

CURRICULUM VITAE
SARAH GUINDRE-PARKER

Department of Ecology, Evolution, and Environmental Biology — Columbia University
Ph.D. Candidate — slg2154@columbia.edu — +1-646-275-4804

EDUCATION

- Ph.D. Candidate** – Columbia University, New York City (USA) 2012-2017
Supervisor: Dr. Dustin Rubenstein (exp. April)
Dissertation: Costs & benefits of cooperative breeding in fluctuating environments in African starlings
- M.Sc.** – University of Windsor, Windsor (CAN) 2010-2012
Supervisor: Dr. Oliver Love
Thesis: Multiple achromatic plumage signals of male quality in the snow bunting (*Plectrophenax nivalis*)
- B.Sc.** – Simon Fraser University, Burnaby (CAN) 2006-2010
Supervisor: Dr. Elizabeth Elle
Honours Thesis: Among-population variation in the timing of selfing in *Collinsia parviflora*

APPOINTMENTS

- Visiting Scientist** – Ornithology Department, National Museums of Kenya, Nairobi (KE) 2013-present

PUBLICATIONS

8. Baldo S, DJ Mennill, **S Guindre-Parker**, H Gilchrist & OP Love. 2015. The oxidative cost of acoustic signals: examining steroid versus aerobic-activity hypotheses in a wild bird. *Ethology* 121:1081-1090.
7. Baldo S, DJ Mennill, **S Guindre-Parker**, H Gilchrist & OP Love. 2014. Snow buntings sing individually distinctive songs and show inter-annual variation in song structure. *Wilson Journal of Ornithology* 126: 333-338.
6. **Guindre-Parker S** & OP Love. 2014. Revisiting the condition-dependence of melanin-based plumage. *Journal of Avian Biology* 45: 29-33.
5. **Guindre-Parker S**, S Baldo, CA Macdonald, CM Harris, H Gilchrist & OP Love. 2013. The oxidative costs of territory quality and offspring provisioning. *Journal of Evolutionary Biology* 26:2558-2565 (Cover Article)
4. **Guindre-Parker S**, H Gilchrist, Baldo, S. & OP Love. 2013. Alula size signals male condition and predicts reproductive performance in an Arctic-breeding passerine. *Journal of Avian Biology* 44:209-215. (Editor's Choice)
3. **Guindre-Parker S**, H Gilchrist, S Baldo, S Doucet & OP Love. 2013. Multiple achromatic plumage ornaments signal to multiple receivers. *Behavioural Ecology* 24:672-682.
2. Bourgeon S, **S Guindre-Parker** & TD Williams. 2011. Effects of sibling competition on growth, oxidative stress and humoral immunity: a two-year brood size manipulation. *Physiological and Biochemical Zoology* 84: 429-437.
1. Elle E, S Gillespie, **S Guindre-Parker** & A Parachnowitsch. 2010. Variation in the timing of autonomous selfing among populations that differ in flower size, time to reproduction maturity and climate. *American Journal of Botany* 97: 1894-1902.

CURRICULUM VITAE

Sarah Guindre-Parker – Ph.D. Candidate, Columbia University

MANUSCRIPTS SUBMITTED

2. **Guindre-Parker S** & DR Rubenstein. Cooperative breeding reduces the oxidative costs of reproduction. *Functional Ecology*
1. **Guindre-Parker S** & DR Rubenstein. Multiple fitness benefits of alloparental care in fluctuating environments. *Proceeding of the Royal Society B*

MANUSCRIPTS IN PREPERATION (*† denotes supervisee manuscript*)

3. **Guindre-Parker S** & DR Rubenstein. Survival benefits of breeding cooperatively are shaped by fluctuating environmental conditions.
2. †Pikus AE, **S Guindre-Parker** & DR Rubenstein. Testosterone, social status and parental care behavior in a cooperatively breeding tropical passerine.
1. **Guindre-Parker S** & DR Rubenstein. Physiological constraints, costs, and carry-over effects of reproduction in a cooperatively breeding bird.

