

Lisa O'Bryan, Ph.D.

CONTACT INFORMATION

Rice University

Department of Electrical and Computer Engineering

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EDUCATION

2008 - 2015 **Ph.D., Ecology, Evolution and Behavior**
University of Minnesota, Twin Cities, MN

Advisor: Dr. Michael Wilson

2004 - 2008 **B.S., Zoology**
Texas A&M University, College Station, TX

RESEARCH APPOINTMENTS

2023-
Present **Assistant Research Professor**
Rice University
Department of Electrical and Computer Engineering
Houston, TX

2018-2023 **Rice Academy Junior Fellow**
Rice University
Depts. of Electrical and Computer Engineering; Psychological Sciences
Houston, TX

Supervisors: Drs. Santiago Segarra, Margaret Beier, Ashutosh Sabharwal

2015-2017 **James S. McDonnell Postdoctoral Fellow in Studying Complex Systems**
New Jersey Institute of Technology
Department of Biological Sciences
Newark, NJ

Supervisor: Dr. Simon Garnier

MANUSCRIPTS IN PREPARATION

- 14) **O'Bryan LR**, King AJ, Cowlshaw G, Garnier S. Testing the role of contact calling behavior in facilitating the collective departure decisions of wild baboons. *Manuscript in preparation*
- 13) Wisniewska M, Dykstra N, **O'Bryan LR**, Cowlshaw G, King AJ, Garnier S, Russell G. Modeling physical and social impacts on individual movement in group-living species. *Manuscript in preparation*

MANUSCRIPTS UNDER REVIEW

- 12) Sueur C, Bousquet C, King AJ, **O'Bryan LR**. (2023) Social and ecological complexity as a driver for communication in social vertebrate collective decision-making. *Manuscript under review*
- 11) **O'Bryan LR**, Oxendahl T, Garnier, S, Segarra S, Wettergreen W, Sabharwal A, Beier ME. (2023) Idea quality, influence, and the emergence of collective intelligence in teams. *Manuscript under review*

PEER-REVIEWED PUBLICATIONS

- 10) Papadopoulou I M, Fürtbauer I, **O'Bryan LR**, Garnier S, Georgopoulou D, Bracken AM, Christensen C, King AJ. (2023) Dynamics of collective motion across time and species. *Philosophical Transactions of the Royal Society B*, **378**(1874) [link](#)
- 9) **O'Bryan LR**, Segarra S, Paoletti J, Zajac, S, Beier M, Sabharwal A, Wettergreen M, Salas E. (2022) Conversational turn-taking as a stochastic process on networks. *56th Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, USA, pp. 1243-1247 [link](#)
- 8) **O'Bryan LR**, Oxendahl T, Chen X, McDuff D, Segarra S, Wettergreen M, Beier ME, Sabharwal A. (2022) Objective communication patterns associated with team member effectiveness in real-world virtual teams. *Human Factors*, **0**(0) [link](#)
- 7) **O'Bryan LR**, Schapiro S, Lambeth S, Wilson ML (2021) Playbacks of food-associated calls attract chimpanzees to known food sources in a captive setting. *Primates*, **62**, 905-918. [PDF](#)
- 6) Sankey D, **O'Bryan LR**, Garnier S, Cowlshaw G, Hopkins P, Holton M, Fürtbauer I, King AJ (2021) Consensus of travel direction is achieved by simple copying, not voting, in free-ranging goats. *Royal Society Open Science*, **8**(2), 201128 [link](#)
- 5) **O'Bryan LR**, Lambeth SP, Shapiro SJ, Wilson ML (2020) Unpacking chimpanzee (*Pan troglodytes*) patch use: Do individuals respond to food patches as predicted by the marginal value theorem? *American Journal of Primatology*, **82**(12), e23208 [link](#)
- 4) **O'Bryan LR**, Beier, M, Salas, E (2020) How approaches to animal swarm intelligence can improve the study of collective intelligence in human teams. *Journal of Intelligence*, **8**(1), 9 [link](#)
- 3) **O'Bryan LR**, Abaid N, Nakayama S, Dey T, King AJ, Cowlshaw G, Rubenstein D, Garnier S (2019) Contact calls facilitate group contraction in free-ranging goats (*Capra aegagrus hircus*). *Frontiers in Ecology and Evolution*, **7**, 73 [link](#)
- 2) Ward JL, Love EK, Velez A, Buerkle NP, **O'Bryan LR**, Bee MA (2013) Multitasking males and multiplicative females: dynamic signalling and receiver preferences in Cope's grey treefrog. *Animal Behaviour*, **86**, 231-243 [link](#)
- 1) *Bee MA, Cook JM, Love EK, **O'Bryan LR**, Pettitt BA, Schrode K, Vélez A (2010) Assessing multiple levels of acoustic signal variation in boreal chorus frogs (*Pseudacris maculata*). *Ethology*, **116**, 564-576 [link](#)

