

Julia M. York

Curriculum Vitae

Department of Evolution, Ecology, and Behavior
School of Integrative Biology
University of Illinois Urbana-Champaign
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EDUCATION

Ph.D.	Ecology, Evolution, and Behavior, University of Texas at Austin, 2022
M.Sc.	Zoology, University of British Columbia, 2016
B.Sc.	Biology, University of British Columbia, 2015

PROFESSIONAL APPOINTMENTS

2023-present	Postdoctoral fellow, Department of Evolution, Ecology, and Behavior, University of Illinois Urbana-Champaign
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MAJOR PUBLICATIONS

*indicates equal contribution

In review	York, J.M. , Bhat, S., Kim, J., Cárdenas, L., and Cheng, C.H.C. Chromosomal level genome assemblies of Antarctic <i>Notothenia coriiceps</i> and temperate relative <i>Paranotothenia angustata</i> . <i>Scientific Data</i> . DOI: 10.1101/2025.10.11.681823.
In review	Cancino, S., Cabeza-Bratesco, D., Matamala, E., York, J.M. , Zavala, K., Montecinos, C., Bustamente-Villarreal, S., Maldonado, R., Riadi, G., Brauchi, S.E., and Opazo, J.C. An evolutionary novelty in TRPV1 functional regulation: characterization of a dominant-negative isoform exclusive to catarrhine primates. <i>Biophysical Journal</i> . DOI: 10.1101/2025.01.24.634766.
2026	Hettiarachchi, S.A., Lee, S., Kim, I.C., Lee, J.S., Desvignes, T., York, J.M. , Ghigliotti, L., Caccavo, J.A., and Kim, J.H. Adaptation to extreme environments: a review of Antarctic fish physiology. <i>Journal of Fish Biology</i> .
2026	*Currie, S. and * York, J.M. Temperature sensing in fishes: mechanisms and modulation in a warming world. <i>Journal of Experimental Biology Special Issue: Sensory Perception in a Changing World</i> . 229 (1): jeb250889. DOI: 10.1242/jeb.250889.
2026	Caccavo, J.A., Brooks, C., Carlig, E., Cavanagh, R., Desvignes, T., Di Blasi, D., Freer, J.J., Ghigliotti, L., Jones, C., Kim, J.H., Kwasniewski, H., Konijnenberg, R., Maschette, D., Mori, M., Novillo, M., Pinkerton, M.H., Queirós, J.P., Reid, W.D.K., Van de Putte, A.P., and York, J.M. SCARFISH: a new SCAR Action Group to coordinate Antarctic fish research. <i>Journal of Fish Biology</i> . DOI: 10.1111/jfb.70444.
2025	Lague, S.L., Ivy, C.M., York, J.M. , Dawson, N.J., Chua, B.A., Alza Leon, L., Scott, G.R.,