RECENT SCHOLARSHIPS AND FELLOWSHIPS

NSERC Postdoctoral Fellowship - <i>National Research Award</i>	\$90,000	2017-2019
Columbia University Dean's Fellowship - <i>Institutional Research Stipend</i>	\$340,000	2012-2017
NSERC Ph.D. Graduate Scholarship - <i>National Research Award</i>	\$63,000	2012-2015
Ontario Graduate Scholarship - <i>Provincial Research Award</i>	\$15,000	2011-2012
University of Windsor Tuition Scholarship - <i>Institutional Academic Award</i>	\$9,000	2010-2012
NSERC M.Sc. Graduate Scholarship - <i>National Research Award</i>	\$17,500	2010-2011
NSERC Undergraduate Research Award - <i>National Research Award</i>	\$5,625	2008
SFU Gordon Shrum Entrance Scholarship - <i>National Academic Award</i>	\$24,000	2006-2010

RESEARCH GRANTS

Sigma Xi Grant in Aid of Research – <i>Competitive Grant</i>	\$464	2016
NSF Doctoral Dissertation Improvement Grant – <i>Competitive Grant</i>	\$20,800	2015-2016
American Ornithologists' Union Research Award – <i>Competitive Grant</i>	\$2,218	2014
Animal Behaviour Society Research Grant – <i>Competitive Grant</i>	\$1,250	2013
Columbia E3B Pre-Dissertation Research Grant – <i>Institutional Grant</i>	\$2,500	2013
Northern Scientific Training Program Grant – <i>Competitive Grant</i>	\$2,200	2011

TRAVEL AND CONFERENCE AWARDS

International Society for Behavioural Ecology Travel Grant	\$1250	2016
Lynn Riddiford Best Poster Award at the 2106 SICB meeting	\$150	2016
Society for Integrative and Comparative Biology Housing Support	\$200	2012,'14,'16
North American Ornithological Conference Student Travel Award	\$500	2012

CURRICULUM VITAE

Sarah Guindre-Parker – Ph.D. Candidate, Columbia University

SELECTED CONFERENCE PRESENTATIONS (*† denotes supervisee presentation*)

18. **Guindre-Parker S** & DR Rubenstein. 2017. Multiple fitness benefits of alloparental care in fluctuating environments. 54th Annual Conference of the Animal Behavior Society, Toronto, ON. Jun 12-16. Accepted Oral Presentation.
17. †Marcus R, **S Guindre-Parker** & DR Rubenstein. 2017. Immune costs of breeding in superb starlings. Science and Engineering Fair, Westchester, NY. March 4. Poster Presentation (*Becca was awarded 4th place for her poster presentation*)
16. **Guindre-Parker S** & DR Rubenstein. 2017. Cooperative breeding reduces the oxidative costs of reproduction. 2017 SICB Annual Meeting, New Orleans, LA. Jan 4-8. Oral Presentation. (*Finalist in the Division of Animal Behavior's Best Student Presentation competition*)
15. **Guindre-Parker S** & DR Rubenstein. 2016. Unpredictable environmental conditions and alloparental care in superb starling. 16th International Society for Behavioural Ecology, Exeter, UK. Jul 28 - Aug 3. Oral presentation
14. †Pikus AE, **S Guindre-Parker** & DR Rubenstein. 2016. Testosterone in cooperatively breeding superb starlings (*Lamprotornis superbus*). Department of Ecology, Evolution and Environmental Biology Student Seminar, New York NY. April 14. Oral presentation
13. **Guindre-Parker S** & DR Rubenstein. 2016. Integrating proximate & ultimate costs of reproduction in cooperatively breeding starlings. 2016 SICB Annual Meeting, Portland OR. Jan 3-7. Invited oral presentation (*in symposium: "New Frontiers in the Integrative Study of Animal Behavior"*)
12. **Guindre-Parker S** & DR Rubenstein. 2016. What physiological traits allow tropical passerines to cope with climatic uncertainty? 2016 SICB Annual Meeting, Portland OR. Jan 3-7. Poster presentation (*awarded Division of Comparative Endocrinology's Lynn Riddiford best poster award*)
11. **Guindre-Parker S** & DR Rubenstein. 2014. Survival costs of reproduction in a cooperative breeder. 15th International Society for Behavioural Ecology, New York NY. Jul 31- Aug 5. Oral presentation
10. **Guindre-Parker S** & DR Rubenstein. 2014. Oxidative costs of reproduction and the evolution of cooperative breeding. 2014 SICB Annual Meeting, Austin TX. Jan 3-7. Oral presentation
9. **Guindre-Parker S**, H Gilchrist, S Baldo & OP Love. 2012. Alula Size in an Arctic-breeding passerine: condition-dependent achromatic signalling of a rarely studied plumage trait. 5th N. American Ornithology Conference, Vancouver BC. Aug 15-18. Oral presentation
8. **Guindre-Parker S**, H Gilchrist, S Doucet, S Baldo & OP Love. 2012. Complex communication with simple plumage: multiple ornaments and multiple receivers in an achromatic passerine. 42nd Ontario Ecology, Ethology & Evolution Colloquium, Hamilton ON. May 11-13. Oral presentation
7. **Guindre-Parker S**, H Gilchrist, S Baldo & OP Love. 2012. Alula size in snow buntings: a rare signal of male condition predicts reproductive performance. ArcticNet 8th Scientific Meeting and International Polar Year Conference, Montreal QC. April 22-27. Poster presentation
6. †Parker R, **S Guindre-Parker** & OP Love. 2012. Characterizing variation and repeatability in acquired humoral immunity: the effect of age, diet quality and body condition on immunoglobulin Y levels. University of Windsor's Biology undergraduate student honours colloquium. April 24. Oral

