

## *Curriculum Vitae*

Christopher R. Friesen, PhD

Vice Chancellor's Postdoctoral Research Fellow

School of Earth, Atmospheric and Life Sciences, University of Wollongong NSW 2522 Australia

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Links to: [[Personal web page](#)] [[Google Scholar page](#)] [[ORCID](#)]

### **EDUCATION**

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Oregon State University      Ph.D. in Zoology      March 2013

- Dissertation title: *Patterns and Mechanisms: Postcopulatory sexual selection and sexual conflict in red-sided garter snakes*
- Dissertation adviser: Professor Robert T. Mason, J.C. Braly Curator of Vertebrates
- Ph.D. Committee members: Profs. S.J. Arnold; S. Estes; D. Froman; T. Garcia; D. Warrick

Oregon State University      B.S. *Summa Cum Laude* in Philosophy      March 2006

Oregon State University      B.S. *Summa Cum Laude* in Zoology w/Chemistry minor      March 2006

### **APPOINTMENTS**

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April 2018-2021 Vice Chancellor's Postdoctoral Research Fellow (Lecturer, level B), University of Wollongong

Aug 2016-March 2018 Postdoctoral Fellow (Level B), University of Sydney, with Prof. Rick Shine

Aug 2015-July 2016 Postdoctoral Fellow (Level B), University of Sydney, with Prof. Mats Olsson

Aug 2013-Aug 2015 National Science Foundation (USA) International Postdoctoral Research Fellow, University of Sydney

### **GRANTS, FELLOWSHIPS, SELECTED AWARDS AND SPECIAL RECOGNITION**

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2021 Co-Chief Investigator (CI) Australian Research Council, Discovery Project (*AUD 540,000*)

2018 Vice Chancellor's Postdoctoral Research Fellowship, University of Wollongong (*AUD 459,000*)

2017 Best Early Career Researcher presentation, Australasian Association for the Study of Animal Behaviour

2013 National Science Foundation International Postdoctoral Research Fellowship (*USD 151,200*)

2012 Oregon State University Zoology Department award for Outstanding Graduate Student Service

2011 Best oral paper presentation, Biology of the Spermatozoa Conference, Sheffield, England

2010 Frolander Award for The Outstanding Graduate Teaching Assistant at Oregon State University

2010 NSF Doctoral Dissertation Improvement Grant (*USD 14,000*)

2005 Howard Hughes Medical Institute (HHMI) Undergraduate Research Fellowship (*USD 1800*)

2005 OSU Undergraduate Research Innovation, Creativity & Scholarship grant (*USD 1800*)

## TEACHING

### UNIVERSITY OF WOLLONGONG

2019: Physiology, Animal Behaviour and Intro to Behavioural Ecology (Lecturer)

### UNIVERSITY OF SYDNEY

2017-18: Sexual selection section in Animal Behaviour (Lecturer)

2017: Ecophysiology section in Tropical Wildlife Ecology (Lecturer)

### OREGON STATE UNIVERSITY

2010-2012: Human Anatomy & Physiology (Lecturer and Course coordinator)

2012: Vertebrate Biology and Evolution (Lecturer and Course coordinator)

2011-2012: Comparative Vertebrate Anatomy (Lab Instructor, and developed all lab curriculum)

2007-2010: Vertebrate Biology and Evolution (Lab Instructor, and developed all lab curriculum)

2007-2012: Human Anatomy & Physiology (Lab Instructor (TA))

2006-2007: Introductory Biology (Lab Instructor (TA))

## REFEREES

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### **Professor Robert T. Mason**

Professor of Integrative Biology  
J.C. Braly Curator of Vertebrates  
Department of Integrative Biology  
3029 Cordley Hall  
Oregon State University  
Corvallis, OR 97331-2914  
masonr@science.oregonstate.edu

### **Professor Mats Olsson**

Professor of Evolutionary Biology  
Department of Biological and Environmental  
Sciences, University of Gothenburg  
Box 463, SE 405 30 Gothenburg, Sweden  
Ph: +46 31 786 3971  
mats.olsson@bioenv.gu.se

