

KRISTA J. PATRIQUIN, PHD

Department of Biology, University of Toronto Mississauga · email: krista.patriquin@utoronto.ca

Website: kristapatriquin.com · Twitter: @KJPatriquin

EDUCATION

Ph.D. Department of Biology, Dalhousie University, Halifax, Nova Scotia. 2004 – 2012

Thesis: The Causes and Consequences of Fission-Fusion Dynamics in Female Northern Long-eared Bats, *Myotis septentrionalis*.

Supervisors: Dr. M. Leonard and Dr. H.G. Broders

M.Sc. University of Calgary, Calgary, AB. 1998 –2001

Thesis: Ecology of a Bat Community in Harvested Boreal Forest in Northwestern Alberta. Supervisor: Dr. R.M.R. Barclay

B.Sc. Honours. Mount Allison University, Sackville, NB. 1992 – 1997.

Thesis: Do Female Three-spined Sticklebacks (*Gasterosteus aculeatus*) Copy the Mate Choice of Others?

Supervisor: Dr. J.-G. Godin

RESEARCH INTERESTS

Broadly, I am an evolutionary ecologist interested in how ecology and disturbance shape populations and how animals adapt to change. I integrate an array of biological concepts to explore how current animal populations are shaped by the interplay among mating behaviour, foraging behaviour, social behaviour, functional ecology, genetic relatedness, and, more recently, human activity. I explore these relationships using a combination of field observations, experimental studies, genetic analyses, and quantitative analyses.

RESEARCH & PROFESSIONAL EXPERIENCE

2015 – present	Postdoctoral Fellow	Biology, University of Toronto Mississauga, Ontario
March 2019	Consultant	Sable Island Institute, Halifax, Nova Scotia
2015 – 2018	Visiting Fellow	Smithsonian Tropical Research Institute, Panama
2014 – 2015	Research Scientist	Dillon Consulting Limited, Ontario
Fall 2012	Wildlife Biologist	Dillon Consulting Limited, Nova Scotia
2004 – 2012	PhD	Biology, Dalhousie University, Nova Scotia
Fall 2003 & 2004	Wildlife Biologist	AMEC Earth & Environmental Ltd., Alberta
Fall 2003 & 2004	Wildlife Biologist	Golder Associates Ltd., Alberta
Summer 2003	Field Coordinator	Biology, University of Calgary, Alberta
Spring 2003	Consultant	Alberta Research Council, Alberta
2001 – 2002	Level 2 Wildlife Biologist	Golder Associates Ltd., Alberta
1999 – 2001	MSc	Biology, University of Calgary, Alberta
1997 – 1998	Research Associate	Biology, Mount Allison University, New Brunswick
1992 – 1997	BSc Honours	Biology, Mount Allison University, New Brunswick

FELLOWSHIPS, SCHOLARSHIPS, AND GRANTS (in CAD)

2015 – 2017	Natural Science and Engineering Research Council, PDF	45,000/year
2007	Nova Scotia Department of Natural Resources Species at Risk Conservation Fund	5,000

2007	Nova Scotia Department of Natural Resources Habitat Conservation Fund	4,000
2004 – 2006	Natural Science and Engineering Research Council, CGS D	35,000/year
2000	University of Calgary Thesis Research Grant	1,000
1999-2001	Natural Science and Engineering Research Council, PGS A	17,500/year
1999	Alberta Conservation Association Challenge Grant in Biodiversity	10,300
1999	Bat Conservation International Scholar	3,700
1999	Canadian Circumpolar Institute Circumpolar/ Boreal Arctic Research Grant	3,000

ACCOLADES

Biology TA Award. Dalhousie University, 2010. (Behavioural Ecology)

Best Student Talk. North American Symposium on Bat Research, 2009.

Poster Presentation Award. Atlantic Universities Undergraduate Biological Conference, 1997.

PUBLICATIONS

Book Chapters

Patriquin, KJ and JM Ratcliffe. 2016. Should I stay or should I go? Fission-fusion dynamics in bats. In: *Sociality In Bats*, J Ortega (ed).