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GRANTS AND FELLOWSHIPS (Total = \$1,240,420)

2022-2025	U.S. Army Research Institute for the Behavioral and Social Sciences, Co-PI, “GRACIE: Graph-based, Actionable, and Interpretable Model for Team Communication”, \$570,000
2022	Travel Award , Weaving the Future of Animal Behavior Program, \$1,620 for travel to 59 th Animal Behavior Society Conference in San Jose, Costa Rica
2020 - 2022	Microsoft Productivity Research Grant , Co-PI, “TeamDNA: Productivity-enhancing Tools for Diverse and Distributed Teams”, \$125,000
2018 - 2020	Rice Academy Postdoctoral Fellowship , Rice University, \$160,300 for salary and research over 2 years
2016 - 2017	NSF I-Corps Site Mini-Grant , Co-PI, “Development of Next-gen Activity Tracker for Monitoring of Animal Movement”, \$2,500
2016 - 2017	NJIT Faculty Seed Grant , Co-PI, “Development and Testing of Next-generation Activity Trackers for Animal Behavior and Conservation Research”, \$7,500
2015 - 2017	Postdoctoral Fellowship in Studying Complex Systems , James S. McDonnell Foundation, \$200,000 for salary and research over 2-3 years at institution of choice
2014	Travel Award , University of Minnesota, \$1000
2013 - 2014	Doctoral Dissertation Fellowship , University of Minnesota, \$22,500 stipend to support late-stage dissertation research
2012 - 2014	NSF Dissertation Improvement Grant , \$15,000
2010 - 2013	NSF Graduate Research Fellowship , \$121,500 for three years of tuition and stipend to support dissertation research
2013	Young Explorer Grant , National Geographic Society, \$5,000
2011	Student Research Grant , American Society of Primatologists, \$1,000
2010	Student Research Grant , Animal Behavior Society, \$500
2010	Dayton-Wilkie Natural History Fund , Bell Museum of Natural History, University of Minnesota, \$1,000
2009	International Thesis Research Grant , University of Minnesota, \$5,000
2009	Rothman Fund , Bell Museum of Natural History, University of Minnesota \$1,000

FIELDWORK / EXTERNAL RESEARCH EXPERIENCE

2015, 2016 (7 months)	Postdoctoral Research , <i>Tsaobis Baboon Project, Tsaobis Nature Park, Namibia</i> <ul style="list-style-type: none">Used dataloggers to collect data on collective behaviors of domesticated goats and sheep and wild baboons
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- 2009, 2012, 2013
(14 months) **Dissertation Research**, *Gombe Stream Research Centre, Gombe National Park, Tanzania*
- Collected observational and acoustic data on the foraging, social and food-associated calling behavior of wild chimpanzees
- 2010, 2011
(10 months) **Dissertation Research**, *UT MD Anderson Cancer Center, Michael E. Keeling Center for Comparative Medicine and Research, Bastrop, TX*
- Conducted playback and foraging experiments with captive chimpanzees
- 2009
(1.5 months) **Collaborative Research**, *Carlos Avery Wildlife Management Area and Carver Park Reserve, Minnesota*
- Field study of acoustic variation in chorus frog advertisement calls

TEACHING APPOINTMENTS

- Spring 2018 Princeton University, Adjunct Lecturer, *Comparative Physiology*
- Spring 2017 Barnard College, Adjunct Lecturer, *Evolutionary Animal Behavior*
- Fall 2016 New Jersey Institute of Technology, Adjunct Lecturer, *Animal Behavior Lab*
- Spring 2015 University of Minnesota, Teaching Assistant, *General Biology Lab*
- Fall 2014 University of Minnesota, Teaching Assistant, *Primate Ecology and Social Behavior*
- Fall 2012 University of Minnesota, Teaching Assistant, *Animal Behavior*
- Fall 2010 University of Minnesota, Teaching Assistant, *Writing Enriched Curriculum Project*

