# Jenn M. Coughlan

Department of Ecology and Evolutionary Biology, Yale University
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## Appointments

**July 2022** — *Assistant Professor*, **Yale University** Department of Ecology and Evolutionary Biology

**2018-2022** — *Postdoctoral Researcher*, **UNC Chapel-Hill,** Biology Department
Advisor: D. Matute

## Education

**2012-2018** — Certificate in College Teaching, **Duke University**

**2012-2018** — PhD program, Biology Department, **Duke University**
Advisor: J. Willis

**2010-2012** — MSc., Department of Ecology and Evolutionary Biology, **University of Toronto**
Advisors: T.A. Dickinson and S. Stefanovic

**2006-2010** — BSs., Honours Program, Department of Biology, **Trent University**
Advisor: P. Frost

## Grants

### *Active*

NIH R35 (MIRA): The Evolution of Genomic Imprinting and Strong Reproductive Isolation (R35GM150907, Coughlan-PI, 08/01/2023 - 07/30/2028, $2,093,750)

Yale Hutchinson Collaborative Grant- The Genomic Basis of Climate Resiliency: Leveraging Current Diversity to Predict Population Persistence and Future Species Distributions using a widespread herb (Coughlan-Co-PI, 08/01/2023 - 07/30/2025, $450,000)

### *Previous*

**2020:** American Genetics Association Special Events Award for GRS: Speciation- *On the origin and persistence of species* ($2,500)

**2019:** Collaborative Research RoL: Rapid Evolution of Reproductive Isolation via Hybrid Seed Lethality in *Mimulus*. *Contributed substantially to the conceptual framework and writing of the grant & am involved as a highly qualified person in the research,* NSF DEB Award ($1,900,000)

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**2015-2018:** Doctoral Dissertation Improvement Grant (DDIG), National Science Foundation, Co-PI ($20,660)

## Awards, Prizes, and Honors

**2023:** New Phytologist Tansley Medal, *Finalist*
**2022:** Society for the Study of Evolution's Dobzhansky Prize *Honorable Mention*
**2022:** American Journal of Botany Early Career Synthesis Prize, *Finalist*
**2020:** James F. Crow Institute Early Career Seminar Award
**2019:** Harold Sanford Perry Prize for Best Thesis in Plant Sciences
**2017, 2018:** Duke Data Expeditions, Information Initiative at Duke (iiD), grant for teaching undergraduates big data analysis techniques.
**2017:** Hamilton Award Best Student Presentation *Finalist*, Society for the Study of Evolution ($500 travel stipend)
**2017:** Graduate Teaching Award, Duke Biology ($300)
**2015:** Student Research Award, American Society for Naturalists ($2,000)
**2014:** Rosemary Grant Award, Society for the Study of Evolution ($2,500)
**2014:** Ray J. Tysor Graduate Fellowship ($5,500, plus tuition)
**2014-2015:** Myra and William Waldo Boone Fellowship ($21,580, plus tuition)
**2013-2015:** Duke Biology Research Grant ($1,000/year)
**2012-2013:** Duke Biology Fellowship ($66,216)
**2011:** University of Toronto internal Award ($3,500)
**2010:** Northern Scientific Training Program, NSERC ($2,850)
**2009:** Limnology Award, Trent University ($300)
**2009:** Biological Achievement Award, Trent University ($100)
**2006, 2008-2010:** Entrance Scholarship, Trent University ($2,500 per year)

## Publications

### *Preprints & In Review*

(24). Kumawat, Surbhi; Irene Martinez; Dhenugen Logeswaran, Hongfei Chen, **Jenn M. Coughlan,** Julian J.-L. Chen, Yaowu Yuan, James Sobel, and jae Young Choi. 2024. Transposition, duplication, and divergence of the telomerase RNA underlies the evolution of *Mimulus* telomeres. *In review at MBE*.

(23). Soliman, H[**]. and **J.M. Coughlan**. 2024 United in conflict: Convergent signatures of parental conflict in angiosperms and placental mammals. *Minor revision at Journal of Heredity*.

