Julia M. York

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Education

2017-Present • Ph.D. Ecology, Evolution, and Behavior • University of Texas at Austin • Advisor: Harold Zakon
2016 • M.Sc. Zoology • University of British Columbia • Advisor: Bill Milsom
2016 • Graduate extension student • University of California Berkeley
2010-2015 • B.Sc. Biology • University of British Columbia
2012-2013 • Exchange student • Uppsala University

Peer-reviewed publications

*indicates equal contribution

13) In press • Wallace, K.J.* and York, J.M.* • **A systems change framework for evaluating academic equity and inclusion in an ecology & evolution graduate program**• *Ecology & Evolution*

12) 2020 • Bakkeren, C., Smith, E., York, J.M., Chua, B., McCracken, K.G., and Milsom, W.K. • **A morphometric analysis of the lungs of high-altitude ducks and geese** • *Journal of Anatomy*

11) 2020 • Lague, S.L., Ivy, C.M., York, J.M., Chua, B.A., Alza, L., Cheek, R., Dawson, N.J., Frappell, P.B., Farrell, A.P., McCracken, K.G., Scott, G.R., and Milsom, W.K. • **Cardiovascular responses to progressive hypoxia in ducks native to high altitude in the Andes** • *Journal of Experimental Biology*

10) 2019 • Meir, J.U., York, J.M., Chua, B., Jardine, W., Hawkes, L.A., and Milsom, W.K. • **Reduced metabolism and increased O_2 pulse enable hypoxic flight in the bar-headed goose *Anser indicus*** • *eLife*
Selected press coverage:
• New York Times: These high-flying geese are "the astronauts of the bird world"
• Washington Post: This astronaut raised geese to study their hearts. The birds stole hers.
• The Times of London: Geese above Everest are no flight of fancy
• CBC: NASA astronaut stands in as "mother goose" for UBC study on high-flying geese

9) 2019 • Ivy, C.M., Lague, S.L., York, J.M., Chua, B.A., Alza, L., Cheek, R., Dawson, N.J., Frappell, P.B., McCracken, K.G., Milsom, W.K., and Scott, G.R. • **Control of breathing and respiratory gas exchange in high-altitude ducks native to the Andes** • *Journal of Experimental Biology*

8) 2018 • Swapna, I., Ghezzi, A., York, J.M., Markham, M.R., Lu Y., Halling, D.B., Gallant, J.R., and Zakon, H. • **Electrostatic tuning of a potassium channel in electric fish** • *Current Biology*

7) 2018 • *Ivy, C.M., *York, J.M., Lague, S.L., Chua, B.A., Alza, L., McCracken, K.G., Milsom, W.K., and Scott, G.R. • **Validation of a pulse oximetry system for high-altitude waterfowl by examining the hypoxia responses of the Andean goose (*Chloephaga melanoptera*)** • *Physiological and Biochemical Zoology*

6) 2018 • York, J.M., Scadeng, M., McCracken, K.G., and Milsom, W.K. • **Respiratory mechanics and morphology of Tibetan and Andean high-altitude geese with divergent life history** • *Journal of Experimental Biology*
• Shortlisted for the JEB Outstanding Paper Prize of 2018

5) 2017 • Maina, J.N., McCracken, K.G., Chua, B., York, J.M., and Milsom, W.K. • **Morphological and morphometric specializations of the lung of the Andean goose, *Chloephaga melanoptera*: a lifelong high altitude resident** • *PLoS One*
• Recognized as among the top 10% most cited PLoS One papers from 2017

4) 2017 • York, J.M., Chua, B.A., Ivy, C.M., Alza, L., Cheek, R., Scott, G.R., McCracken, K.G., Frappell, P.B., Dawson, N.J., Lague, S.L., and Milsom, W.K. • **Respiratory mechanics of eleven avian species resident at high and low altitude** • *Journal of Experimental Biology*

3) 2016 • Dawson, N.J., Ivy, C.M., Alza, L., Cheek, R., York, J.M., Chua, B., Milsom, W.K., McCracken, K.G., and Scott, G.R. • **Mitochondrial physiology in the skeletal and cardiac muscles is altered in torrent ducks, *Merganetta armata*, from high altitudes in the Andes** • *Journal of Experimental Biology*

2) 2015 • *Dzal, Y.A., *Jenkin, S.E.M., *Lague, S.L., *Reichert, M.N., *York, J.M., and Pamenter, M.E. • **Oxygen in demand: how oxygen has shaped vertebrate physiology** • *Comparative Biochemistry and Physiology Part A*