- McCracken, K.G., and Milsom, W.K. Gas exchange, oxygen transport, and metabolism in high-altitude waterfowl. *Philosophical Transactions of the Royal Society B: Biological Sciences*. 380 (1920): 20230424. DOI: 10.1098/rstb.2023.0424.
- 2024 **York, J.M.**, LaPotin, S., Taylor, T., and Mueller, U.G. Hymenopteran specific TRPA channel from the Texas leaf cutter ant (*Atta texana*) is heat and cold activated and expression correlates with environmental temperature. *Insect Science*. 32: 301-320. DOI: 10.1111/1744-7917.13364.
- 2024 McCracken, K.G., Scott, G.R., Alza, L., Astie, A., Bakkeren, C., Bautista, E., Bulgarella, M., Cheek, R.G., Chua, B.A., Dawson, N.J., Diaz, A., Ivy, C.M., Frappell, P.B., Kopuchian, C., Lague, S.L., Maina, J.N., Muñoz-Fuentes, V., Schell, E.R., Smith, M.M., Sprenger, R.J., Tubaro, P.L., Valqui, T., Weber, R.E., Wilner, D., Wilson, R.E., **York, J.M.**, and Milsom, W.K. Diving at high altitude: O₂ transport and utilization in the ruddy duck and torrent duck in the Andes. *Occasional Papers of the Museum of Natural Science*. 93: 1-77. DOI: 10.31390/opmns.093.
- 2023 **York, J.M.** Temperature activated transient receptor potential ion channels from Antarctic fishes. *Open Biology*. 13 (10): 230215. DOI: 10.1098/rsob.230215.
- 2023 **York, J.M.**, Borghese, C.M., *George, A., *Cannatella, D.C., and *Zakon, H.H. A potential cost of evolving epibatidine resistance in poison frogs. *BMC Biology*. 21 (144). DOI: 10.1186/s12915-023-01637-8.
- 2022 **York, J.M.** and Zakon, H.H. Evolution of transient receptor potential (TRP) ion channels in Antarctic fishes (Cryonotothenioidea) and identification of putative thermosensors. *Genome Biology and Evolution*. 14 (2): evac009. DOI: 10.1093/gbe/evac009.
- 2020 *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*. 10: 10922-10929. DOI: 10.1002/ece3.6817.
- 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*. 237 (1): 188-196. DOI: 10.1111/joa.13180.
- 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*. 223 (5): jeb211250. DOI: 10.1242/jeb.211250.
- 2019 Meir, J.U., **York, J.M.**, Chua, B., Jardine, W., Hawkes, L.A., and Milsom, W.K. Reduced metabolism and increased O₂ pulse enable hypoxic flight in the bar-headed goose *Anser indicus*. *eLife*. e44986. DOI: 10.7554/eLife.44986.
- 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*.

222 (7): jeb198622. DOI: 10.1242/jeb.198622.

- 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*. 28 (13): 2094-2102. DOI: 10.1016/j.cub.2018.05.012.
- 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*. 91 (3): 859-867. DOI: 10.1086/697053.
- 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*. 221 (1): jeb170738. DOI: 10.1242/jeb.170738. Shortlisted for the JEB Outstanding Paper Prize of 2018.
- 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*. 12 (3): e0174395. DOI: 10.1371/journal.pone.0174395.
- 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*. 220 (6): 1079-1089. DOI: 10.1242/jeb.151191.
- 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*. 219 (23): 3719-3728. DOI: 10.1242/jeb.142711.
- 2015 *Dzal, Y.A., *Jenkin, S.E.M., *Lague, S.L., *Reichert, M.N., ***York, J.M.**, and Pamerter, M.E. Oxygen in demand: how oxygen has shaped vertebrate physiology. *Comparative Biochemistry and Physiology Part A*. 186: 4-26. DOI: 10.1016/j.cbpa.2014.10.029.
- 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*. 224 (2): 87-96. DOI: 10.1007/s00427-014-0466-z.

SELECTED AWARDS AND FELLOWSHIPS

2024	Office of Polar Programs Postdoctoral Research Fellowship, National Science Foundation
2024	XI SCAR Open Science Conference Travel Award, National Science Foundation
2023	Fulbright Scholar Award, Fulbright Commission US Department of State, Universidad Austral de Chile
2023	XII SCAR Biology Symposium Travel Award, National Science Foundation
2022	Biological Adaptations to Environmental Change in Antarctica Training Grant Early Career

	Award, National Science Foundation
2021	College of Natural Sciences Continuing Fellowship, UT Austin
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	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

TEACHING EXPERIENCE

University of Illinois Urbana-Champaign, Instructor of Record

Evolution of traits and genomes (Spring 2025)

University of Illinois Urbana-Champaign, Guest lecturer

Organismal physiology (three classes Spring 2026)

New Mexico State University, Guest lecturer

Physiology of humans (Fall 2024)

University of Texas at Austin, Guest lecturer

Evolutionary neurobiology (Fall 2018)

University of Miami, Guest lecturer

High altitude biology and medicine (Spring 2018)

University of Texas at Austin, Teaching assistant

Evolutionary neurobiology (Spring 2018)

Genetics (Fall 2017)

