CURRICULUM VITAE

DAVID PUNZALAN

Royal Ontario Museum
Department of Natural History
&
University of Toronto
Department of Ecology and Evolutionary Biology

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CITZENSHIP: Canadian

ACADEMIC POSITIONS AND EDUCATION

Postdoctoral Fellow & Sessional Lecturer Jan 2011 – present
Royal Ontario Museum & University of Toronto
Research topics: macroevolutionary diversification, sexual dimorphism
*on unpaid parental leave from Jan 2011 – August 2011

Associate Research Fellow Feb 2010 – Dec 2010
University of Exeter in Cornwall
Research topics: evolution of genetic covariance structure, sexual selection and life history evolution

Postdoctoral Fellow Oct 2007 – Dec 2009
Université D'Ottawa/University of Ottawa
Research topics: the evolution of genetic covariances, intersex genetic correlations and evolutionary constraints.

Ph.D. Ecology and Evolutionary Biology 2007
University of Toronto
Advisors: Dr. Helen Rodd and Dr. Locke Rowe
Thesis: The evolution of sexually dimorphic colour pattern in the ambush bug *Phymata americana*

B.Sc. (Honours), Zoology, University of Toronto 1999

PUBLICATIONS

20. Singh A and **Punzalan D.** 2018. The strength of sex-specific selection in the wild. Evolution, DOI:10.1111/evo.13625.
19. **Punzalan D** and Rowe L. 2017. Hybridization and lack of prezygotic barriers between *Phymata pennsylvanica* and *americana*. Ecological Entomology 42: 210-220.
18. **Punzalan D** and Rowe L. 2016. Concordance between stabillizing sexual selection, intraspecific variation and interspecific divergence in *Phymata.* Ecology and Evolution 12: 7797-8009.
17. **Punzalan D** and Rowe L**.** 2015. Evolution of sexual dimorphism in phenotypic covariance structure in *Phymata*. Evolution 69: 1597-1609.
16. Gwynne DT, **Punzalan D** and Hunt J. 2015. Viability selection on female finery in the wild. Biological Journal of the Linnean Society 116: 530-540.
15. **Punzalan D**, Delcourt M and Rundle HD. 2014. Comparing the intersex genetic correlation for fitness across novel environments in the fruit fly, *Drosophila serrata*. Heredity 112: 143-148.
14. **Punzalan D** and Rowe L. 2013. Ecological correlates of mating success in a wild population of ambush bug. Ecological Entomology 38: 429-432.
13. Schoustra SE*, **Punzalan D***, Dali R, Rundle HD and Kassen R. 2012. Multivariate phenotypic divergence due to the fixation of beneficial mutations in experimentally evolved lineages of a filamentous fungus. PLoS ONE 7(11): e50305.
    *equally contributing co-authors
12. Schoustra SE and **Punzalan D.** 2012. Correlation of mycelial growth rate with other phenotypic characters in evolved genotypes of *Aspergillus nidulans***.** Fungal Biology 116: 630-636.
11. **Punzalan D** and Hosken DJ. 2010. Sexual dimorphism: why the sexes are (and are not) different. Current Biology 20: R972-R973. (Dispatch)**.**
10. **Punzalan D**, Rodd FH and Rowe L. 2010. Temporal variation in patterns of multivariate sexual selection in a wild insect population. American Naturalist 175: 401-414.
9. Kasumovic MM, Elias DO, **Punzalan D**, Mason AC and Andrade MCB. 2009. Experience affects the outcome of agonistic contests without affecting the selective advantage of size. Animal Behaviour 77: 1533-1538.
8. Auld H, **Punzalan D**, Godin J-G J and Rundle HD. 2009. Do female fruit flies (*Drosophila serrata*) copy the mate choice of others? Behavioural Processes 82: 78-80.
7. **Punzalan D**, Rodd FH and Rowe L. 2008. Sexual selection mediated by the thermoregulatory effects of male colour pattern in the ambush bug *Phymata americana.* Proceedings of the Royal Society of London B 275: 483-492.
    *this paper was featured on CBC *Quirks & Quarks* (Jan 2008) and *LiveScience* (USA)
6. **Punzalan D**, Cooray M, Rodd FH and Rowe L. 2008. Condition dependence of sexually dimorphic colouration and longevity in the ambush bug *Phymata americana.* Journal of Evolutionary Biology 21: 1297-1306.

5. **Punzalan D**, Rodd FH and Rowe L. 2008. Sexual selection on sexually dimorphic traits in the ambush bug *Phymata americana*. Behavioral Ecology 19: 860-870.
4. Elias DO, Kasumovic MM, **Punzalan D**, Andrade MCB and Mason AC. 2008. Assessment during aggressive contests between male jumping spiders. Animal Behaviour 76: 901-910.
3. Olendorf R, Rodd FH, **Punzalan D**, Houde AE, Hurt C, Reznick DN and Hughes KA. 2006. Frequency-dependent survival in natural Guppy populations. Nature 441: 633-636.
   **this paper* was listed as one of *15 Evolutionary gems* in *Nature,* received a *Faculty of 1000* citation and the subject of a *Current Biology* dispatch, also featured by *Biology News Net* (USA), *CNews* (Canada), U*niversity of Illinois News Bureau* (USA), *The Independent* (UK).
2. **Punzalan D**, Rodd FH and Hughes KA. 2005. Perceptual processes and the maintenance of polymorphism through frequency-dependent predation. Evolutionary Ecology 19: 303-320.
1. **Punzalan D**, Guiasu RC, Belchior D, and Dunham DW. 2001. Discrimination of conspecific-built mud chimneys from human-built ones by the burrowing crayfish *Fallicambarus fodiens* (Cottle, 1863) (Decapoda: Cambaridae). Invertebrate Biology 120: 58-66.

