

Jeffrey M. DaCosta, Ph.D.

Biology Department

Boston College

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EDUCATION

- 2014 Ph.D. Biology
Department of Biology, Boston University, Boston, MA
Academic Advisor: Dr. Michael Sorenson
- 2006 M.Sc. Biology
School of Life Sciences, University of Nevada, Las Vegas, NV
Academic advisors: Dr. John Klicka and Dr. Brett Riddle
- 1998 B.S. Biology
Department of Biology, University of Massachusetts, Amherst, MA

PROFESSIONAL APPOINTMENTS

- 2022-Present Associate Professor of the Practice
Biology Department, Boston College, Chestnut Hill, MA
- 2016-2022 Assistant Professor of the Practice
Biology Department, Boston College, Chestnut Hill, MA
- 2004-Present Research Equipment Program Chair and Board Member
Neotropical Grassland Conservancy
NGO dedicated to the conservation of Neotropical grasslands
- 2014-2016 Post-doctoral Fellow
Dept. Organismic and Evolutionary Biol., Harvard University, Cambridge, MA
Comparative genomics of a species radiation: sequencing the apple tribe
- 2007-2014 Research and Teaching Fellow
Department of Biology, Boston University, Boston, MA
- 2005-2006 Research Technician
School of Life Sciences, University of Nevada, Las Vegas, NV
Surveys of flammulated owls (*Otus flammeolus*) in Nevada
- 2003-2006 Research and Teaching Assistant
School of Life Sciences, University of Nevada, Las Vegas, NV
- 2000-2003 R&D Specialist I
Transkaryotic Therapies, Cambridge, MA

- Pre-clinical research using a knockout mouse model
- 1999-2000 Field Assistant
Dept. of Ecology and Evolutionary Biol., Cornell University, Ithaca, NY
Worked for PhD candidates in David Winkler's lab at Cornell
- 1998 Intern
US Department of Agriculture, Mapleton, OR
Population monitoring of the northern spotted owl (*Strix occidentalis*)

PUBLICATIONS

- Wilson RE, Sonsthagen SA, **DaCosta JM**, Sorenson MD, Fox AD, Weaver M, Skalos D, Kondratyev AV, Scribner KT, Walsh A, Ely CR, Talbot SA. 2022. As the Goose Flies: Migration Routes and Timing Influence Patterns of Genetic Diversity in a Circumpolar Migratory Herbivore. *Diversity*. 14: 1067.
- Spottiswoode CN, Tong W, Jamie GA, Stryjewski KF, **DaCosta JM**, Kuras ER, Green A, Hamama S, Taylor IG, Moya C, Sorenson MD. 2022. Genetic architecture facilitates then constrains adaptation in a host–parasite coevolutionary arms race. *Proceedings of the National Academy of Sciences – USA*. 119: e2121752119.
- DaCosta JM** and Sorenson MD. 2021. Variation in the non-mimetic vocalizations of brood-parasitic indigobirds and their potential role in speciation. *Frontiers in Ecology and Evolution*. 9: 725979.
- Larison B, Lindsay AR, Bossu C, Sorenson MD, Kaplan JD, Evers DC, Paruk J, **DaCosta JM**, Smith TB, Ruegg K. 2021. Leveraging genomics to understand threats to migratory birds. *Evolutionary Applications*. 14: 1646-1658.
- Feng F... (>100 authors)... **DaCosta JM**... Zhang G. 2020. Dense sampling of bird diversity increases power of comparative genomics. *Nature*. 587: 252-257.
- D'Urban Jackson J, Bruford MW, Székely T, **DaCosta JM**, Sorenson MD, Russo IM, Maher KH, Cruz-López M, Galindo-Espinosa D, Palacios E, de Sucre-Medrano AE, Cavitt J, Pruner R, Morales AL, Gonzalez O, Burke T, Küpper C. 2020. Population differentiation and historical demography of the threatened snowy plover *Charadrius nivosus* (Cassin, 1858). *Conservation Genetics*. 21: 387-404.
- Povilus RA, **DaCosta JM**, Grassa C, Satyaki PRV, Moeglein M, Jaenisch J, Xi Z, Mathews S, Gehring M, Davis CC, Friedman WE. 2020. Water lily (*Nymphaea thermarum*) genome reveals variable genomic signatures of ancient vascular plants cambium losses. 2020. *National Academy of Sciences – USA*. 117: 8649-8656.
- Wells CP, Lavretsky P, Sorenson MD, Peters JL, **DaCosta JM**, Turnbull S, Uyehara KJ, Malachowski CP, Dugger BD, Eadie JM, Engilis Jr A. 2019. Persistence of an endangered native duck, feral mallards, and multiple hybrid swarms across the main Hawaiian Islands. *Molecular Ecology*. 28: 5203-5216.