INVITED TALKS

2025	Temperature sensation and genomics of Antarctic fishes, Lewis and Clark University, Portland, Oregon, November 3.
2024	Evolution of thermosensory mechanisms in Antarctic fishes, Society for Neuroscience, Chicago, Illinois, October 8.
2024	Thermosensor proteins in polar fish (and leaf cutter ants), University of Alaska Fairbanks Life Science Seminar, Fairbanks, Alaska, March 22.
2024	¿Que estoy haciendo en Chile y Antártica? Base Militar Bernardo O'Higgins, Antarctica, January 10.
2023	Temperature sensors in Antarctic fishes, EEB Colloquium, University of Illinois Urbana-Champaign, Urbana, Illinois, April 21.
2023	TRPA1 from Antarctic fish is robustly heat activated and modulated by lipids, Millennium Nucleus of Ion Channels-Associated Diseases, Valdivia, Chile, September 7.
2018	Physiology of high flying ducks and geese, UT Forum, Austin, Texas, April 6.

SELECTED CONFERENCE PRESENTATIONS AND SEMINARS

Conference talks

2026	Temperature sensor channels in Arctic gadids, International Congress on the Biology of Fish, July 15.
2024	Temperature sensing proteins expressed in Antarctic fish across species pairs

	independently re-adapted to temperate waters, Scientific Committee on Antarctic Research XI Open Science Conference, August 23, and International Congress on the Biology of Fish, June 25.
2023	Thermosensor proteins in Antarctic notothenioid fishes, XII SCAR Biology Symposium, August 1.
2023	Temperature sensors in Antarctic fishes, 2 nd US Antarctic Science Meeting, June 8.
2021	Uncovering molecular mechanisms of thermosensation in Antarctic fishes, Association for Polar Early Career Scientists, May 12, and 1 st US Antarctic Science Meeting, July 13.
2016	Pulmonary mechanics and morphometrics comparing five high-altitude duck species and six low-altitude sister species, Canadian Society of Zoologists, May 2.
2015	Pulmonary mechanics and air sac morphology of the bar-headed goose (<i>Anser indicus</i>), Canadian Society of Zoologists, May 21.
Seminars	
2024	Molecular thermosensor adaptations in polar fishes, Evolution, Ecology, and Behavior Colloquium, University of Illinois Urbana-Champaign, November 8.
2023	Temperature sensors in the Texas leaf-cutter ant, UT Austin Brain, Behavior, and Evolution Seminar, February 24.
2022	Thermosensors in Antarctic fishes, UT Austin Brain, Behavior, and Evolution Seminar, March 4.
2021	Thermosensation in Antarctic fishes, UT Austin Brain, Behavior, and Evolution Seminar, April 16.
2020	TRP channel evolution in Antarctic notothenioids, UT Austin Ion Channel Group Bioelectricity Zoominar Series, August 5.
2020	Temperature sensation in the Texas leaf-cutter ant, UT Austin Brain, Behavior, and Evolution Seminar, April 17.
2019	TRP channels in notothenioid fishes, UT Austin Brain, Behavior, and Evolution Seminar, April 19.
2017	TRP channels and aquaporins in icefish, UT Austin Brain, Behavior, and Evolution Seminar, September 22.
2016	Respiratory mechanics of high-altitude waterfowl, UT Austin Brain, Behavior, and Evolution Seminar, October 28.

MEDIA COVERAGE

Interviews

2026	Journal of Experimental Biology: ECR Spotlight, DOI: 10.1242/jeb.251461.
2024	UfroMedios: Chile, País de Ciencia TV interview, Pucón, Chile.
2024	US SCAR: US Antarctic interview series.
2024	Universidad de Magallanes TV Interview: Alba Terra Gigantes de la Antártica, Punta Arenas, Chile.
2019	Wired: Why these geese wear tiny backpacks and fly in a wind tunnel.

Features

2023	The Daily Texan: Fulbright Scholars program awards four university researchers to continue research abroad.
2023	CNS News: Some frogs use toxins to deter predators, but evolution doesn't supply free lunch.
2020	CNS News: Researchers use framework to address inequity in academia.
2020	CNS News: Seven emerging scientific leaders among recipients of Stengl-Wyer research

- support.
- 2019 New York Times: These high-flying geese are “the astronauts of the bird world.”
- 2019 The Times of London: Geese above Everest are no flight of fancy.
- 2018 The Chronicle of Higher Education: Ellis, L. and Brown, S. How a Department Took On the Next Frontier in the #MeToo Movement.