Refereed Research Papers

Patriquin, KJ, CE Guy, J Hinds, and JR Ratcliffe. In revision. April 2019. Male and female bats use a large urban park differently. *Journal of Urban Ecology*.

Wilkinson, GS, GG Carter, KA Bohn, B Caspers, G Chaverri, D Farine, L Günther, G Kerth, M Knörnschild, F Mayer, M Nagy, J Ortega, and **KJ Patriquin**. 2019. Kinship, association, and social complexity in bats. *Behavioral Ecology and Sociobiology*. Topical Collection: Social complexity: patterns, processes, and evolution.

Patriquin, KJ, JE Kohles, RA Page, and JM Ratcliffe. 2018. Bats without borders: predators learn novel prey cues from other predatory species. *Science Advances* 4: eaaq0579

Vrtilek, J, G Carter, **KJ Patriquin**, RA Page, and JM Ratcliffe. 2018. New method for rapid testing of social learning in vampire bats. *Royal Society Open Science* 5: 172483

Patriquin, KJ, ML Leonard, HG Broders, WM Ford, ER Britzke, and A Silvis. 2016. Climatic and geographic influences on fission-fusion dynamics in northern long-eared bats. *Animal Behaviour*, 122: 47-57

Luszcz, TMJ, JMK Rip, **KJ Patriquin**, LM Hollis, JM Wilson, HDM Clarke, J Zinck, and RMR Barclay. 2016. A blind-test comparison of the reliability of using external morphology and echolocation-call structure to differentiate between the little brown bat, *Myotis lucifugus*, and Yuma myotis, *M. yumanensis*. *Northwestern Naturalist*, 97: 12-23

Patriquin, KJ, F Palstra, ML Leonard, and HG Broders. 2013. Female northern myotis, *Myotis septentrionalis*, that roost together are related. *Behavioral Ecology*, 24: 949-954

Patriquin, KJ, ML Leonard, HG Broders, and CJ Garroway. 2010. Do social networks of female northern long-eared bats vary with reproductive period and age? *Behavioral Ecology and Sociobiology*, 64: 899-913

Patriquin, KJ. 2004. Red bat (*Lasiurus borealis*) captured in northeastern Alberta. *Northwestern Naturalist*, 85: 28-30

Patriquin, KJ and RMR Barclay. 2003. Foraging by bats in cleared, thinned and unharvested boreal forest. *Journal of Applied Ecology*, 40:646-657

Patriquin, KJ, LJ Hogberg, BJ Chruszcz, and RMR Barclay. 2003. The influence of habitat structure on the ability to detect ultrasound using bat detectors. *Wildlife Society Bulletin*, 31:475-481

Hogberg, LJ, **KJ Patriquin**, and RMR Barclay. 2002. Use by bats of patches of residual trees in logged areas of the boreal forest. *American Midland Naturalist*, 148: 282-288

Patriquin-Meldrum, KJ and J-G J Godin. 1997. Do female three-spined sticklebacks copy the mate choice of others? *American Naturalist*, 151: 570-577

Technical Reports

Dillon Consulting Ltd. 2015. Predictors of Bat Fatality and Activity at the Talbot Wind Farm. Submitted to Enbridge

Golder Associates Ltd. 2002. Suncor Firebag In-situ Project Supplemental Wildlife Surveys 2001. Submitted to Suncor Energy Inc.

Golder Associates. 2001. Christina Lake Thermal Project, Phase 1 Wildlife Monitoring Program 2001. Submitted to PanCanadian Petroleum Limited