CURRICULUM VITAE

Sarah Guindre-Parker – Ph.D. Candidate, Columbia University

presentation (*awarded 3rd place presentation prize*)

5. †Parker R, **S Guindre-Parker** & OP Love. 2012. Characterizing variation and repeatability in acquired humoral immunity: the effect of age, diet quality and body condition on immunoglobulin Y levels. 25th Ontario Biology Day, Sudbury, ON. March 16-18. Oral presentation
4. **Guindre-Parker S**, H Gilchrist, S Doucet, DJ Mennill & OP Love. 2012. Does physiology link plumage and reproduction? 2012 SICB Annual Meeting, Charleston SC. Jan 3-7. Oral presentation
3. **Guindre-Parker S**, S Baldo, H Gilchrist, S Doucet, DJ Mennill & OP Love. 2012. Does physiology mediate the link between acoustic and visual signals and reproductive success in an Arctic passerine? 2012 SICB Annual Meeting, Charleston SC. Jan 3-7. Poster presentation
2. **Guindre-Parker S**, H Gilchrist, S Doucet, TE Pitcher & OP Love. 2010. Male quality in an Arctic passerine: does plumage quality drive fitness in snow buntings (*Plectrophenax nivalis*). ArcticNet 7th Scientific Meeting, Ottawa ON. December 14-17. Poster presentation
1. **Guindre-Parker S**, S Bourgeon & TD Williams. 2008. Seasonal variation in European starling nestling health. Rising Stars of Research National Science Poster Competition, University of British Columbia, Vancouver BC. August 21-24. Poster presentation

TEACHING EXPERIENCE

Co-Instructor – Sustainable Development (Undergrad. field course in Kenya), Princeton & Columbia University	Planned course schedule, contributed to developing class project and syllabus; provided extensive feedback on presentations and writing; organized travel & meals	Feb 2016
Guest Lecturer – Ecology of African Savannahs (Undergrad. field course in Kenya), University of Florida	Delivered introductory lecture on “Avian Reproduction”; presented recent findings from my Ph.D. research	May 2015
Teaching Assistant – Sustainable Development (Undergrad. field course in Kenya), Princeton & Columbia University	Helped develop the class schedule and syllabus for a new course; graded exam; provided extensive feedback on written assignments and presentations; organized travel & meals	Feb 2015
Teaching Assistant – Fundamentals of Ecology and Evolution (Graduate course), Columbia University	Answered student questions during office hours; graded all assignments; provided ample written feedback; delivered a guest lecture on “Interspecific Competition”	Sep - Dec 2013
Teaching Assistant – Tropical Biology (Undergrad. field course in Kenya) Princeton & Columbia University	Helped students develop independent field research projects; provided ample written feedback; graded assignments and exams	Feb 2013
Teaching Assistant – Introduction to Ecology (Undergrad. Course), University of Windsor	Led labs; wrote and graded quizzes; graded assignments; guided students in developing independent research projects	Sep - Dec 2010 & 2011

CURRICULUM VITAE

Sarah Guindre-Parker – Ph.D. Candidate, Columbia University

MENTORING EXPERIENCE

Intern Supervisor – Recent B.Sc. graduate field intern at the Mpala Research Centre, Kenya	Taught intern about performing behavioral observations; taught intern to record bird songs; taught intern to record and enter data	Mar – Jun 2016
Student Supervisor – High School student, Columbia University	Supervised Miss. Becca Marcus – “Immune costs of reproduction in a cooperative breeder”	Jan 2016 – Present
Student Supervisor – Graduate student (MA), Columbia University	Supervised Miss. Alyx Pikus – “Testosterone and breeding roles in a cooperatively breeding bird”	Sept 2015- Present
Intern Supervisor – High school field interns (2x) at the Mpala Research Centre, Kenya	Taught intern to read avian color-bands; taught intern about performing behavioral observations	July 2015
Intern Supervisor – Recent B.Sc. graduate field intern at the Mpala Research Centre, Kenya	Taught intern about trapping and measuring birds; taught intern about performing behavioral observations; taught intern to monitor breeding	Mar – Jun 2014
Field Assistant Supervisor – Mpala Research Centre, Kenya	Hired, trained and oversaw a Kenyan field assistant to trap, sample and observe birds	Apr 2013 – Jul 2016
Student Supervisor – Honours student (B.Sc.), University of Windsor	Supervised Mr. Ryan Parker – “Are IgY levels condition-dependent in a captive passerine?”	Sep 2011 - Apr 2012

