Society for the Study of Evolution Annual Meeting. "Unraveling the Evolutionary History of Nocturnal Vision in the Nightbirds." N. D. White**, B. C. Faircloth, E. L. Braun, J. McCormack, and **M. J. Braun**.

2012* Northern Virginia Bird Club. "Bird on the Brink: Saving the Red Siskin". **M. J. Braun**.**

2012 North American Ornithological Conference. "Hybridization, gene flow, and differentiation among towhees in Mexico: genome-wide sequence analysis." S. E. Kingston**, T. L. Parchman, and **M. J. Braun**.

2012 North American Ornithological Conference. "Early Bird Update: The Avian Tree of Life Based on 28 Genes and 203 Taxa". **M. J. Braun****, S. Mirarab, T. Warnow and E. L. Braun.

2012* Northern Virginia Bird Club. "Species and species concepts". **M. J. Braun**.**

2012* SI Biodiversity Genomics Open Forum. "Building the Framework of Biodiversity Science: Next Generation Phylogenomics". **M. J. Braun****.

2012 Senate of Scientists Lightning Talks. "Continental convergences: Lessons from the avian tree of life". **M. J. Braun**.**

2011 American Ornithologists Union Annual Meeting. "The impact of DNA sequence alignment methods on estimates of the avian tree of life". **M. J. Braun****, K. Liu, T. Warnow, C. R. Linder and E. L. Braun.

2011* Smithsonian Congress of Scholars Annual Symposium. "Next generation DNA sequencing: transformative technology for biodiversity science". **M. J. Braun****

2011 Challenges for Large-scale Phylogeny and Alignment Estimation, A Workshop at the National Evolutionary Synthesis Center. "The impact of DNA sequence alignment methods on estimates of the avian tree of life". **M. J. Braun****, K. Liu, T. Warnow, C. R. Linder and E. L. Braun.

2011* Molecular Evolution Course, St. Mary's College. "Molecular Population Genetics of Birds." **M. J. Braun**.**

2010 40th Anniversary Symposium of Instituto Venezolano de Investigaciones Cientificos, Caracas, Venezuela. De bases filogeográficas a herramientas diagnósticas moleculares: la genética evolutiva y de conservación del Cardenalito (*Carduelis cucullata*). K. M. Rodríguez-Clark*, D. Ascanio, **M. J. Braun**, E. Gamero, J. Maldonado, L. Ovalle, J. Pérez-Emán.

2010 Association of Field Ornithologist's Annual Meeting. "The impact of DNA sequence alignment methods on estimates of the avian tree of life". **M. J. Braun****, K. Liu, T. Warnow, C. R. Linder and E. L. Braun.

2010* Gulf Coast Bird Observatory, Texas. "Bird on the Brink: The Story of the Red Siskin". **M. J. Braun****

2009* Molecular Evolution Course, St. Mary's College. "Molecular Systematics of Birds." **M. J. Braun**.**

2009 Association of Field Ornithologist's Annual Meeting. "Genome-wide levels of introgression and divergence across Mexican towhee hybrid zones." S. E. Kingston**, William Fagan, **M. J. Braun.**

2009 Association of Field Ornithologist's Annual Meeting. "Genome-wide survey of differentiation and introgression between hybridizing Appalachian chickadees." B. S. Davidson** and **M. J. Braun**.

2009 CIPRES All Hands Mtg, University of California, Berkeley. "Eight billion years of shrinkage in avian introns." J. Harshman**, E. L. Braun, **M. J. Braun**, R. C. K. Bowie, S. J. Hackett, K.-L. Han, C. J. Huddleston, R. T. Kimball, B. D. Marks, K. J. Miglia, W. S. Moore, S. Reddy, F. H. Sheldon, D. W. Steadman, C. C. Witt, and T. Yuri.