SERVICE

Manuscript peer review

Science; PNAS; eLife; Proceedings of the Royal Society B; Scientific Reports; Gene; Journal of Experimental Biology; Comparative Biochemistry and Physiology, Parts A, B, and D; Canadian Journal of Zoology; Biology Letters; Journal of Thermal Biology; Physiological Reports; Aquaculture

Undergraduate mentees

Postdoctoral: Orion Nowland, Vanshika Chanana, Emily Reisinger

Doctoral: Timothy Taylor, Sofia Beskid, Amrita Yellepuddy, Marisa Ballard, Mutahir Ahmad

Service to Discipline

Co-lead, Genomics, physiology, and pathology working group, Scientific Committee on Antarctic Research Fish action group (SCARFISH), scar.org/science/life/scarfish, 2024-present.

Session organizer, Genomic insights into past, present and future Antarctic biodiversity, Scientific Committee on Antarctic Research Open Science Conference, Oslo, Norway, 2026.

Session organizer, Antarctic ectotherm resilience: genomic and epigenomic adaptation and physiological capacities to cope with climate change, Scientific Committee on Antarctic Research Open Science Conference, Pucón, Chile, 2024.

Testified for the Texas State Board of Education on science curriculum standards, Austin, Texas, 2017.

Organizing member and media coordinator, Austin Science Advocates, austinscienceadvocates.wordpress.com, 2016-2019.

Service to University

Member, Diversity, equity, and inclusion committee, College of Natural Sciences, UT Austin, 2021-2023.

Member, Sexual misconduct working group, Office of the Provost, UT Austin, 2019-2020.

Member, Diversity, equity, and inclusion committee, Department of Integrative Biology, UT Austin, 2018-2023.

Service to Community

Panel reviewer, National Science Foundation Office of Polar Programs Postdoctoral Research Fellowship, 2024.

President and media coordinator, Science Under the Stars, UT Austin, scienceunderthestars.org, 2017-2022.

English Instructor, Escuela Básica Adrián Jara, Luque, Paraguay, 2009-2010.

Public talks

- 2025 AWIS Science Uncorked: Frozen ocean: polar fish evolution and our changing world, Champaign, Illinois.
- 2025 BARC Science Fair and Senior Center: How do we sense changing temperatures? Stories from snakes, bats, humans, and Arctic fish, Utqiagvik, Alaska.
- 2024 Salmon ‘n Science public talk: How polar fish sense and cope with freezing temperatures, Utqiagvik, Alaska.
- 2023 El Día de Antártica Street Poster: Los Peces de Antártica, Valdivia, Chile.

2021	Science Under the Stars speaker: Why birds are (figuratively) cooler than you.
2020	Long-View Micro School speaker: Bar-headed geese, Austin, Texas.
2018	AAAS Science Storytellers speaker, Austin, Texas.
2018	AAAS Classroom Science Days: Pease Elementary School, Austin, Texas.

CERTIFICATIONS

2026	Suicide Prevention in Higher Education, University of Illinois Urbana-Champaign
2026	Equitable Arctic Research Effective Community Engagement certification
2024	Leadership Skills workshop, Association of Polar Early Career Scientists
2021	Polar Evolutionary Genomics workshop, University of Florida
2020	Concentration in Leadership and Project Management, McCombs School of Business, UT Austin
2020	Inclusive Teaching and Learning Symposium, Faculty Innovation Center, UT Austin
2019	Inclusive Classrooms Leadership Certificate for Excellence in Teaching, Division of Diversity and Community Engagement, UT Austin
2018	Communications boot camp for scientists, American Institute of Biological Sciences
2018	Concentration in Science Communication, UT Austin
2018	Science communication certification, MassiveScience
2018	Data Visualization course, Edward Tufte

LANGUAGE PROFICIENCY

Spanish, fluent