

# CHRISTINA RIEHL

Assistant Professor  
Department of Ecology and Evolutionary Biology  
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## EDUCATION

2011      Ph.D.      PRINCETON UNIVERSITY, Princeton, NJ  
*Department of Ecology and Evolutionary Biology*

2005      B. A.      HARVARD UNIVERSITY, Cambridge, MA  
*Magna cum laude with highest honors in Biology*

## PROFESSIONAL APPOINTMENTS

Assistant Professor      Princeton University, Princeton, NJ  
(2015 – present)

Junior Fellow      Harvard Society of Fellows, Cambridge, MA  
(2012 – 2015)

Postdoctoral Research Fellow      Smithsonian Tropical Research Institute, Panama  
(2011 – 2012)

Lecturer      Princeton University, Princeton, NJ  
(2011 – 2012)

## GRANTS AND FELLOWSHIPS

2015      National Geographic Society – *Committee for Research and Exploration* (\$19,200)

2014      Putnam Expedition Grant – *Harvard University* (\$6,120)

2012      Milton Fund Research Grant – *Harvard University* (\$35,082)  
Putnam Expedition Grant – *Harvard University* (\$5,000)  
3-Year Postdoctoral Fellowship – *Harvard Society of Fellows* (\$200,000)

2011      1-Year Postdoctoral Fellowship – *Smithsonian Conservation Biology Institute*  
(\$45,000, declined)  
1-Year Postdoctoral Fellowship – *Smithsonian Tropical Research Institute* (\$45,000)

2008      Graduate Research Fellowship – *Princeton Latin American Studies* (\$7,500)  
Student Research Grant – *American Ornithologists' Union* (\$1,500)  
Frank M. Chapman Research Grant – *American Museum of Natural History* (\$1,500)

2007      Short-term Fellowship – *Smithsonian Tropical Research Institute* (\$3,000)  
Graduate Research Fellowship – *Princeton Latin American Studies* (\$3,000)

- 2006 Graduate Research Fellowship – *National Science Foundation* (\$122,500)
- 2004 Barry M. Goldwater Scholarship – *Goldwater Excellence in Education* (\$7,500)  
Harvard College Research Fellowship – *Harvard University* (\$4,000)

## HONORS AND AWARDS

- 2013 Young Professional Award – *Cooper Ornithological Society*
- 2011 Excellence in Teaching Award – *Princeton University* (university-wide)
- 2002-2003 Dean’s List (Top 10% of Harvard University Class of 2005) – *Harvard University*

## PUBLICATIONS

20. Taborsky, M., Frommen, J., and **Riehl, C.** Reciprocal interactions and the importance of trading in animal interactions. *Philosophical Transactions of the Royal Society of London, Series B*, in review.
19. **Riehl, C.**, and Frederickson, M. E. Cheating and punishment in cooperative animal societies. *Philosophical Transactions of the Royal Society of London, Series B*, in review.
18. **Riehl, C.**, and Strong, M. J. 2015. Social living without kin discrimination: experimental evidence from a cooperatively breeding bird. *Behavioral Ecology and Sociobiology* (doi:10.1007/s00265-015-1942-9)
17. **Riehl, C.**, Strong, M. J., and Edwards, S. V. 2015. Inferential reasoning and egg rejection in a cooperatively breeding cuckoo. *Animal Cognition* 18: 75-82.
16. **Riehl, C.** 2014. Cuckoos of the world. *Wilson Journal of Ornithology* 126: 411-412.
15. **Riehl, C.** 2013. Evolutionary routes to non-kin cooperative breeding in birds. *Proceedings of the Royal Society of London, Series B* 280: 20132245.  
  - A *Proceedings B* “**Most Viewed**” article during 2013
  - Highlighted **Editor’s Choice** in *Proceedings B*
14. **Riehl, C.** 2013. The Harris’s Hawk. *Journal of Raptor Research* 47: 333-334.
13. **Riehl, C.** 2012. Parental care and reproductive skew in a communally breeding cuckoo: hard-working males do not sire more young. *Animal Behaviour* 84: 707-714.
12. **Riehl, C.** 2011. Living with strangers: direct benefits favor non-kin cooperation in a communally breeding bird. *Proceedings of the Royal Society of London, Series B* 278:1728-1735  
  - **Science Editor’s Choice** (*Science* 330:1289)
  - Rated “Must Read” by **Faculty of 1000** (<http://f1000.com/13357090>)
11. **Riehl, C.** 2011. Paternal investment and the “sexually selected” hypothesis for the evolution of eggshell coloration: revisiting the assumptions. *The Auk* 128: 175-179.
10. **Riehl, C.** 2010. A simple rule reduces conspecific brood parasitism in a communally breeding bird. *Current Biology* 20 (20): 1830-1833.  
  - Rated “Must Read” by **Faculty of 1000** (<http://f1000.com/6381960>)
  - **Highlighted in *Evolutionary Analysis 5th Ed.*** (Freeman & Herron, 2013)