INVITED SEMINARS

- O'Bryan, LR** (2023) The critical role of communication in the emergence of collective outcomes. *Department of Systems Science and Industrial Engineering*, Binghamton University, Binghamton, New York
- O'Bryan, LR** (2023) The role of vocal communication in the emergence of collective behavior. *School of Complex Adaptive Systems and the Biodesign Center for Biocomputing, Security and Society*, Arizona State University, Tempe, Arizona
- O'Bryan, LR** (2023) The role of communication in the emergence of collective outcomes. *Department of Communication*, University of California, Los Angeles, California
- O'Bryan, LR** (2022) Communication and the coordination of collective behavior in non-human and human social groups. *Center for Behavior, Evolution and Culture*, University of California, Los Angeles, California
- O'Bryan, LR** (2021) Lessons from the study of collective behavior in human and non-human social groups. Satellite Symposium hosted by the *Centre for the Advanced Study of Collective Behaviour*. Konstanz, Germany as part of the *7th International Conference on Computational Social Science* [Remote Talk]

- O'Bryan, LR** (2021) The role of communication in the emergence of collective behavior. *Centre for the Advanced Study of Collective Behaviour*, University of Konstanz, Konstanz, Germany [Remote Talk]
- O'Bryan, LR** (2020) Approaching studies of collective intelligence in human teams from the perspective of animal swarm intelligence. *ACM Collective Intelligence Conference 2020* [Remote Talk]
- O'Bryan, LR** (2018) The interplay between communication and collective behavior in social groups. *The Center for Brain, Behavior and Evolution*, University of Texas, Austin, Texas
- O'Bryan, LR** (2018) Communication and collective behavior. *Course on Animal Behavior*, Texas A&M University, College Station, Texas
- O'Bryan, LR** (2018) What animals can teach us about the evolution of communication systems. *Workshop on Collective Behavior, Social Media, and Systemic Risk (CBSMSR)*, Princeton University, Princeton, New Jersey

SELECTED CONFERENCE PRESENTATIONS

- O'Bryan LR, Segarra S, Paoletti J, Zajac, S, Beier M, Sabharwal A, Wettergreen M, Salas E.** (2022) Conversational turn-taking as a stochastic process on networks. Oral and Poster presentation at the *56th Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, California
- O'Bryan LR, King AJ, Cowlshaw G, Garnier S** (2022) Using dataloggers to test the function of vocal activity during collective departure in wild baboons. Oral presentation at the *59th Annual Conference of the Animal Behavior Society*, San Jose, Costa Rica
- O'Bryan LR, Oxendahl T, Beier M, Sabharwal A** (2021) Communication and the emergence of collective intelligence in virtual teams. Remote oral presentation at the *Association for Psychological Science Virtual Convention*
- O'Bryan LR, Cao J, Torres WJ, Sabharwal A, Beier ME** (2019) Objective measurement of individual-level communication behaviors underlying interactions within diverse teams. Poster presentation at the *31st Association for Psychological Science Annual Convention*. Washington D.C.
- O'Bryan LR, Munson B, Wilson M** (2018) Chimpanzee Food-associated Calls Display Low Referential Potential in a Wild Population. *175th Meeting of the Acoustical Society of America*, Minneapolis, MN
- O'Bryan LR** (2017) Vocal communication and behavioral coordination in free-ranging mammals. Oral presentation at the *6th International Bio-logging Science Symposium, Workshop on Communication and Movement in Animal Groups*. Konstanz, Germany
- O'Bryan LR, Abaid N, Nakayama S, Dey T, Rubenstein D, King AJ, Cowlshaw G, Garnier S** (2017) The role of contact calls in facilitating the reunion of separated group members. Poster presentation at the *6th International Bio-logging Science Symposium*. Konstanz, Germany

O'Bryan LR, King AJ, Cowlshaw G, Russell G, Dykstra N, Wisniewska M, Garnier S (2017) Uncovering the role vocalizations play in collective animal behavior. Poster presented at *Social Evolution and Genome Complexity Symposium*, Columbia University, NY

O'Bryan LR, Wilson ML, Schapiro SJ, Lambeth SP (2013) Social effects on chimpanzee foraging decisions: Implications for function of food-associated calls. Poster presented at *50th Annual Conference of the Animal Behavior Society*, Boulder, Colorado

O'Bryan LR, Wilson ML, Lambeth SP, Schapiro SJ (2011) Do food-associated calls affect the foraging decisions of social foragers? Poster presentation at *Social Decision-Making: Bridging Biology and Economics*, Monte Verita, Ascona, Switzerland

MENTORING AND SUPERVISION

2022 - Present **Graduate Student Mentor**, *Rice University, Department of Electrical and Computer Engineering*

- Mentoring 1 PhD student in ECE and 1 masters student in Data Science in the development of computational approaches to the study of communication dynamics as part of my Army Research Institute grant