- Dongmo JB, **DaCosta JM**, Djieto-Lordon C, Ngassam P, Sorenson MD. 2019. Variable phylogeographic histories of five forest birds with populations in Upper and Lower Guinea: implications for taxonomy and evolutionary conservation. *Ostrich*. 90: 257-270.
- DaCosta JM**, Miller MJ, Mortensen JL, Reed JM, Curry RL, Sorenson MD. 2019. Phylogenomics clarifies biogeographic and evolutionary history, and conservation status of West Indian tremblers and thrashers (Aves: Mimidae). *Molecular Phylogenetics and Evolution*. 136: 196-205.
- Lavretsky P, **DaCosta JM**, Sorenson MD, McCracken KG, Peters JL. 2019. ddRAD-seq data reveal significant genome-wide population structure and divergent genomic regions that distinguish the mallard and close relatives in North America. *Molecular Ecology*. 28: 2594-2609.
- Wilson RE, Sonsthagen SA, **DaCosta JM**, Ely CR, Sorenson MD, Talbot SL. 2019. Identification of single nucleotide polymorphisms for use in a genetic stock identification system for greater white-fronted goose (*Anser albifrons*) subspecies wintering in California. US Geological Survey Open-File Report 2019-1040.
- Peters JL, Lavretsky P, **DaCosta JM**, Bielefeld RR, Feddersen JC, Sorenson MD. 2016. Population genomic data delineate conservation units in mottled ducks (*Anas fulvigula*). *Biological Conservation*. 203: 272-281.
- Arnold BJ, Lahner B, **DaCosta JM**, Weisman CM, Hollister JD, Salt DE, Bomblies K, Yant L. 2016. Borrowed alleles and convergence: serpentine adaptation in the face of inter- and intraspecific gene flow. *Proceedings of the National Academy of Sciences – USA*. 113: 8320-8325.
- DaCosta JM** and Sorenson MD. 2016. ddRAD-seq phylogenetics based on nucleotide, indel, and presence-absence polymorphisms: analyses of two avian genera with contrasting histories. *Molecular Phylogenetics and Evolution*. 94: 122-135.
- Lavretsky P, **DaCosta JM**, Hernández-Baños B, Engilis A, Sorenson MD, and Peters J. 2015. Speciation genomics and a role for the Z chromosome in the early stages of divergence between Mexican ducks and mallards. *Molecular Ecology*. 24: 5364–5378.
- Ebel E, **DaCosta JM**, Sorenson MD, Hill R, Briscoe A, Willmott K, and Mullen S. 2015. Rapid diversification associated with ecological specialization in Neotropical *Adelpha* butterflies. *Molecular Ecology*. 24: 2392-2405.
- DaCosta JM** and Sorenson MD. 2014. Amplification biases and consistent recovery of loci in a double-digest RAD-seq protocol. *PLoS One*. 9: e106713.
- DaCosta JM** and Sorenson MD. 2014. An experimental test of host song mimicry as a species recognition cue among male brood parasitic indigobirds (*Vidua* spp.). *Auk: Ornithological Advances*. 131: 549-558.
- Sorenson MD and **DaCosta JM**. 2011. Genotyping HapSTR loci: phase determination from direct sequencing of PCR products. *Molecular Ecology Resources*. 11: 1068-1075.

- DaCosta JM**, Spellman GM, Escalante P, and Klicka J. 2009. A molecular systematic revision of two historically problematic songbird clades: *Aimiphila* and *Pipilo*. *Journal of Avian Biology*. 40: 206-216.
- DaCosta JM**, Wehtje W, and Klicka J. 2008. Historic genetic structure and paraphyly within the Great-tailed Grackles. *Condor*. 110: 170-177.
- DaCosta JM** and Klicka J. 2008. The Great American Interchange in birds: a phylogenetic perspective with the genus *Trogon*. *Molecular Ecology*. 17:1328-1343.
- DaCosta JM**, Spellman GM, and Klicka J. 2007. Bilateral gynandromorphy in a White-ruffed Manakin (*Corapipo altera*). *Wilson Journal of Ornithology*. 119:289-291.
- Garcia AR, **DaCosta JM**, Pan J, Muenzer J, and Lamsa JC. 2007. Preclinical dose ranging studies for enzyme replacement therapy with idursulfase in a knock-out mouse model of MPS II. *Molecular Genetics and Metabolism*. 91:183-190.
- Muenzer J, Lamsa JC, Garcia AR, **DaCosta JM**, Garcia J, and Treco DA. 2002. Enzyme Replacement therapy in mucopolysaccharidosis type II (Hunter syndrome): a preliminary report. *Acta Paediatrica Supplement*. 91:98-99.