SELECTED RESEARCH EXPERIENCE

Ph.D. Research – Field and laboratory work on African starling physiology and behaviour across an environmental gradient, Mpala Research Centre and throughout rural Kenya	2013-present
Independent Graduate Course Project – Field and laboratory work on tropical wren duetting physiology and behavior, Santa Rosa National Park, Costa Rica	2011
M.Sc. Research – Field and laboratory work on Arctic snow bunting physiology and behavior, East Bay Island, Canadian Arctic	2010-2012
Research Associate for Environment Canada – Field work on Arctic-breeding sea duck physiology and behavior, East Bay Island, Canadian Arctic	2010-2011
Research Assistant – Field work on migratory passerine physiology and morphometric, Manning Cooper & Associates Resource Management Consulting, Canada	2008
Research Assistant – Field and laboratory work on European starling and captive zebra finch physiology and behavior, Simon Fraser University, Canada	2007-2009

CURRICULUM VITAE

Sarah Guindre-Parker – Ph.D. Candidate, Columbia University

RESEARCH SKILLS (** skill with ≥ 5 years experience*)

Wildlife Trapping – *using mist-nets and ground traps; *banding birds; *measuring birds

Biological Sampling – *blood & feather sampling; hormone injections; *recording song

Behavioral Observations – *reading colour bands; *finding nests; *performing focal nest observations

Field – *camping in rural settings; *living in isolated camps; *coordinating import and export permits; *training in wilderness first aid; managing field assistants

Laboratory – *ELISA kits (testosterone, corticosterone); bacteria killing assay; *colorimetric kits (reactive oxygen metabolites, antioxidants); *immunoglobulin Y; differential white blood cell counts

Statistical Software & Analyses – *MS excel; JMP; *R (primary software used); mixed effects modeling; survival modeling; structural equation modeling

RECENT VOLUNTEERING AND PUBLIC OUTREACH

Primary and Secondary School Guest Speaker – delivered presentations on research and education to primary and secondary school students throughout Kenya 2015-2016

Laikipia Rabies Vaccine Campaign Volunteer – helped at mobile clinic in rural Kenya to educate pet owners and vaccinate dogs against rabies; administered questionnaires 2015

Daraja Day Volunteer – taught Kenyan high school girls about ornithology and field research methods; explained Ph.D. research results and importance 2015

Scientific Consultant for PBS – advised producers of a 3-part PBS documentary “Animal Homes”, featuring my study population: www.pbs.org/wnet/nature/animal-homes 2014

Wild Bird Fund of New York City Volunteer – rehabilitated New York city birds 2013-2014

Judge for the Windsor Science, Technology and Engineering Fair – judged elementary school science presentations; provided feedback to participants 2011

SCIENCE COMMUNICATION FEATURING MY RESEARCH

4. **Guindre-Parker, S.** 2015. Costs of reproduction. The Mpala Memos – newsletter for the Mpala Research Centre. July 2015 Edition.
3. **Guindre-Parker, S.** 2012. Snow bunting plumage quality: from feather to father? The Egret. Volume 28(1). *Also in the Snow Bunting Report, from the Canadian Snow bunting network.*
2. George, J. 2011. Features: The snow bunting’s spring tune-up. Nunatsiaq News. April 22nd Edition.
1. **Guindre-Parker, S.** 2008. A bird in the hand is worth two in the sagebrush. The Peak – Simon Fraser University Student Newspaper. May 20th Edition.

PEER-REVIEWER CONTRIBUTIONS

Journal Reviewer: Avian Biology Research (x1) Since 2017

Grant Reviewer: Animal Behaviour Society (x2) Since 2015

Journal Reviewer: Auk: Ornithological Advances (x3); Journal of Avian Biology (x1); Behavioural Ecology (x7); PLOS ONE (x2) Since 2014

Journal Reviewer: Oecologia (x3); Behavioural Ecology and Sociobiology (x3) Since 2012