MANUSCRIPTS IN REVIEW OR PREPARATION

1. DeLisle SD, **Punzalan D**, Rollinson N, and Rowe L. The distribution of temporal peak displacements, extinction, and the blunderbuss. In review, Nature Ecology & Evolution.
2. **Punzalan D**, Colpitts J, Kwan L and Rundle HD. Experimental evolution of the G-matrix in response to desiccation resistance in *Drosophila melanogaster*.

AWARDS & GRANTS

2010 American Museum of Natural History, Collection Study Grant ($800)
2005 University of Toronto Doctoral Grant (University of Toronto, $4000)
2005 Frederick P. Ide Graduate Fellowship (University of Toronto, $2500)
2004 University of Toronto Doctoral Grant (University of Toronto, $4000)
2004 W.D. John Eberlie Award (Toronto Entomologists Association, $300)
2004 Frederick P. Ide Graduate Fellowship (University of Toronto, $2500)
2003 Frederick P. Ide Graduate Fellowship (University of Toronto, $2500)
2000 University of Toronto Open Fellowship ($7600)

TEACHING APPOINTMENTS

Sessional Lecturer/Coordinator (September 2011 – Present)

Behaviour and Behavioural Ecology, University of Toronto.
(3rd year course, ~ 280 students in 6 sessions)

Sessional Lecturer (January 2015 – Present)
Seminar in Ecology and Evolution, University of Toronto
(fourth year course, ~ 50 students in 4 sessions)

Sessional Lecturer (January 2018 – Present)
Statistics for Biologists, University of Toronto.
(2nd year course, ~ 95 students in 1 session)

Sessional Lecturer (September 2018 – Present)
Philosophy and Methods, University of Toronto.
(Graduate course, 12 students in 1 session)

Sessional Lecturer (2017, 2018)
Field Temperate Biology, Koffler Scientific Reserve, University of Toronto.
(4th year course, 28 students in 2 sessions)

ADDITIONAL TEACHING EXPERIENCE

Instructor (May, 2009)
Enrichment Mini-Course for high school students (topic: evolution, ecology and biodiversity), University of Ottawa. (22 students)

Teaching Assistant (2000-2006, University of Toronto):

- Animal Communication & Sensory Ecology (4th year) (2x)
- Evolutionary Ecology (4th year) (1x)
- Behavioural Ecology (3rd year) (3x)
- Population Ecology (3rd year) (1x)
- Organisms and their Environment (1st year) (2x)

INVITED RESEARCH SEMINARS

- Queen's University, Department of Ecology and Evolutionary Biology. September 2018.
- University of California Riverside, Entomology. November 2013.
- University of Guelph, Department of Integrative Biology. November 2012.
- University of Edinburgh, Institute for Evolutionary Biology. December 2010.
- Oxford University, Edward Grey Institute. December 2010.
- University of Exeter in Cornwall, Centre for Ecology and Conservation. March 2010.
- Heteropterist Symposium, Entomological Society of America (Indianapolis, IN). December 2009.
- University of Toronto at Mississauga, Department of Biology. March 2009
- Université D'Ottawa/University of Ottawa, Department of Biology. November 2007.

SELECTED CONFERENCE PRESENTATIONS

Punzalan D, deLisle, SD, Rollinson N, and Rowe L**.** Extinction and the blunderbuss: the temporal distribution of macroevolutionary bursts. Canadian Society for the Study of Ecology and Evolution. Guelph, July 19-23, 2018.

Punzalan D and Rowe L**.** Stabilizing sexual selection shapes both micro- and macroevolution in *Phymata.* Annual Meeting of the Society for the Study of Evolution. Guaruja, Brazil, June 26-30, 2015.

Punzalan D. Are there ecological costs of secondary sex colouration in the ambush bug *Phymata americana*? Annual Meeting of the Entomological Society of America. Indianapolis, Indiana. December 11-16, 2009.

Punzalan D, Rowe L and Rodd FH. The adaptive significance of costly, sexually selected colour pattern in a dimorphic bug. Annual Meeting of the Entomological Society of Canada. Ottawa, October 19-22, 2008.

Punzalan D, Rodd FH and Rowe L. Temporal variation in patterns of multivariatesexual selection in the ambush bug. Canadian Society for the Study of Ecology and Evolution. University of Toronto, Toronto, Ontario. May 17-20, 2007.