### **Associate Professor Phillip Byrne**

School of Earth, Atmospheric and Life  
Sciences. Faculty of Science, Medicine and  
Health, University of Wollongong NSW 2522  
Australia pbyrne@uow.edu.au

### **Professor Rick Shine AM FAA FRZS**

Department of Biological Sciences,  
Macquarie University NSW 2109  
rick.shine@mq.edu.au  
Emeritus Professor University of Sydney

## PUBLICATIONS IN PEER REVIEWED JOURNALS

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**33 publications.** Total citations **473**; *h-index* **14**; *i10-index* **17**; *m-index* **2.00** (Google Scholar 30, Jan. 2021)

†corresponding author; \*student coauthor (citations Google Scholar | impact factor of journal)

1. **Friesen CR<sup>†</sup>**, RT Mason, EJ Uhrig. **Accepted-2021**. Postcopulatory sexual selection as a driver of sex- and population-specific kidneys mass in garter snakes *Biological Journal of the Linnean Society* ( **0** | **2.28**)
2. **Friesen CR<sup>†</sup>**, AF Kahrl, M Olsson. **2020**. Sperm competition in squamate reptiles. (Invited review) *Special Issue 50 years of sperm competition in Philosophical Transactions of the Royal Society B* (**2** | **6.74**)

3. **Friesen CR<sup>†</sup>**, DWA Noble, M Olsson. **2020**. The role of oxidative stress in postcopulatory selection. (Invited review) *Special Issue 50 years of sperm competition in Philosophical Transactions of the Royal Society B* (1 | 6.74)
4. **Friesen CR<sup>†</sup>**, N Rollings\*, M Wilson, CM Whittington, R Shine, M Olsson. **2020**. Covariation in superoxide, sperm telomere length and velocity in a polymorphic reptile. *Behavioral Ecology and Sociobiology* (1 | 2.37)
5. Lindsay WR, **CR Friesen**, C Sihlbom, J Bergström, E Berger, M Wilson, M Olsson. **2020**. Vitellogenin offsets oxidative costs of reproduction in female painted dragon lizards. *Journal of Experimental Biology* (1 | 3.44)
6. Whittington CM, **CR Friesen**. **2020**. The evolution and physiology of male pregnancy in syngnathid fishes. *Biological Reviews* (4 | 10.29)
7. Rollings N\*, HL Waye, RW Krohmer, EJ Uhrig, RT Mason, M Olsson, CM Whittington, **CR Friesen<sup>†</sup>**. **2020**. Sperm telomere length correlates with blood telomeres and body size in red-sided garter snakes, *Thamnophis sirtalis parietalis*. *Journal of Zoology* (2 | 1.55)
8. **Friesen CR**, R Shine. **2019**. At the invasion front, male cane toads (*Rhinella marina*) have smaller testes. *Biology Letters* (4 | 3.57)
9. **Friesen CR<sup>†</sup>**, SP de Graaf, and M Olsson. **2019**. The relationship of body condition, superoxide dismutase and superoxide with sperm performance. *Behavioral ecology* (3 | 3.32)
10. Rollings N\*<sup>†</sup>, **CR Friesen**, CM Whittington, R Johansson\*, R Shine, M Olsson. **2019**. Sex- and tissue-specific based differences in telomere length in a reptile. *Ecology and Evolution* (14 | 2.67)
11. Pauliny, A, E Miller, N Rollings\*, E Wapstra, D Blomqvist, **CR Friesen**, M Olsson<sup>†</sup>. **2018**. Effects of male telomeres on probability of paternity in sand lizards. *Biology Letters*. (5 | 3.57)
12. Olsson M<sup>†</sup>, **CR Friesen**, N Rollings\*, J Sudyka\*, W Lindsay, CM Whittington, M Wilson. **2018**. Long term effects of superoxide and DNA repair on lizard telomeres. *Molecular Ecology*. (13 | 6.13)
13. Chen W<sup>†</sup>, L Peng, L Jiang, DA Pike, **CR Friesen**, G Brown. **2018**. High altitude frogs (*Rana kukonoris*) adopt a diversified bet-hedging strategy in the face of environmental unpredictability. *Asian Herpetological Research* (7 | 0.81)
14. Hurley LL\*<sup>†</sup>, CS McDiarmid\*, **CR Friesen**, SC Griffith, M Rowe. **2018**. Experimental heatwaves negatively impact sperm quality in the zebra finch. *Proceedings of the Royal Society B: Biological Sciences* (26 | 5.42)
15. Olsson M<sup>†</sup>, E Wapstra, **CR Friesen**. **2018**. Ectothermic Telomeres: it's time they came in from the cold (Invited review). *Special Issue on telomere biology in Philosophical Transactions of the Royal Society B* (34 | 6.74)
16. **Friesen CR<sup>†</sup>**, EJ Uhrig, E Bentz\*, L Blakemore\*, RT Mason. **2017**. Correlated evolution of sexually selected traits: interspecific variation in ejaculates, sperm morphology, copulatory mate-guarding and body size in two sympatric species of garter snakes. *Behavioral Ecology and Sociobiology* (5 | 2.37)
17. **Friesen CR<sup>†</sup>**, Johansson, R\*, Olsson M. **2017**. Morph-specific metabolic rate and the timing of reproductive senescence in a color polymorphic dragon. *Journal of Experimental Zoology Part A: Ecological and Integrative Physiology* (7 | 1.28)