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## *Peer-reviewed*

22. Stankowski, S.; A. Cutter; I. Satokangas, … **J.M. Coughlan**…J. Kulmuni. 2024. Toward the integration of speciation research. *Accepted at Evolutionary Journal of the Linnean Society.*

21. **Coughlan J.M.** 2023c. The role of conflict in shaping plant biodiversity. *New Phytologist, doi: 10.1111/nph.19233.* **Tansley Medal finalist contribution.**

20. Ken A. Thompson; Yaniv Brandvain; **Jenn M. Coughlan**; Hannah Justen; Catherine Linnen; Daniel Ortiz-Barrientos; Catherine A. Rushworth; Hilde Scheemann; Molly Schumer; Rike Stelkins. 2023. The ecology of hybrid incompatibilities. *Cold Spring Harbor Perspectives in Biology*, doi:10.1101/cshperspect.a041440

19. Reifova, Radka; S. Lorena Ament-Velasquez, Yann Bourgeois; **Jenn M. Coughlan**; Jonna Kulmuni; Agnieska P. Lipinska, Genta Okude, Laurie Stevison, Kohta Yoshida, Jun Kitano. 2023. Mechanisms of intrinsic postzygotic isolation from genic, chromosomal and genomic perspectives. *Cold Spring Harbor Perspectives in Biology*, doi: 10.1101/cshperspect.a041607.

18. Ivey, C.; N. Habecker; J.-P. Bergmann; J. Ewald; M. Frayer; **J.M. Coughlan.** 2023. Weak reproductive isolation and extensive gene flow between *Mimulus glaucescens* and *M. guttatus* in northern California. *Evolution*, qpad044. *doi:* 10.1093/evolut/qpad044.

17. **Coughlan J.M.** 2023a. The role of hybrid seed inviability in angiosperm speciation. *American Journal of Botany*, e16135. *doi:* 10.1002/ajb2.16135. **AJB Synthesis Award finalist contribution**

16. **Coughlan J.M.** 2023b. Indirect effects of parental conflict on conspecific offspring development. *American Naturalist* 201:154-162. *doi: 10.1086/721919*

15. Dagilis, A.J. †; D. Peede†; **J.M. Coughlan†;** G.I. Joffre; E.R.R. D'Agostino; H. Mavengere[1], A.D. Tate[1], D.R. Matute. 2022. A need for standardized

reporting of introgression: Insights from studies across eukaryotes. *Evolution Letters* 6: 344-357. *doi:10.1002/evl3.294*

14. R.A. York, L. Brezovec, **J. Coughlan**, S. Herbst, A. Krieger, S-Y Lee, B. Pratt, A. Smart, E. Song, A. Suvorov, D.R. Matute, J. C. Tuthill, T. R. Clandinin. 2022. The tempo and mode of walking evolution in drosophilids. *Current Biology* 32: 3005–3015. *doi: 10.1016/j.cub.2022.05.039*

13. **Coughlan J.M.** 2022. One Fish, Two Fish, Red Fish, Dead Fish: Detecting the Genomic Footprint of Ecological Incompatibilities in threespine Sticklebacks. *PLoS Biology* 20(1): e3001504. Primer for *Thompson et al.*

12. **Coughlan J.M.** †; Dagilis, A.J. †; A. Serrato-Capuchina, H. Elias*, D. Peede*, K. Isbell*, D.M. Castillo, B.S. Cooper, D.R. Matute. 2022. Population structure and introgression among recently differentiated *Drosophila melanogaster* populations. *MBE* 39: msac223. *doi:* 10.1093/molbev/msac223

11. **Coughlan J.M.**; Wilson Brown, M*.; Willis, J.H. 2021. The genetic architecture and evolution of life history divergence among perennials in the *M. guttatus* species complex**.** *Proceedings B* 288: 20210077. *doi*: 10.1098/rspb.2021.0077

10. **Coughlan, J.M.** & D.R. Matute. 2020. The importance of intrinsic barriers throughout the speciation process. *Philosophical Transactions of the Royal Society B* 375: 20190533. *doi:10*.1098/rstb.2019.0533

9. **Coughlan J.M.**; Wilson Brown, M*.; Willis, J.H. 2020. Patterns of hybrid seed inviability in perennials of the *Mimulus guttatus* sp. complex reveal a potential role of parental conflict in reproductive isolation. *Current Biology* 30(1):83-93. ***Faculty of 1000 Prime Selection.***

8. Peede, D.* & **Coughlan, J.M.** 2019. Digest: Biotic interactions shape local adaptation in teosinte populations. *Evolution 73* (11): 2343-2344. **Digest for *O'Brien et al. 2019. doi*: 10.1111/evo.13857