2018 - Present **Graduate and Undergraduate Student Supervisor**, *Rice University, Department of Psychological Sciences*

- Mentored 1 PhD student in Psychology through integration into project development, research, and training activities (Resulting in 1 published co-authored manuscript and 1 under review)
- Mentored over 25 undergraduates and 1 high school student by engaging them in study design and subject-running activities

2015 - 2017 **Graduate and Undergraduate Student Supervisor**, *New Jersey Institute of Technology, Department of Biological Sciences*

- Mentored an Electrical Engineering masters student in improvement of circuitry and programming for our in-house dataloggers
- Mentored a PhD student in Biology through collaboration on field research in Namibia, support in grant writing and collaboration on data processing and analysis
- Mentored 9 undergraduates and 1 high school student in Biology and engaged them in my postdoctoral research through volunteer, work-study, directed research and class project opportunities

Summer 2016 **Field Team Supervisor**, *Zoological Society of London Tsaobis Baboon Project, Tsaobis Nature Park, Namibia*

- Co-supervised and trained a team of 6 international field assistants while conducting fieldwork at Tsaobis Nature Park in Namibia as part of my postdoctoral research with NJIT

2011 - 2015 **Undergraduate Supervisor**, *Department of Ecology, Evolution and Behavior, University of Minnesota*

- Mentored 16 undergraduate students and engaged them in my dissertation research through volunteer, research assistantship and directed research opportunities

2009, 2012,
2013

Field Team Supervisor, Gombe National Park, Tanzania

- Supervised and trained 3 Tanzanian field assistants while conducting fieldwork at Gombe National Park for my dissertation research

OTHER SCIENTIFIC ACTIVITIES

June-Aug 2023

Program Committee Member, joint organization of the ACM Human Computation (HCOMP) and Collective Intelligence (CI) conferences, Delft, Netherlands

- Review and discuss submitted conference papers with program committee members

2022 - Present

Peer-Mentor and Participant, Weaving the Future of Animal Behavior

Participant in year-long NSF-funded professional development program (IOS-Animal Behavior #1833455) to support early career researchers in the field of Animal Behavior

2018 - Present

Invited Speaker, Rice University

- Machine Learning Lunch, *Electrical and Computer Engineering*
- Industrial-Organizational Brownbag, *Psychological Sciences*
- Cognitive Psychology Brownbag, *Psychological Sciences*
- Health Psychology Brownbag, *Psychological Sciences*

2016 - Present

Ad Hoc Reviewer *Scientific Reports, PLOS Computational Biology, Methods in Ecology and Evolution, Journal of Experimental Biology, Journal of Human Evolution, Journal of Applied Psychology, Journal of Comparative Psychology, Behaviour, BMC Ecology, Ethology, American Naturalist, Sports Science*

- Postdoctoral fellowship for Zukunftskolleg, University of Konstanz, Germany
- Book Proposal for Cambridge University Press
- Grant for the Human Frontier Science Program

2019

Departmental Conference Organizer, Department of Psychological Sciences, Rice University

- Co-organized and ran a “Research Spotlight” conference highlighting graduate student and postdoctoral research within the department

2017-2019

Team Leader. Co-led workshop groups focused on developing techniques for analyzing and modeling collective social behavior.

- **4th Collaborative Workshop on Modeling Collective Behavior, Pioneer Works, Brooklyn, NY**
- **Workshop on Collective Behavior and Emergent Phenomena in Biology, Mathematical Biological Sciences Institute, Ohio State**

- **Workshop on Data-driven Modeling of Collective Behavior and Emergent Phenomena in Biology**, *The Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC*

- 2016 **NSF I-Corps Site Mini-Grant Grantee**, *New Jersey Institute of Technology*
 - Participated in semester-long program at NJIT exploring the research and commercial potential of our in-house dataloggers.

- Select Events
2011-2015 **Invited Public Speaker**, *Bell Museum of Natural History, Minneapolis, MN*
 - Events: “Saturday with a Scientist” (All Ages), “Field Biology Day Camp” (Grades 4-6), “Working in a Museum” (Grades 5-6).

- 2009, 2013 -
2014 **Teaching SMART (Science, Math, and Research Technology) Volunteer**, Minneapolis, MN
 - Provided weekly supplemental science education to local primary and secondary schools in Minneapolis.

- 2013 **Blog Writer**, *National Geographic Explorer’s Journal*
 - Wrote blogs for National Geographic while conducting fieldwork for my dissertation research at Gombe National Park ([link](#))