18. Olsson M<sup>†</sup>, E Wapstra, **CR Friesen**. 2017. Evolutionary Ecology of Telomeres: a Review. *Annals of the New York Academy of Sciences* (29 | 4.71)
19. **Friesen CR<sup>†</sup>**, DR Powers, RT Mason. 2017. Using whole-group metabolic rate and behaviour to assess the energetics of courtship in red-sided garter snakes. *Animal Behaviour* (5 | 3.28)
20. McDiarmid C<sup>\*</sup>, **CR Friesen<sup>†</sup>**, C Ballen, M Olsson. 2017. Sexual colouration and sperm performance in the Australian painted dragon lizard, *Ctenophorus pictus*. *Journal of Evolutionary Biology* (12 | 2.79)
21. Rollings N<sup>\*</sup>, EJ Uhrig, RW Krohmer, HL Waye, RT Mason, M Olsson, CMWhittington, **C R Friesen<sup>†</sup>**. 2017. Age-related sex differences in body condition and telomere dynamics of red-sided garter snakes. *Proceedings of the Royal Society B: Biological Sciences* (33 | 5.42)
22. **Friesen CR<sup>†</sup>**, MR Wilson, N Rollings<sup>\*</sup>, J Sudyka<sup>\*</sup>, CM Whittington, M Giraudeau, M Olsson. 2017. Conditional handicaps in exuberant lizards: Bright color in aggressive males is correlated with high levels of free radicals. *Frontiers in Ecology and Evolution* 5 (Invited) (8 | 2.08 (2020))
23. Rollings, N<sup>\*</sup>, **CR Friesen**, J Sudyka<sup>\*</sup>, CM, Whittington, M Giraudeau, M Olsson<sup>†</sup>. 2017. Telomere dynamics in a lizard with morph-specific reproductive investment and self-maintenance. *Ecology and Evolution* (23 | 2.67)
24. Giraudeau, M<sup>†</sup>, **CR Friesen**, J Sudyka<sup>\*</sup>, N Rollings<sup>\*</sup>, MRWilson, M Olsson. 2016. Aging and the cost of maintaining coloration in the Australia painted dragon. *Biology Letters* (20 | 3.57)
25. **Friesen CR<sup>†</sup>**, EJ Uhrig<sup>\*</sup>, RT Mason, PLR Brennan. 2016. Female behaviour and the interaction of male and female genital traits mediate sperm transfer during mating. *Journal of Evolutionary Biology* (17 | 2.79)
26. **Friesen CR<sup>†</sup>**, DR Powers, PE Copenhaver<sup>\*</sup>, RT Mason. 2015. Size-dependence in non-sperm ejaculate production quantified by measuring daily energy expenditure and resting metabolic rate. *Journal of Experimental Biology* (27 | 3.44)
27. **Friesen CR<sup>†</sup>**, EJ Uhrig<sup>\*</sup>, and RT Mason. 2014. Females remate more frequently when mated with sperm-deficient males. *Journal of Experimental Zoology Part A: Ecological Genetics and Physiology* (12 | 1.30)
28. **Friesen CR<sup>†</sup>**, AR Kerns<sup>\*</sup>, RT Mason. 2014. Factors influencing paternity in multiply mated female red-sided garter snakes and the persistent use of sperm stored over winter. *Behavioral Ecology and Sociobiology* (16| 2.37)
29. **Friesen CR<sup>†</sup>**, MK Squire<sup>\*</sup>, and RT Mason. 2014. Intra-population variation of ejaculate traits and sperm depletion in red-sided garter snakes. *Journal of Zoology* (22 | 2.15)
30. **Friesen CR<sup>†</sup>**, RT Mason, SJ Arnold, and S Estes. 2014. Patterns of sperm use in two populations of red-sided garter snake with long-term female sperm storage. *Canadian Journal of Zoology* (28 | 1.65)
31. **Friesen CR<sup>†</sup>**, EJ Uhrig<sup>\*</sup>, MK Squire<sup>\*</sup>, RT Mason, and PLR Brennan. 2014. Sexual conflict over mating in red-sided garter snakes (*Thamnophis sirtalis*) as indicated by experimental manipulation of genitalia. *Proceedings of the Royal Society B: Biological Sciences* (33 | 5.42)
32. **Friesen CR<sup>†</sup>**, R Shine, RW Krohmer, and RT Mason. 2013. Not just a chastity belt: the functional significance of mating plugs in garter snakes, revisited. *Biological Journal of the Linnean Society* (40 | 2.28)