9. **Riehl, C.** 2010. Egg ejection risk and hatching asynchrony predict egg mass in a communally breeding cuckoo, the Greater Ani. *Behavioral Ecology* 21: 676-683.
8. **Riehl, C.,** and S. M. Bogdanowicz. 2009. Isolation and characterization of microsatellite markers from the greater ani *Crotophaga major* (Aves: Cuculidae). *Molecular Ecology Resources* [Internet] Available from: <http://tomato.biol.trinity.edu/manuscripts/9-6/mer-09-0270.pdf>.
7. **Riehl, C.,** and L. Jara. 2009. Natural history and reproductive biology of the communally breeding Greater Ani (*Crotophaga major*) in Gatún Lake, Panama. *The Wilson Journal of Ornithology* 121: 679-687.
6. **Riehl, C.,** and G. S. Adelson. 2008. Seasonal insectivory by Black-headed Trogons, a tropical dry forest frugivore. *Journal of Field Ornithology* 79: 371-380.
5. **Riehl, C.** 2008. Communal calling and prospecting by Black-headed Trogons (*Trogon melanocephalus*). *The Wilson Journal of Ornithology* 120:248–255.
4. **Riehl, C.** 2007. Evidence for cooperative breeding by White-bellied Go-Away Birds (*Corythaixoides leucogaster*). *African Journal of Ecology* 46:421-423.
3. **Riehl, C.** 2006. Widespread cannibalism by fledglings in a colony of Black-crowned Night-Herons. *The Wilson Bulletin* 118: 101-104.
2. **Riehl, C.** 2002. Red-shouldered Hawk preys on Pied-billed Grebe. *Journal of Field Ornithology* 73: 410-411.
1. **Riehl, C.** 2001. Black-crowned Night-Heron fishes with bait. *Waterbirds* 24: 285-286.

## TEACHING EXPERIENCE

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| 2015       | Lecturer, <i>Behavioral Ecology</i> , Dept. of Ecology and Evolutionary Biology, Princeton University   |
| 2014, 2015 | Lecturer, <i>Evolutionary Ecology of Tropical Birds</i> , NSF Integrative Graduate Education and Research Traineeship (IGERT) Program   |
| 2011       | Lecturer, <i>Introduction to Population and Community Ecology</i> , Dept. of Ecology and Evolutionary Biology, Princeton University<br>Lecturer, <i>Junior Tutorial</i> , Dept. of Ecology and Evolutionary Biology, Princeton University<br>Laboratory Instructor, <i>Comparative Anatomy and Physiology</i> , Dept. of Ecology and Evolutionary Biology, Princeton University |
| 2010       | Teaching Assistant, <i>Evolutionary Biology</i> , Dept. of Ecology and Evolutionary Biology, Princeton University   |
| 2007-08    | Writing Instructor, <i>The Writing Program</i> , Princeton University   |
| 2006       | Teaching Assistant, <i>Behavioral Ecology</i> , Dept. of Ecology and Evolutionary Biology, Princeton University   |
| 2005       | Laboratory Instructor, <i>The Biology of Organisms</i> , Dept. of Ecology and Evolutionary Biology, Princeton University  |

## STUDENTS AND INTERNS

- 2015 Haley Gordon (Undergraduate student, Princeton University)  
*Conducted senior thesis research on caching behavior of agoutis in Panama*
- 2015 Sarah Porter (Undergraduate student, Princeton University)  
*Conducted senior thesis research on foraging behavior of Crested Guans in Panama*
- 2015 Amanda Savagian (Intern)  
*Won STRI Short-Term Fellowship to study neighbor-stranger discrimination in Greater Ani groups*
- 2015 Chiti Arvind (Undergraduate student, Mount Carmel College, Bangalore, India)  
*Won Khorana Fellowship to assist in study of embryonic development in Greater Anis*
- 2014-15 Cynthia Ursino (Ph.D. student, University of Buenos Aires, Argentina)  
*Conducted genetic analyses in my lab on parentage and mating patterns in South American brood parasitic cowbirds and their hosts*
- 2013-14 Meghan Strong (Master's student, University of California Northridge)  
*Conducted field experiments to determine whether cooperatively breeding female anis track their own eggs in a shared nest*
- 2013 Richard Simpson (Ph.D. student, Arizona State University)  
*Won STRI Short-Term Fellowship to study visual perception in Red-throated Ant-Tanagers; co-advised by C. Riehl and STRI Staff Scientist John Christy*
- 2010 Laura Jara Reyes (Undergraduate student, Universidad de los Andes, Colombia)  
*Conducted research in my lab on distribution of fruiting trees on Barro Colorado Island, Panama, for undergraduate honors thesis*