RESEARCH SEMINARS AND CONFERENCE PRESENTATIONS

Invited Seminars

- 2018 • All I need to know, I learned from bats. Natural History Museum, Berlin, Germany.
- 2017 • Interspecific learning in bats. Tupper Seminar Series, Smithsonian Tropical Research Institute, Panama.
- 2016 • The world of bats. Lincoln Park Zoo Seminar Series, Chicago, Illinois, USA.
 - Socioecology of bats: Insights from temperate forests, neotropics, and urban parks. Department of Biological Sciences, DePaul University, Chicago, Illinois, USA.
- 2015 • Should I stay or should I go? Fission-fusion in bats. Behavioral Discussion Group Seminar Series, Smithsonian Tropical Institute, Panama.
 - The causes and consequences of fission-fusion dynamics in bats. BAMBI Seminar Series, Smithsonian Tropical Institute, Panama.
 - The evolution of sociality in bats. Biology Department, Queen's University, Guelph, Ontario, Canada.
- 2013 • The causes and consequences of fission-fusion dynamics in female northern long-eared bats (*Myotis septentrionalis*). Biology Department, Mount Saint Vincent University, Halifax, Nova Scotia, Canada.
- 2007 • Bats gone wild. Department of Biology, Dalhousie University, Halifax, NS, Canada
- 2005 • Bats: A glimpse into the lives of one of our most misunderstood relatives. Biology Department, Mount Allison University, Sackville, New Brunswick, Canada.
- 2004 • Bats: Flying primates? Can logging be good? Does size matter? Department of Biology, Dalhousie University, Halifax, NS, Canada.

Oral Presentations (presenting author unless specified by an *)

- 2018 • The Boys of Summer: The role of municipal parks in the urban ecology of bats in Canada's largest urban centre. Canadian Society for Ecology & Evolution (CSEE)
 - Bats without borders: predators learn novel prey cues from other predatory species. CSEE*
 - The Boys of Summer: The role of municipal parks in the urban ecology of bats in Canada's largest urban centre. North American Congress for Conservation Biology
 - The Boys of Summer: The role of municipal parks in the urban ecology of bats in Canada's largest urban centre. Animal Behavior Society (ABS)
 - Bats without borders: predators learn novel prey cues from other predatory species. International Society for Behavioral Ecology (ISBE)
- 2017 • Interspecific information transfer among neotropical gleaner bats. ABS
 - The Boys of Summer: sex-specific patterns of urban habitat use by big brown bats. ABS*
- 2015 • Use of an urban park by big brown bats. North American Symposium on Bat Research (NASBR)
 - The cultural potential of bats. Ontario Ecology, Ethology, and Evolution Colloquium
 - The causes and consequences of fission-fusion dynamics in bats. University of Toronto's Atwood Colloquium in Ecology & Evolution

- 2014 • The cultural potential of bats. NASBR
- 2012 • Female northern myotis (*Myotis septentrionalis*) that roost together are related. 1st Joint Congress on Evolutionary Biology
- 2010 • Do social networks of female northern long-eared bats (*Myotis septentrionalis*) vary with reproductive period and age? Dalhousie University's Patrick Lett Symposium
- 2009 • Social networks of female northern long-eared bats (*Myotis septentrionalis*) vary with reproductive period and age. NASBR – **Best Student Talk**
- The influence of reproductive condition, age and annual cycles on the social networks of female northern long-eared bats (*Myotis septentrionalis*). Northeastern Biology Graduate Student Conference (NBGSC)
- 2008 • Social structure of female northern long-eared bats (*Myotis septentrionalis*). ISBE
- 2007 • Social behaviour of northern long-eared bats (*Myotis septentrionalis*). International Ethological Conference
- Roosting ecology of northern long-eared bats in mature Acadian forest. Acadian Forests Conference
- Social structure of northern long-eared bats (*Myotis septentrionalis*). NBGSC
- 2005 • Little brown (*Myotis lucifugus*) and northern long-eared bat (*M. septentrionalis*) roost selection at different spatial scales. Ecological Society of America
- Mating behaviour of little brown bats (*Myotis lucifugus*). NASBR
- Sexual selection on little brown bats (*Myotis lucifugus*). NBGSC
- 2004 • Foraging behaviour of a bat community in harvested boreal forest in northwestern Alberta. Canadian Society of Zoologists Annual Conference
- 2003 • Comparison of morphology, echolocation call structure, and genetics of *Myotis lucifugus* and *Myotis yumanensis*. NASBR
- Use by bats of patches of residual trees in logged boreal forest in northwestern Alberta. Alberta Chapter Wildlife Society Annual Conference*
- 2002 • Listed species? Alberta Chapter Wildlife Society Annual Conference
- 2001 • The influence of habitat type on the ability to detect ultrasound using bat detectors. NASBR
- Habitat use by bats in logged forest in northern Alberta. Alberta Chapter Wildlife Society Annual Conference
- Habitat use by bats in logged forests in northern Alberta. Alberta Conservation Association Biodiversity Conference
- 2000 • Habitat use by bats in logged forests in northern Alberta. NASBR
- Influence of habitat type on the ability to detect bats with AnabatII detectors. NASBR
- The influence of forest harvesting on habitat use by foraging bats. Prairie Universities Biological Symposium
- 1999 • The effects of fire and logging on forest-dwelling bats. NASBR