## Book chapters (peer-reviewed)

33. **Friesen C.R.<sup>†</sup>**, M. Olsson. 2016. Ed. Richard M. Kliman. Polyandry and female postcopulatory choice. *Encyclopedia of Evolutionary Biology*; Elsevier.

## PUBLICATIONS UNDER REVIEW IN PEER-REVIEWED JOURNALS

**Friesen CR<sup>†</sup>**, MR Wilson, N Rollings, J Sudyka, M Giraudeau, CM Whittington, and M Olsson. **In review.** Exercise training in a color-polymorphic lizard reveals differential effects of mating tactics and color morphs on telomere, body condition and growth dynamics *Journal of Experimental Biology* <https://www.biorxiv.org/content/10.1101/2020.12.23.424255v1.abstract>

Kar F<sup>†</sup>, S Nakagawa, **CR Friesen**, D Nobel. **In revision.** Individual variation in thermal plasticity and its impact on mass-scaling. *Okios* <https://ecoevorxiv.org/g4z2e/>

## SKILLS

My published and ongoing empirical work is built upon extensive fieldwork, manipulative experimental design, and mastery of many key field and lab techniques. These methods including behavioral assays; surgical manipulations and hormone implants; metabolism (respirometry and the doubly labeled water method); reactive oxygen species (flow cytometry); antioxidants and oxidative damage (colorimetric assays); Photo color analysis spectrometry (Ocean Optics, Photoshop and Matlab); telomere length determination (using qPCR); sperm performance (using computer aided sperm analysis); molecular ecology; parentage analysis and population genetics software (PCR and e.g. CERVUS); and advanced statistical methods in various platforms (e.g., R, SPSS, SigmaPlot, JMP).