1) 2014 • *Oliveira, M.B., *Liedholm, S.E., *Lochte, A.A., *Lopez, J.E., *Pazio, M., *Martin, J.P., *Mörch, P.R., *Salakka, S., *York, J.M., *Yoshimoto, A., and Janssen, R. • **Expression of arthropod distal limb-patterning genes in the onychophoran *Euperipatoides kanangrensis*** • *Development Genes and Evolution*

Alternate publications

2018 • Ellis, L. and Brown, S. • **How a Department Took On the Next Frontier in the #MeToo Movement** • *Chronicle of Higher Education*

2018 • York, J.M. • **Creationism helped push climate skepticism into classrooms** • *MassiveScience*

2017 • York, J.M. • **Alaska's oilfield has been subtly changing the state's environment for decades. Will Congress notice?** • *MassiveScience*

2017 • York, J.M. • **Congressional Visits Day**, Parts 1 and 2 • *Austin Science Advocates*

2017 • York, J.M. and Jonas, J • **Alaskans rethinking arctic refuge drilling** • *Fairbanks Daily News Miner*

2016 • York, J.M. • **Respiratory mechanics of high altitude waterfowl** • *University of British Columbia cIRcle thesis collection*

Journal reviews

Science, *PNAS*

Awards and fellowships

2020 • Stengl-Wyer Graduate Fellowship, UT Austin
2020 • Department of Integrative Biology Research Award, UT Austin
2019 • Ecolab grant, UT Austin Department of Integrative Biology
2018 • University of Texas Graduate School Continuing Fellowship, UT Austin
2018 • Zoology Scholarship Endowment for Excellence, Integrative Biology Joint Graduate Program
2017 • College of Natural Sciences Recruitment Fellowship, UT Austin
2016 • Faculty of Science Graduate Award, UBC Faculty of Graduate Studies
2015 • International Undergraduate Research Award**,** UBC Department of Zoology
2015 • Novo Nordisk Foundation Travel Award**,** Comparative and Evolutionary Physiology Section, American Physiological Society
2014 • Excellence in Undergraduate Research Award, David S. Bruce Awards, American Physiological Society
2014 • Undergraduate Research Excellence Fellowship**,** American Physiological Society
2014 • Hesse Undergraduate Ornithology Research Award, UBC Biodiversity Research Center
2014 • International Undergraduate Research Award, Work Learn Program, UBC Department of Zoology
2014 • Outstanding Undergraduate Abstract Award, David S. Bruce Awards, American Physiological Society

Public engagement

2020 • Speaker • Long-View Micro School • Bar-headed geese

2019 • Wired Interview • Why these geese wear tiny backpacks and fly in a wind tunnel• YouTube
2018 • Speaker • UT Forum Seminar • Physiology of high flying ducks and geese
2018 • Speaker • AAAS Science Storytellers
2018 • Speaker • AAAS Classroom Science Days • Pease Elementary School science class, Austin, TX
2017-present • Organizing president and media coordinator • Science Under the Stars, University of Texas at Austin public lecture series • scienceunderthestars.org
2017 • Participant • Congressional Visits Day, American Institute for Biological Sciences
2017 • Testified for the Texas State Board of Education on science curriculum standards
2016-present • Organizing member, author, and media coordinator • Austin Science Advocates, austinscienceadvocates.wordpress.com

Professional development

2019 • Functional R • RNASeq • TagSeq • Bioinformatics summer school • University of Texas at Austin
2018 • Communications boot camp for scientists • American Institute of Biological Sciences
2018 • Concentration in science communication • University of Texas at Austin
2018-present • Science communication certification • MassiveScience
2018 • Science engagement workshop • University of Texas at Austin
2018 • Data Visualization course • Edward Tufte
2016 • Introduction to R and Data Visualization • University of Texas at Austin
2011 • Rodent husbandry, anesthesia, and surgery certification • University of British Columbia

Research projects

2018-Present • **Acetylcholine receptors in poison frogs** • Supervisors: Harold H. Zakon and David Cannatella • Research assistant position

2017-Present • **TRP channel evolution in notothenioid fishes** • Supervisor: Harold H. Zakon • Investigating the evolution of molecular thermosensors and thermosensation in Antarctic fishes

2017-Present • **Molecular thermosensors in *Atta texana* across a thermal gradient** • Independent project in collaboration with Sarah LaPotin • Determining how leaf-cutter ants across a thermal gradient identify the optimal thermal regime for fungus cultivation

2016-Present • **Evolution of potassium channels in weakly electric fish** • Supervisor: Harold H. Zakon • Investigating sequence evolution of potassium channel tetramerization using comparative electrophysiology in *Xenopus* oocytes.