TEACHING EXPERIENCE

- 2016-Present Assistant/Associate Professor of the Practice
 Biology Department, Boston College, Chestnut Hill, MA
 BIOL2010: Ecology and Evolution
 BIOL2300: Biostatistics
 BIOL4075: Research in Molecular Phylogenetics (new course)
 BIOL4410: Ornithology (new course)
 BIOL4450: Behavioral Ecology (new course)
 BIOL4802: Research in Evolutionary Genomics (new course)
 BIOL6160: Graduate Bioinformatics
- 2015 Lecturer
 College of General Studies, Boston University, Boston, MA
 CGS NS201: Biology 1
- 2014 Lecturer (course designer)
 Experimental College, Tufts University, Medford, MA
 EXP-0032-F: Renewable Energy: The Ecological Impacts
- 2007-2013 Teaching Fellow¹ and Guest Lecturer²
 Department of Biology, Boston University, Boston, MA
 CAS BI 302: Vertebrate Zoology¹
 CAS BI 303: Evolutionary Ecology^{1,2}
 CAS BI 407: Animal Behavior¹
 CAS BI 508: Behavioral Ecology^{1,2}

ZOOL 733: Behavioral Ecology² (University of New Hampshire)
2003-2005 Teaching Assistant
School of Life Sciences University of Nevada Las Vegas, Las Vegas, NV
BIOL 189: Fundamentals of Life Science

GRANTS AND AWARDS

2019: Boston College Ignite Program – Environmental DNA as an emergent tool to study the ecology of temperate forests (\$14,017)
2018: NSF DEB – Collaborative Research: Comparative Genomics of Host-specific Adaptation and Life History Evolution of Brood Parasitic Birds (\$99,106)
2013: 1st Place (poster): BU Biology Graduate Student Association student symposium.
2011: Boston University Department of Biology Outstanding Teaching Fellow.
2010: NSF DDIG – RAD phylogenetics: harnessing next-generation sequencing for molecular systematics (\$13,223).
2008: American Museum of Natural History Chapman Memorial Grant (\$2,100).
2005: UNLV Graduate Research Assistantship Training Grant (\$3,600).
2005: 1st Place (oral): UNLV Graduate and Professional Student Organization research forum.
2004-2006: UNLV Graduate and Professional Student Association grant (x4) (\$2,250).

PRESENTATIONS & WORKSHOPS

Invited Speaker:

2014: University of Massachusetts Lowell, Lowell, MA.
2013: Louisiana State University Museum of Natural History, Baton Rouge, LA.
2013: Wright State University, Dayton, OH.
2012: American Museum of Natural History, New York, NY.
2009: University of Dar es Salaam & Houghton College (Tanzania campus), Tanzania.
2008: Colby College, Waterville, ME.

Professional Meetings:

2014: Evolution, Raleigh, NC.
2012: North American Ornithological Conference, Vancouver, BC.
2009: American Ornithologists' Union, Philadelphia, PA.
2009: Society of Integrative and Comparative Biology, Boston, MA.
2008: Evolution, Minnesota, MN.
2005: American Ornithologists' Union, Santa Barbara, CA.

Professional Workshops:

- 2011: Evolutionary Genomics of Non-Model Species: Next Generation Sequencing, Data Management, and Hypothesis Testing. – American Genetics Association, Irapuato, Mexico.
- 2010: Genetics and Genomics of Speciation. – EU Marie Curie Initial Training Network, Speciation, Sheffield, Great Britain.

SERVICE AND COMMUNITY OUTREACH

Committee Member:

Curriculum Committee, Biology Department, Boston College.
Tree Campus USA, Boston College.

Undergraduate Academic Advisor:

Faculty advisor for 30-40 undergrad Biology majors per semester, Boston College.

Undergraduate Research Advisor:

Mentor ~4-6 undergraduate students in independent research, Boston College.

Student Group Advisor:

Life Sciences Journal, Boston College.
Eagle Audubon, Boston College.

Grant Reviewer:

National Science Foundation, Portuguese Foundation of Science and Technology.

Journal Reviewer:

African Journal of Ecology, Auk: Ornithological Advances, BMC Evolutionary Biology, Evolution, Journal of Biogeography, Journal of Caribbean Ornithology, Journal of Heredity, Molecular Ecology, Molecular Ecology Resources, Molecular Phylogenetics and Systematics, PeerJ, Wilson Journal of Ornithology, Zoological Journal of the Linnean Society.

Outreach:

Boston University GK-12 program, 5th grade, Pierce School, Brookline, MA.
Guest lecture, Runkle Elementary School ScienceFest, Brookline, MA.
Guest lecture, Cub Scouts, Rehoboth, MA.
Biology Inquiry and Outreach with Boston University Graduate Students (BIOBUGS).
Judge, The English High School Science Fair, Boston, MA.