Poster Presentations (presenting author unless specified by an *)

- 2017 • The Boys of Summer: sex-specific patterns of urban habitat use by big brown bats. ABS*
- The Boys of Summer: The role of municipal parks in the urban ecology of bats in Canada's largest urban centre. New Phytologist Workshop: Synthesis in the City - Urban Evolutionary Ecology
- 2015 • Use of an urban park by big brown bats. North American Symposium on Bat Research (NASBR)
- The cultural potential of bats. Ontario Ecology, Ethology, and Evolution Colloquium
- 2005 • Mating behaviour of little brown bats (*Myotis lucifugus*). NASBR
- 2003 • Comparison of morphology, echolocation call structure, and genetics of *Myotis lucifugus* and *Myotis yumanensis*. NASBR
- 2001 • Habitat use by bats in logged forests in northern Alberta. Alberta Conservation Association Biodiversity Conference

- 2000 • Influence of habitat type on the ability to detect bats with AnabatII detectors. NASBR
- 1997 • Do female three-spined sticklebacks copy the mate choice of others? Atlantic Universities Undergraduate Biological Conference – **Poster Award**

MEDIA COVERAGE

- Post-doctoral work on learning in bats covered internationally by >20 sites, most notably: CBC Quirks & Quarks, Toronto Star, Washington Post, Science Daily, Science Friday, IFL Science, Wildlife Society
- Post-doctoral work with urban bats covered by Inside Toronto Bloor West Villager, CBC Metro Morning, Dispatches from the Field
- PhD work covered by Halifax Chronicle Herald, CBC

PEER REVIEW

- Animal Behaviour
- Behaviour
- Behavioral Ecology and Sociobiology
- Bioacoustics
- Canadian Journal of Zoology
- Ecology
- Journal of Animal Ecology
- Journal of Mammalogy
- Journal of Thermal Biology
- Journal of Wildlife Management
- Methods in Ecology and Evolution
- PLoS ONE
- The Northwest Naturalist

SERVICE AND ADMINISTRATION

University Level

- | | |
|-------------|---------------------------------------------------------------------------------------------------------------------------|
| 2012 | Lett Symposium Judge, Department of Biology, Dalhousie University |
| 2006 – 2009 | Dalhousie University Biology Ad-hoc Environmental Committee |
| 2006 – 2007 | Dalhousie University Biology Organization of Graduate Students (BOGS),
President |
| 2005 – 2006 | Dalhousie University Advisory Committee on Faculty of Graduate Studies
Scholarship Allocations, Student Representative |
| 2005 – 2006 | BOGS, Friday Informal Seminar Hour Coordinator |

Conference Organization

- | | |
|-------------|--------------------------------------------------------------------------------------------------------|
| 2009 | Canadian Society for Ecology and Evolution (CSEE) Organizing Committee,
Volunteer |
| 2007 | International Ethological Conference (IEC) Organizing Committee, Volunteer |
| 2006 – 2007 | Northeast Biological Graduate Student Conference (NBGSC) Organizing
Committee, Co-chair & Treasurer |

Conservation

- | | |
|----------------|-------------------------------------------------------------------------------------|
| 2017 – present | Ontario Bat Network |
| 2001 – 2003 | Western Canada Bat Working Group (WCBWG), Newsletter editor/ contributing
member |
| 2000 – 2003 | Alberta Bat Action Team (ABAT) |
| 2000 – 2003 | Alberta Chapter Wildlife Society |