## CONFERENCE PROCEEDINGS, PRESENTATIONS AND UNIVERSITY SEMINARS

### CONFERENCE PAPERS

- January 2020, University of Otago, Dunedin, New Zealand. 9<sup>th</sup> World Congress of Herpetology. Sex differences in kidney gene expression: Reproductive costs of the renal sexual segment?
- December 2019, Sydney NSW, Australia, Australasian Evolution Society. Experimental examination of telomere length in a polymorphic dragon.
- September 2019, Stockholm, Sweden. Biology of the Spermatozoa Conference. How do garter snakes make copulatory plugs? Convergent evolution of a trait involved in sexual conflict.
- November 2017, Hobart, TAS, Australia. Australasian Evolution Society. Interspecific variation in sexually selected traits in two sympatric species of garter snakes.
- July 2017, Melbourne, VIC, Australia. The Australasian Society for the Study of Animal Behaviour. Trade-off between pre- and postcopulatory traits: The effect of superoxide, superoxide dismutase and condition on sperm performance. ***Won award for Best Oral paper by an Early Career Researcher***
- April 2017, Chicago, IL, USA. American Association of Anatomists (Invited Symposium presentation). It takes two to tango: The interaction of male and female genital traits mediates sperm and ejaculate transfer during mating.
- December 2016, University of Western Sydney, Richmond, NSW, Australian and New Zealand Society for Comparative Physiology and Biochemistry. Sex and death in the Canadian Bush: Sex-specific telomere dynamics in the red-sided garter snake.

August 2016, University of Exeter, UK. International Society for Behavioral Ecology. The effect of exercise and oxidative stress on sperm traits.

July 2016, Katoomba, NSW, Australia. The Australasian Society for the Study of Animal Behaviour. Dehydrated males are less likely to dive into the mating pool, but when they do, they leave wet plugs.

February 2016, Launceston, TAS, Australia. Australian Society of Herpetologists. Exercise makes the sperm go faster: The effect of exercise and oxidative stress on sperm traits in the colour polymorphic painted dragon lizard.

January 2016, Portland OR. Society for Integrative and Comparative Biology. Tradeoff between pre- and postcopulatory traits: The effect of exercise and oxidative stress on sperm traits in the color polymorphic painted dragon lizard.

January 2016, Portland OR (**Invited symposium presentation**) Society for Integrative and Comparative Biology. Female behavior and the interaction between male and female genital traits mediate copulatory success. (Symposium: The Morphological Diversity of Intromittent Organs)

September 2015, Sheffield, UK. Biology of the Spermatozoa Conference. Potential trade-offs between pre- and post-copulatory sexually selected traits: The effect of oxidative stress on sperm motility in the painted dragon lizard. (Poster).

August 2015, Cairns, QLD, Australia. Behaviour. Female behaviour and the interaction between male and female genital traits mediate copulatory success.

January 2015, Eildon, VIC, Australia. Australian Society of Herpetologists. The effect of oxidative stress on sperm traits in the painted dragon lizard.

August 2014, New York, NY, USA. International Society for Behavioral Ecology. “Shooting blanks”: Females remate more frequently when mated with sperm-deficient males.

July 2014, University of Sydney, NSW, Australia. Genetics Society of AustralAsia. Persistent use of sperm stored over winter in multiply-mated female garter snakes.

January 2014, Canberra, ACT, Australia. Australian Society of Herpetologists. Genital manipulation affects copulation duration and sperm transfer in red-sided garter snake.

January 2014, Austin, TX, USA. Society for Integrative and Comparative Biology. Interspecific variation in traits associated with postcopulatory sexual selection in garter snakes.

January 2014, Austin, TX, USA. Society for Integrative and Comparative Biology. The effect of oxidative stress on sperm motility of painted dragon lizards. (Poster)

September 2013, Sheffield, UK. Biology of the Spermatozoa Conference. Genital manipulation affects copulation duration and sperm transfer in red-sided garter snake (*Thamnophis sirtalis parietalis*) (Poster)

January 2013, San Francisco, CA, USA. Society for Integrative and Comparative Biology. Sexual conflict during mating in red-sided garter snakes as evidenced by genital manipulation.

January 2013, San Francisco, CA, USA. Society for Integrative and Comparative Biology. The effect of mating with vasectomized males on subsequent mating behavior in female red-sided garter snakes. (Poster)

December 2012, Oregon State University, Dept. Zoology, PhD defense seminar. Patterns and Mechanisms: Postcopulatory sexual selection and sexual conflict in a novel mating system.

August 2012, Lund, Sweden. International Society for Behavioral Ecology. Asymmetric gametic isolation between two populations of red-sided garter snake.