Punzalan D, Cooray M, Rodd FH and Rowe L. Condition dependence of sexually selected colouration and longevity in a sexually dimorphic bug. Annual Meeting of the Society for the Study of Evolution. Stony Brook University, Stony Brook, New York. June 23-27, 2006.

Punzalan D, Rowe L and Rodd FH. The adaptive significance of costly, sexually selected colour pattern in a dimorphic bug. Annual Meeting of the Society for the Study of Evolution. University of Alaska Fairbanks, Fairbanks, Alaska. June 10-14, 2005.

Punzalan D, Rowe L and Rodd FH. Sexual selection on age- and condition-dependent coluration in the ambush bug. International Society for Behavioral Ecology. University of Jyvaaskyla, Jyvaaskyla, Finland. July 10-15, 2004.

Punzalan D, Rowe L and Rodd FH. Sexual selection on age- and condition-dependent traits in the ambush bug *Phymata americana* (Heteroptera: Phymatidae). Annual Meeting of the Society for the Study of Evolution. California State University, Chico, California. June 20-24, 2003.

Punzalan D, Rowe L and Rodd FH. Ontogeny of sexually dimorphic traits in the ambush bug *Phymata americana.* Ontario Ecology and Ethology Colloquium. McMaster University, Hamilton, Ontario. May 3-5, 2003.

Punzalan D. Body size, reproductive condition and mating success in the ambush bug *Phymata americana* Melin (Heteroptera: Phymatidae). International Society for Behavioural Ecology. Université du Québec à Montréal, Montreal, Quebec. July 7-12, 2002.

Punzalan D, and Rodd FH. Does frequency-dependent selection contribute to colour pattern polymorphism in *Poecilia reticulata*? Annual Meeting of the Society for the Study of Evolution. University of Tennessee, Knoxville, TN. June 26 – July 1, 2001.

PUBLIC OUTREACH SEMINARS

Punzalan D. Ontario Nature & Rare Charitable Research Reserve, Annual Gathering, May 2015. *Title:* Secret Lives of Ambush bugs.

Punzalan D. Rare Charitable Research Reserve, Public Research Forum. Cambridge, Ontario. April 2014. *Title:* Drawing the line: what maintains boundaries between the two species of ambush bug in Ontario?

Punzalan D. Rare Charitable Research Reserve, Public Research Forum. Cambridge, Ontario. April 2013. *Title:* Backyard bugs and the battle of the sexes.

Punzalan D. University of Toronto, Zoology Undergraduate Course Union. May 2006. *Title:* Evolution of colour pattern in the ambush bug: a case of the hotter sex?

PROFESSIONAL AND PUBLIC SERVICE

- **Ad hoc peer reviewer** (since 2003) for: U.S. National Science Foundation, American Naturalist, Evolution, Proceedings of the Royal Society of London B, Trends in Ecology and Evolution, Biology Letters, Genetica, Biological Journal of the Linnean Society, PLoS One, Science Advances, Evolutionary Ecology, Behavioural Ecology and Sociobiology, BMC Ecology, BMC Evolution, Functional Ecology, Ecological Entomology, Ethology, Naturwissenschaften, Journal of the Entomological Society of Ontario, Journal of Insect Science, Journal of Orthoptera Research, Encyclopedia of Life Sciences.
- **Public outreach educator,** Rare Charitable Research Reserve, Every Child Outdoors program (2017); Institute of Child Studies, Toronto, Ontario (2002, 2003, 2004)
- **Co-organizer,** Evolutionary Ecology journal discussion group, Centre for Ecology and Conservation, University of Exeter in Cornwall (2010)
- **Judge (conference talk and poster competitions),** Canadian Society for Ecology and Evolution (May 14-16, 2009, Ottawa), Annual Meeting of the Entomological Society of Canada, Ottawa (October 19-22, 2008)
- **Field instructor** (volunteer), Enrichment Mini-Course for high school students (topic: evolution & ecology), University of Ottawa (May 5-9, 2008)
- **Judge** (volunteer), Canada Wide Science Fair, University of Ottawa (May 10-18, 2008); Let's Talk Science - All Science Challenge, Toronto, ON (May 22, 2007)
- **Coordinator,** Evolutionary Quantitative Genetics Reading Group, Department of Biology, University of Ottawa (2009)
- **Coordinator,** Ecology and Evolutionary Biology weekly journal discussion group, Department of Ecology and Evolutionary Biology, University of Toronto (2006)
- **Student advisor** to the search committee for the position of Director of the Koffler Scientific Reserve at Joker's Hill, University of Toronto (2006)

- **Organization committee member**, Ontario Ecology and Ethology Colloquium, University of Toronto (2004)
- **Graduate affairs representative**, Department of Zoology, University of Toronto (2003)
- **Secretary**, Zoology Union for Graduate Studies, Department of Zoology, University of Toronto (2002)
- **Co-organizer**, Evolutionary Biology departmental seminar series, University of Toronto (2001)

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Society for the Study of Evolution
- American Society of Naturalists
- International Society for Behavioural Ecology
- Canadian Society for the study of Ecology and Evolution
- Entomological Society of Canada
- Entomological Society of Ontario

REFERENCES

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