7. Lowry, D.B., Sobel J.M., Angert A.L., Ashman T., Baker R.L., Blackman, B.K., Brandvain, Y., Byers K. J. R. P., Cooley A.M., **Coughlan J.M.**, Dudash, M.R., Fenster, C.B., Ferris, K. G., Fishman, L., Friedman, J., Grossenbacher, D.L., Holeski, L.M., Ivey, C.T., Kay, K.M., Koelling, V.A., Kooyers, N.J., Murren,

C.J., Muir, C.D., Nelson, T.C, Peterson, M.L., Puzey, J.R., Rotter, M.C., Seemann, J.R., Sexton, J.P., Sheth, S.N., Streisfeld, M.A., Sweigart, A.L., Twyford, A.D., Vallejo-Marín, M, Willis, J.H., Wu, C.A., Yuan, Y-W. The case for the continued use of the genus name *Mimulus* for all monkeyflowers. 2019. Taxon 68 (4):617-623.

6. **Coughlan J.M.** & Matute, D.R. 2018. Speciation: On the Scent of Mate Discrimination Genes. *Current Biology 28 (24)* R1389-R1391. *doi*: *10.1016/j.cub.2018.10.055.* **Dispatch for *Combs* et al. *2018.*

5. **Coughlan J.M. &** Willis, J.H. 2019. Dissecting the role of a large chromosomal inversion in life history divergence throughout the *Mimulus guttatus* species complex. *Molecular Ecology* 28: 1343-1357. *doi*: *10.1111/mec.14804*

4. **Coughlan, J.M**.; Han, S.*, S. Stefanovic; and T.A. Dickinson. 2017. Widespread generalist clones are associated with range and niche expansion in allopolyploids of Pacific Northwest Hawthorns (*Crataegus* L.). *Molecular Ecology* 26:5484-5499. *doi: 10.1111/mec.14331*

3. **Coughlan, J.M**., A. Saha*; and K. Donohue. 2016. Effects of pre- and post-dispersal temperature on primary and secondary dormancy dynamics in contrasting genotypes of *Arabidopsis thaliana* (Brassicaceae). *Plant Species Biology. doi*: 10.1111/1442-1984.12145

2. Auge, G.; Blair L.; Burghardt, L; **Coughlan J.;** Edwards, B.; Leverett L.; and Donohue, K. 2015. Secondary dormancy induction depends on primary dormancy status in Arabidopsis thaliana. *Seed Science Research*. *doi: 10.1017/S0960258514000440*

1. **Coughlan, J.M**.; S. Stefanovic; and T.A. Dickinson. 2014. Relative resource allocation to dispersal and competition demonstrates the putative role of hybridity in geographic parthenogenesis. *Journal of Biogeography* 41 (8):1603-1613. *doi: 10.1111/jbi.12316*

***Denotes undergraduate mentored**
****Denotes a Coughlan lab graduate student lead paper**
**† Denotes equal contribution**

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## Plenaries and Keynote Lectures

2022: Dobzhansky Prize Plenary (Evolution, Cleveland)
2020: University of Wisconsin, Madison, *James Crow Early Career Seminar Series*

## Invited Symposium Talks

2024. Population and Evolutionary Quantitative Genetics (PEQG) 'Rising Star in Evolutionary Genetics' Symposium. *Invited Speaker*
2023. Canadian Society for Ecology & Evolution, Manitoba, Canada. *Invited symposium speaker*
2022. AGA Presidential Symposium, *Bainbridge Island, Washington. Invited symposium speaker*
2021. Botany, *Virtual*, July 19-23st. *Invited symposium speaker*
2017. SMBE, *Austin, Texas*. *Invited symposium speaker*
2017. Evolution, *Portland, Oregon*. *Invited symposium speaker*

## Departmental and Institute Seminars

2024: Lehigh University, *Biology Departmental Seminar*
2024: University of Connecticut, *EEB Departmental Seminar*
2024: University of Kansas, *Biology Departmental Seminar*
2023: Columbia University, *Evolutionary Genetics Seminar*
2023: University of Oregon, *Evolution and Ecology Seminar.*
2023: University of Bath, *Milner Centre for Evolution seminar speaker. Postponed.*
2023: University of Montana, *Biology Departmental Seminar*
2023: Yale University, *Yale Institute for Biospheric Studies (YIBS) Seminar*
2023: Yale University, *Plant Molecular Biology Seminar*
2023: University of Minnesota, *EEB Departmental Seminar*
2022: University of Rochester, *EEB Departmental Seminar*
2022: University of Toronto, *EEB Departmental Seminar*
2022: Michigan State University, *EEB Departmental Seminar* *Graduate Student Invited Seminar
2022: Rocky Mountain Biological Laboratory, *EEB Seminar*
2022: University of California, Santa Barbara, *EEB Departmental Seminar*
2022: Queens University (Canada), *Biology Departmental Seminar*
2021: University of Georgia, *Genetics Departmental Seminar*
2021: Princeton University, *EEB Departmental Seminar*
2021: Institute of Science and Technology, Austria (IST), *EvoLunch seminar series*
2021 Yale University, EEB Departmental Seminar
2021: Rose-Hulman Institute of Technology, *Biology Departmental Seminar*
2021: Oklahoma State University, *Plant Biology Departmental Seminar*
2021: University of California, Berkeley, *Speciation Discussion Seminar*
2020: University of Montana, *CHALK series*
2020: Stanford University, *Schumer-Petrov joint lab meeting*
2020: University of California, Riverside, *EEB Departmental Seminar*