December 2011, Seattle, WA, USA. National Science Education Association Conference (**Invited presentation**). Building Phylogenetic Trees by Modeling Change through Time.

September 2011, Sheffield, UK. Biology of the Spermatozoa Conference. (**Invited presentation**)  
Not just a chastity belt: the role of copulatory plugs in Red-sided garter snakes revisited ***Won the Best Oral paper award***

January 2011, Salt Lake City, UT, USA. Society for Integrative and Comparative Biology. Not just a chastity belt: the role of copulatory plugs in red-sided garter snakes revisited.

September 2010, Perth, WA, Australia. International Society for Behavioral Ecology. Sperm competition, mate order effects, and the potential for female influence on paternity in red-sided garter snakes (Poster)

June 2010, Portland, OR, USA. Evolution. Sperm competition, mate order effects, and the potential for female influence on paternity in red-sided garter snakes

January 2010, Seattle, WA, USA. Society for Integrative and Comparative Biology. Sperm competition and mate order effects in red-sided garter snakes (Poster)

July 2009, Portland, OR, USA. Joint Meetings of Ichthyologists and Herpetologists. Sperm precedence in a snake: *Thamnophis sirtalis parietalis*

June 2009, Moscow, ID, USA. Evolution. Inter-population Asymmetry in Male Mate Preference & Size Dependent patterns of paternity in a garter snake.

January 2009, Boston, MA, USA. Society for Integrative and Comparative Biology. Cost of male courtship: Using whole group metabolic rate to assess cost of courtship. (Poster)

January 2008, San Antonio, TX, USA. Society for Integrative and Comparative Biology. Metabolic costs of courtship & mate searching using doubly-labeled water (DLW). (Poster)

#### **INVITED DEPARTMENTAL SEMINARS**

April 2018, University of Wollongong, Senescence and Sexual Conflict: A snake's tale and the painted dragon

September 2017, Australian National University. Sex and death in the Canadian Bush: Energetics, sexual conflict and sex-specific telomere dynamics in the red-sided garter snake.

November 2016, University of Tasmania, School of Biological Sciences. Sex and death in the Canadian Bush: Energetics, sexual conflict and sex-specific telomere dynamics in the red-sided garter snake.

November 2016, University of Sydney, School of Environmental and Life Sciences. Sex and ageing: reproductive tradeoffs mediated by ecology, energetics and oxidative stress.

August 2016, University of Wollongong, School of Biological Sciences. Sex and ageing: Inter- and intrasexual reproductive trade-offs mediated by ecology, energetics and oxidative stress.

November 2014, University of Sydney, Faculty of Veterinary Science. Patterns and Mechanisms: Postcopulatory sexual selection and sexual conflict in garter snake mating systems.

March 2014, University of Sydney, School of Biological Sciences. Patterns and Mechanisms: Postcopulatory sexual selection and sexual conflict in garter snake mating systems.

March 2012, George Fox University, Oregon, USA. Sperm competition in birds.

August 2009, University of Minnesota at Morris, USA. Vertebrate Biology: Energy and the Evolution of Mating Systems.