2014-2017 • **Respiratory physiology and lung mechanics of high-altitude waterfowl** • Supervisors: William K. Milsom and Douglas Altshuler • Field and lab investigations on 13 species of waterfowl from three continents comparing physiology of pulmonary mechanics and lung morphology.

2015-Present • **Respiratory physiology and running mechanics of bats** • Collaboration with Yvonne Dzal, Dr. John Hermanson, and Dr. Teri Orr • Investigated hypoxia tolerance of bat species in the field and ran vampire bats on treadmill to measure cost of bounding gait.

2010-2019 • **Respiratory physiology of the bar-headed goose** • Supervisors: William K. Milsom and Jessica U. Meir • Raised, imprinted, and trained goslings for wind tunnel flight to investigate flight cardiorespiratory physiology in hypoxia.

2012-2013 • **Molecular genetics of the lichen *Thamnolia vermicularis*** • Supervisors: Hanna Johannesson and Ioana Brännström • Investigated the identity of an unknown lichen parasite in the field and lab, built phylogenetic trees to investigate haplotype relatedness.

2005-2013 • **Hibernation physiology and phenology of the arctic ground squirrel** • Supervisors: Brian M. Barnes and Franziska Kohl • Trapped and logged ground squirrels at remote field site and assisted in surgical implantation of abdominal temperature loggers.

Teaching experience

2018 • Guest lecturer • Evolutionary neurobiology • University of Texas at Austin
2018 • Guest lecturer • High altitude biology and medicine • University of Miami
2018 • Inclusive Classrooms Leadership Certificate for Excellence in Teaching • Division of Diversity and Community Engagement • University of Texas at Austin
2017-2019 • Volunteer • Inspiring Connections Outdoors
2017-2018 • Teaching assistant • Courses: Evolutionary neurobiology, Genetics
2009-2010 • English teacher • Escuela Basica Adrián Jara • Luque, Paraguay

Conference and seminar presentations

2020 • Zoominar • **Temperature sensation in the Texas leaf-cutter ant** • Brain, Behavior, and Evolution seminar series • University of Texas at Austin
2020 • Poster • **Identifying potential molecular thermosensors in Antarctic notothenioid fishes** • Society for Comparative and Integrative Biology Conference • Austin, TX
2019 • Seminar • **TRP channels in notothenioid fishes** • Brain, Behavior, and Evolution seminar series • University of Texas at Austin

2018 • Poster • **TRP channels in notothenioid fishes** • American Physiological Society meeting • New Orleans, LA
2018 • Poster • **Tetramerization and sequence evolution of potassium channels of weakly electric fishes** • Society for Integrative and Comparative Biology meeting, San Francisco, CA
2017 • Seminar • **TRP channels and aquaporins in icefish** • Brain, Behavior, and Evolution seminar series • University of Texas at Austin
2016 • Seminar • **Respiratory mechanics of high-altitude waterfowl** • Brain, Behavior, and Evolution seminar series • University of Texas at Austin
2016 • Talk • **Pulmonary mechanics and morphometrics comparing five high-altitude duck species and six low-altitude sister species** • Canadian Society of Zoologists meeting • London, ON
2015 • Talk • **Pulmonary mechanics and air sac morphology of the bar-headed goose (*Anser indicus*)** • Canadian Society of Zoologists meeting • Calgary, AB
2015 • Poster • **Pulmonary mechanics of high-altitude waterfowl** • Zoology Graduate Student Society symposium • Vancouver, BC
2015 • Poster • **Pulmonary mechanics of high-altitude waterfowl** • Experimental Biology meeting • Boston, MA
2015 • Poster • **Pulmonary mechanics of high-altitude waterfowl** • UBC Multidisciplinary Undergraduate Research Conference • Vancouver, BC
2014 • Poster • **Cardiorespiratory and metabolic changes during hypoxic flight in bar-headed geese** • Experimental Biology meeting • San Diego, CA
2014 • Talk • **Hypoxia tolerance in the bar-headed goose** • UBC Multidisciplinary Undergraduate Research Conference • Vancouver, BC
2012 • Poster • **Imprinting bar-headed geese to enable physiological monitoring during sustained flight** • Workshop on the Diversity, Evolution, and Mechanisms Controlling Activity Patterns at Tel Aviv University • Ein-Gedi, Israel