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2020: University of Pennsylvania, *Biology Departmental Seminar*
2019: University of North Carolina, *Lunch Bunch Seminar*
2017: University of North Carolina, *BioPop Seminar*
2017: University of Virginia, *EEBIO Seminar*
2013, 2017: Duke University, *Population Biology Seminar*

## Teaching Experience

2024: Instructor of Record: *The Modern Synthesis* (Grad seminar; enrollment: 10), *Yale University*
2023: Instructor of Record: Genomics of Adaptation and Speciation (Grad seminar; enrollment: 7 students), *Yale University*
2022,2023: Instructor of Record: Evolutionary Genetics (enrollment: 10 (2022), 13(2023)), *Yale University*
2020: Guest Lecture: Population Genetics; Quantitative Genetics and the Genomics of Adaptation, *University of North Carolina*.
2020: Guest Lecture: Fundamentals of Ecology; The Genomics of Adaptation, *University of North Carolina*.
2018: Guest Lecture: Adaptation in the Anthropocene; Human evolution in response to domestication. *Duke University*
2018: Instructor of Record: The Genetics of Evolution and Adaptation in Human Populations (enrollment 15 students). *Duke University*
2017: Guest lectures: Methods in Computational Biology & Genomics; Data Visualization in the Age of Genomics. *Duke University*
2014, 2016-2018: Teaching assistant: Evolution and Genetics, *Duke University*
2010, 2011, 2012: Teaching assistant: Adaptations and Biodiversity, *University of Toronto*
2012: Teaching assistant: Genomes to Ecosystems, *University of Toronto*
2011: Guest Lecture: Evolution for non-scientists; Evolutionary consequences of domestication. *University of Toronto*
2011: Teaching assistant: Evolution for non-scientists, *University of Toronto*
2010: Academic assistant: Population Genetics, *Trent University*

## Outreach

2024: Inspecting the Tree of Life: Function in Floral Diversity, Branford Public Library program
2023: The promises and pitfalls of modern genomics: lessons from complex traits in humans, Saybrook Fellows talk
2023: Invite a Scientist: A day in the life of plants! Peele County public schools, Ontario
2023: Yale Institute for Biospheric Studies SURES Summer Program Lecture: How do we find genes that contribute to complex traits, and how do we interpret these findings for complex traits in humans?

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2023: Yale fSTS public lecture: How do we find genes that contribute to complex traits, and how do we interpret these findings for complex traits in humans?
2023: Invite a Scientist: The complexity of genetics: How do we find genes that contribute to complex traits, and how do we interpret these findings for complex traits in humans? St. Michael's College, Ontario.
2022: Invite a Scientist: A day in the life of plants! Peele County public schools, Ontario
2021: Invite a Scientist: 'Form, function, and the repeatability of Evolution' Green Hope High School, Cary NC.
2020: Invite a Scientist: 'Where can science take you?' Dalhousie Youth Support Services for youth in conflict with the law.
2020: Invite a Scientist: 'How do we find important genes?' North Carolina School of Science and Math.
2020: BugFest- North Carolina Museum of Natural Sciences, Panelist
2018-2020: Skype a Scientist/classroom skyping
2015-17: Invite a Scientist: 'Plants and their pollinators' outreach, Wake Young Woman's Leadership Academy, *Raleigh, NC,* Invited Contributor
2014: "DNA Day" Kid's Science Festival, University of North Carolina, Chapel Hill, *Chapel Hill NC*, Contributor
2014: Plant Defense Science Outreach, Lowe's Grove Middle School, *Durham NC*, Contributor
2014: Animal Vision Science Outreach, Lowe's Grove Middle School, *Durham NC*, Contributor
2013: "I didn't know plants could do that!" Duke Centre for Science Outreach, Contributor
2007: Peterborough Regional Science Fair, Judge and Coordinator
2007, 2008: Peterborough "Walkabout" Earth Day Event, Coordinator