## CONFERENCE PRESENTATIONS GIVEN BY STUDENTS

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- January 2021, Online conference. Society for Integrative and Comparative Biology. Molecular basis for copulatory plug in garter snakes.
- January 2021, Online conference. Society for Integrative and Comparative Biology. Influence of testosterone on pre- and post-copulatory dimensions of male-male competition in the red-sided garter snake, *Thamnophis sirtalis parietalis*.
- July 2016, Gold Coast, QLD, Australia. Genetics Society of AustralAsia. Snakes, plugs and mating balls: Differences in telomere dynamics in red-sided garter snakes. (*PhD student, Nicky Rollings' oral presentation; Won The Mayo Prize for best PhD student presentation for the second year in a row*)
- July 2016, Katoomba, NSW, Australia. The Australasian Society for the Study of Animal Behaviour. Pre-Copulatory Sexual Selection in the Australian Painted Dragon. (*Honours student, Callum McDiarmid's oral presentation*)
- February 2016, Launceston, TAS, Australia. Australian Society of Herpetologists. Metabolism and ageing of the Australian painted dragon (*Ctenophorus pictus*). (*Masters student, Rasmus Johansson's oral presentation*)
- February 2016, Launceston, TAS, Australia. Australian Society of Herpetologists. Pre-Copulatory Sexual Selection in the Australian Painted Dragon. (*Honours student, Callum McDiarmid's oral presentation; Won best honours student presentation*)
- February 2016, Launceston, TAS, Australia. Australian Society of Herpetologists. Colour-coded telomere dynamics in a polymorphic lizard. (*PhD student, Nicky Rollings' oral presentation; Won best PhD student presentation*)
- June 2015, Adelaide, SA, Australia. Genetics Society of AustralAsia. Colour-coded telomere dynamics in a polymorphic lizard. (*PhD student, Nicky Rollings' oral presentation; Won The Mayo Prize for best PhD student presentation*)
- January 2015, Eildon, VIC, Australia. Australian Society of Herpetologists. Dragons and the fountain of youth: transgenerational epigenetics and their effects on life history traits in painted dragons (*Ctenophorus pictus*). (*PhD student, Nicky Rollings' oral presentation*)
- January 2015, Eildon, VIC, Australia. Australian Society of Herpetologists. What could make Australian painted dragon (*Ctenophorus pictus*) age faster? (visiting *PhD student, Joanna Sudyka's oral presentation*)

## SERVICE, MENTORSHIP AND SCIENTIFIC OUTREACH

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### PROFESSIONAL SERVICE

I served on the Board of Councillors of Australasian Society for the Study of Animal Behaviour (2015-2017)

Service as a peer-reviewer for over 26 journals, including *Current Zoology*; *PlosOne*; *BMC Evolutionary Biology*; *Biological Journal of the Linnaean Society*; *Canadian Journal of Zoology*; *Behaviour*; *Animal Behaviour*; *Behavioral Ecology*; *Behavioral Ecology and Sociobiology*; *Physiological and Biochemical Zoology*; *Integrative and Comparative Biology*; *The Science of Nature (formerly Naturwissenschaften)*; *The Anatomical Record*; *Copeia*; *Journal of Herpetology*; *Ethology, Ecology & Evolution*; *Conservation Physiology, Behaviour*; *Ecology and Evolution*; *Evolutionary Ecology*; *Molecular Ecology*; *Evolution*; *Evolutionary Applications*; *Journal of*



*Experimental Biology; Oecologia; Austral Ecology; Journal of Morphology*. Various book chapters.

External reviewer for University of Otago, New Zealand Honours thesis, Medical School

Examiner for seven Honours theses in the School of Life and Environmental Sciences, University of Sydney and the University of Wollongong. PhD committee member, University of Wollongong.

### **DEPARTMENTAL SERVICE**

Summer 2020-21: ERC representative on the UOW Environmental Research Centre User Group

Spring 2020: Served on the organizing committee for the TEFKAK Post-grad Conference at UOW

18 January 2019: **Invited guest lecture**, “Sex and ageing: Reproductive trade-offs mediated by ecology, energetics and oxidative stress”. University of Wollongong, Summer Scholars Seminar Series

2017 **Organized** the Ecology, Evolution and Environment cluster seminar series, School of Life and Environmental Sciences, University of Sydney

In 2010 I was awarded the **Zoology Department Award for Outstanding Graduate Student Service, Mentoring and Supervision** for activities including the following:

- 2006-11: I served on five separate tenure and promotion committees, and on one hiring committee as the graduate student representative for the Stress and Aging position in the Zoology department.
  - 2010-11: I served on the organizing committee for the annual Biology Graduate Student Symposium.
  - 2007-2008: I served as chair on the Graduate Student Invited Speaker organizing committee.
  - 2011: I designed and implemented an emergency power outage plan and coordinated with OSU electrical services department (I was asked to do this job because, before graduate school, I was a licensed electrician).
  - 2007: I organized and taught a graduate seminar on the Philosophy of Science.
  - 2009-2011: I was the lecturer of record for the Human Anatomy and Physiology (Z332) intensive summer lecture course (I gave four, two hour lectures each week for four weeks, 3 years in a row).
- 2007-2009: I completely overhauled the vertebrate biology lab course (Z372) from one that solely used rote memorization to identify local species to one that now uses local species to understand key concepts in ecology and evolution.