## CONFERENCE PRESENTATIONS

- 2014 – Infanticide promotes reproductive synchrony in a communally breeding bird. Animal Behaviour Society, Princeton, NJ.
- 2014 – Why cooperate with unrelated individuals? International workshop funded by Conférence Universitaire de Suisse Occidentale, Arolla, Switzerland. (**Keynote address**)
- 2014 – Cooperation among non-kin: what prevents cheating? European Conference on Behavioural Biology, Prague, Czech Republic (**Symposium co-organizer with Michael Taborsky**)
- 2013 – Sneaky reproductive strategies in a “cooperative” bird. American Ornithologists’ Union and Cooper Ornithological Society, Chicago, IL. (**Young Professional Award**)
- 2013 – Cheaters and collaborators: the evolution of conspecific brood parasitism in a cooperatively breeding bird. Wilson Ornithological Society, Williamsburg, VA.
- 2012 – Paternal care and reproductive skew in a communally breeding cuckoo. Animal Behaviour Society, Albuquerque, NM.
- 2010 – Greater Anis can discriminate between predatory Yellow-headed Caracaras and similar, non-predatory Snail Kites. Association for the Study of Animal Behaviour, London, England.

- 2010 – Cooperation and parasitism in a communally breeding bird, the Greater Ani. Animal Behaviour Society, Williamsburg, VA.
- 2010 – Alternative reproductive strategies: joint nesting and social monogamy. American Ornithologists' Union and Cooper Ornithological Society. San Diego, CA.
- 2009 – Unusual variation in egg size in the Greater Ani, a communally breeding cuckoo with extreme reproductive competition. Wilson Ornithological Society and the Association of Field Ornithologists. Pittsburgh, PA.

## INVITED LECTURES

- 2015           McMaster University, Canada: Biology Department Seminar  
 Ferris State University, MI: Biology Department Seminar  
 Arizona State University, AZ: Evolution of Social Complexity Seminar Series
- 2014           University of New Hampshire, NH: Biology Department Seminar  
 Stonehill College, MA: Biology Department Seminar  
 Dartmouth College, NH: Neukom Institute for Computational Science  
 Princeton University, NJ: EEB Department Faculty Candidate Search  
 University of Texas at Austin, TX: Department of Integrative Biology Seminar  
 University of Pennsylvania, PA: Evolution Cluster Faculty Candidate Search
- 2013           University of Pennsylvania, PA: Behavioral Ecology Seminar  
 Boston University, MA: Animal Behavior Seminar  
 University of New Hampshire, NH: Behavioral Ecology Group Seminar
- 2012           Smithsonian Tropical Research Institute, Panama: Tupper Seminar  
 Tulane University, LA: Department of Ecology and Evolutionary Biology Seminar
- 2010           Harvard University, MA: Program in Evolutionary Dynamics Seminar  
 Lake Forest College, IL: Biology Department Seminar  
 City University of New York, NY: Animal Behavior and Conservation Seminar

## SERVICE IN THE SCIENTIFIC COMMUNITY:

**Guest Editor**, theme issue on the evolution of cooperation between non-kin, *Phil Trans Roy Soc B*

**Editorial Board Member** for *Frontiers in Social Evolution*

**Associate Editor** for *The Auk: Ornithological Advances*

**Editorial Staff** for *The Journal of Field Ornithology*

**Reviewer:** *American Naturalist; Animal Behaviour; Animal Cognition; Auk: Ornithological Advances; Behavioral Ecology; Behavioral Ecology and Sociobiology; Biology Letters; Condor: Ornithological Applications; Current Biology; Ibis; Journal of Avian Biology; Journal of Experimental Biology; The Journal of Field Ornithology; Journal of Louisiana Ornithology; Journal of Zoology; Nature Scientific Reports; Naturwissenschaften; Philosophical Transactions of the Royal Society of London, Series B; Proceedings of the Royal Society of London, Series B; Waterbirds; Wilson Journal of Ornithology*

**Grant Reviewer:** National Science Foundation, National Geographic Society, European Research Council, Israel Science Foundation, Smithsonian Tropical Research Institute, Animal Behavior Society

**Book Reviewer:** Yale University Press, Harvard University Press, Louisiana State University Press

## **POPULAR & SCIENTIFIC PRESS COVERAGE:**

August, 2013: *Evolutionary Analysis*, Freeman & Herron, 5<sup>th</sup> Ed (Textbook).

May, 2013: *Proceedings of the National Academy of Sciences*. Inner Workings: Studying an elusive cuckoo.

<http://www.pnas.org/content/110/22/8755.full>

January, 2013: *Harvard Magazine*. Survival of the cooperative.

<http://harvardmagazine.com/2013/01/survival-of-the-cooperative>

April, 2012: *Smithsonian Tropical Research Institute*. Meet our scientists (Webcast).

December, 2010: *Science*. Editor's Choice: Good for you, good for me too.

<http://www.sciencemag.org/content/330/6009/1289.3.full?sid=e7a4feb8-c03a-4b92-957f-b577587257a0>

November, 2010: *Current Biology*. Dispatch: Clever defense against cheats.

[http://www.cell.com/current-biology/abstract/S0960-9822\(10\)01213-3](http://www.cell.com/current-biology/abstract/S0960-9822(10)01213-3)