## Service

*To the University:*
2023-'24: Committee for Safe and Inclusive Field Work, *Yale University*
2023-'24: EEB Graduate Student Admissions Committee, *Yale University*
2023-'24: Rhodes, Mitchell, and Marshall Scholarship Committee, *Yale University*
2023-'24: EEB Seminar Organizer, *Yale University*
2022-'24: Saybrook Fellowship Committee, *Yale University*
2022-24: Freshman Advisor (4 students), *Yale University*
2023: Yale Institute for Biospheric Studies (YIBS) 4th year fellowship, reviewer, *Yale University*
2019: Future of Speciation Research Panelist, *University of North Carolina*
2017: BLERG: Peer review and development group, co-chair, *Duke University*
2016: Organizer of "Science Fails" workshop, *Duke University*
2015-2018: EvGen Discussion Group, Chair, *Duke University*
2015-2016: Faculty Meeting Student Representative, *Duke University*

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2013-2014: Population Biology Seminar Series Co-chair, *Duke University*
2010: University of Toronto EEB Research Colloquium, Coordinator, *UofT*

*To the Profession:*
2023: Penn State University Academic Careers in Plant Sciences Panel, *panelist*
2023: Mimulus Meeting, *co-organizer*
2023: Speciation Network Workshop, *invited participant*
2023: GRC: Speciation, *Power-Hour co-host*
2023: GRS: Speciation, *co-organizer*
2022: Population & Evolutionary Quantitative Genetics Conference, *poster judge*
2022: ENVISION Women in STEM Research Competition, *judge*
2022: Evolution's Rainbow: A Queer Science Social Event, *Organizer*
2022, 2023: Evolution LGBTQIA+ networking lunch, *Organizer*
2021, 2023: Virtual Evolution LGBTQIA+ Mixer, *Organizer*
2021: SACNAS Student Research Presentation, *Abstract Judge*
2020: EEB Match Mentoring Program, *Mentor*

*Ad Hoc Reviewer:*
2024: German Research Foundation, Emmy Noether Program Reviewer
2023: NSERC External Reviewer
2022, 2023: NSF DEB *ad hoc* Reviewer
2022: NERC Fellowship Reviewer

**Professional Society Memberships:** Society for the Study of Evolution; American Naturalists Society, Society for Molecular Biology and Evolution, Botanical Society of America, American Genetics Association.

***Reviewer for:*** *American Journal of Botany, American Naturalist, Annals of Botany, Annals of Botany Plants, Elife, Evolution, Evolution Letters, Genes, Genetics, G3, Heredity, Journal of Biogeography, Journal of Heredity, Molecular Biology and Evolution, Molecular Ecology, Nature, New Phytologist, Philosophical Transactions, PLoS Biology, PLoS Genetics, PLoS One, Proceedings of the Royal Society B*

# Advising

***Postdoctoral Researchers (Advisor)*** *– Hongfei Chen (2022-), Megan Frayer (PRFB: 2023-), Haley Branch (PRFB: 2023-), Henry Arenas-Castro (Hutchinson Fellow: 2023-)*

***Graduate Students (Advisor)*** *– Hagar Soliman (2022-), Pia Schwarz (2023-)*

***Graduate Students (Rotation Project)*** *– Claire Schraidt (2023)*

***Graduate Students (Committee Member)*** *– Claire Schraidt (Yale EEB, 2023-), Oluwatobi Oso (Yale EEB, 2023-), Julia Wood (Yale EEB, 2023-), Audrey Tjahjadi (Yale*

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*Anthropology, 2023-), Josh Randall (Yale EEB, 2022-), Julia Laterza Barbosa (Yale EEB, 2022)*

***Undergraduate Thesis (Advisor)*** *– Hanwen Zhang (2023-24), Cage Cochran (2023-24)*

***Undergraduate Research (Advisor)*** *–Lily Hyde (2024), Hanwen Zhang (2022-24), Quinn Evans (2022-24), Patricia Joseph (2022-24), Abigail Taylor (2023-2024), Gabriela Lebron (2023), Ashley Vanegas (2023), Hope Elias (UNC; 2019-2021), Maya Wilson Brown (Duke; 2015-2018), Madison Zamora (Duke; 2013-2015).*