### **MEMBERSHIP OF PROFESSIONAL SOCIETIES**

International Society of Behavioural Ecology; Society for Integrative and Comparative Biology; Genetics Society of Australasia, Australasian society for the Study of Animal Behaviour, Australian Society of Herpetologists, Society for the Study of Amphibians and Reptiles; Australian and New Zealand Society for Comparative Physiology and Biochemistry.

### **MENTORING AND SUPERVISION**

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2020: Daniel Ritchie, Hons, University of Wollongong, to complete March 2021

2020: Daniel Ritchie, Advanced student project BIOL 364, University of Wollongong

2019: Sandra Chatham, Hons, University of Wollongong, First Class Hons

2019: Shannon Kaiser, Advanced student project BIOL 364, University of Wollongong

2019: Dr Nichole Rollings, PhD, University of Sydney  
2016: Callum McDiarmid, First Class Hons, University of Sydney  
2016: Rasmus Johansson, Masters with High Distinction, University of Gothenburg  
2008: Amelia Kerns, Hons, Oregon State University  
2007-2012: E. Bentz, M. Squire, K. Yabut, C. Lackey, A. Frasier; all Howard Hughes Medical Institute Research Fellows at Oregon State University

### **OUTREACH ACTIVITIES**

November 2016 Spectacular Science 2016, University of Sydney. Invited Guest Lecture “Animal Mating Systems”  
November 2016 Australian Herpetological Society, NSW. Invited Guest Lecture. “Sex and Death in the Canadian Bush: The sex lives of garter snakes”  
July 2015 Orange Anglican School, Orange, NSW. Presented my teaching module “The Evolution of Mating Systems” to two classes of elementary school students and helped to facilitate a “Leaf Litter Ecology” practical/  
Fall 2011 Invited Guest lecturer Evolution and Ecology Workshop, Energy and the Evolution of Mating systems, organised by OSU's STEPs (Scientists and Teachers in Education Partnerships) program to foster interest in the life sciences for high school students.  
2009-2011 Designed and Taught module: “Energy and the Evolution of Mating Systems” OSU’s Winter Wonderings Precollege Program for TAG (talented and gifted) students 6-8<sup>th</sup> grade organised by OSU's Office of Precollege Programs.  
2008-2010 Graduate student mentor for the Life Sciences Club at OSU (outdoor activities focused on understanding the biological world)  
2008-2009 Outreach: Reptile & Amphibian Presentations at Avery Nature House OR, USA

### **EXAMPLES OF THE MEDIA COVERAGE OF MY RESEARCH**

***“At the invasion front, male cane toads (*Rhinella marina*) have smaller testes.” (Biology Letters, 2019)***

Radio interview, ABC Kimberly, Ben Collins (24, July 2019)

<https://sydney.edu.au/news-opinion/news/2019/07/24/cane-toad-testes-smaller-at-the-invasion-front.html>

ABC News <https://www.abc.net.au/news/2019-07-24/queensland-cane-toads-have-the-biggest-testicles-in-australia/11339380>

Radio interview, ABC Townsville, Philip Staley (24, July 2019)

Radio interview, National Radio News, CSU Xanthe Gregory (25, July 2019)

Radio interview, ABC Illawarra the Drive show (25, July 2019)

Radio interview, ABC Perth the Drive show (25, July 2019)

*IFL Science*, <https://www.iflscience.com/plants-and-animals/testicularly-diminutive-toads-dominate-forefront-of-invasion-across-australia/>

***“Aging and the cost of maintaining coloration in the Australia painted dragon” (Biology Letters, 2016)***

*Cosmos* magazine <https://cosmosmagazine.com/biology/for-lizards-looking-good-can-be-lethal>

***“Age-related sex difference in body condition and telomere dynamics of red-side garter snakes” (Proceedings of the Royal Society B: Biological Sciences, 2017)***

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