

# JAMES URBAN VAN DYKE

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*Business Address:*

Charles Sturt University  
School of Environmental Sciences  
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## Professional Employment

- 2017-**            **Lecturer in Ecology**  
School of Environmental Sciences, Charles Sturt University  
Subject Coordinator: Principles of Ecology, Bio112  
Researcher in vertebrate biology and conservation
- 2015-2017**      **Postdoctoral Research Associate**  
School of Science and Health, University of Western Sydney  
*Supervisor:* Assoc Prof Ricky Spencer  
Investigate causes of turtle declines in the Murray River, Australia  
through mechanistic examinations of nutrition and reproductive  
physiological ecology  
Mentor PhD and honours students on projects in turtle physiological  
ecology and controls of invasive fox predation on turtle  
reproduction  
Develop and present lectures and practica in vertebrate zoology  
Develop new course units in new Masters of Coursework in  
environmental consulting degree program
- 2014-2015**      **Postdoctoral Research Associate**  
School of Biological Sciences, University of Sydney  
*Supervisor:* Prof Michael B. Thompson  
Investigate the function and evolution of placental nutrient and waste  
transport mechanisms in amniotes  
Mentor PhD and honours students on projects in reproductive  
physiology and evolution  
Develop and teach lectures in animal ecophysiology
- 2012-2014**      **NSF International Research Fellow**  
School of Biological Sciences, University of Sydney  
*Host:* Prof Michael B. Thompson  
Investigated the function and evolution of placental nutrient and waste  
transport mechanisms in amniotes  
Mentor PhD and honours students on projects in reproductive  
physiology and evolution

Develop and teach lectures in animal ecophysiology

**2011-2012**

**Postdoctoral Research Associate**

Department of Fish and Wildlife Conservation, Virginia Tech

*Supervisor:* Prof William A. Hopkins.

Led an investigation of the effects of the 2008 Kingston, TN coal fly ash spill on turtle reproduction and development

Collaborated with simultaneous investigations of the effects of ash derived trace elements on tree swallows (*Tachycineta bicolor*)

**2007-2010**

**Graduate Research Assistant**

Department of Biological Sciences, University of Arkansas

Assisted investigation of cascading effects of forest manipulation to rodent and timber rattlesnake populations

Designed, implemented, and analyzed collaborative physiological studies with other researchers

**2004-2007,  
2010**

**Teaching Assistant (11 semesters total)**

Department of Biological Sciences, University of Arkansas

*Primary instructor of record for laboratory course units*

Comparative Physiology

Human Anatomy

Human Physiology

Principles of Biology

Principles of Zoology

## Education

**2011**

PhD: University of Arkansas

Fayetteville, Arkansas

*Dissertation Title:* Vitellogenesis, placentation, and yolk utilization in reptiles: bioenergetic tests of resource allocation dogma

*Advisor:* Prof Steven J. Beaupre

**2004**

BS: Florida Institute of Technology

Melbourne, Florida

*Degree:* Options in General Biology, and Ecology, *Cum Laude*, 2004.

*Honors Thesis Title:* The role of thermal contrast in infrared-based defensive targeting by the copperhead, *Agkistrodon contortrix*

*Co-Advisors:* Profs Michael S. Grace and David J. Carroll

## Grants

**8. Bosch Small Equipment Grant (2016)**

*Project Title:* Denator Heat Stabilizer T1 system for shared use in the multi-user Bosch Molecular Biology Facility

*Funding Amount:* \$19,900 AUD (\$15,260 USD)

*Coauthored with:* Prof Chris Murphy, Prof Des Richardson, Prof Georges Grau, Prof Tailoi Chan-Ling, A/Prof Brett Hambly, Prof Rebecca Mason, Prof Jillian Kril, Dr Tara Speranza, Dr Damian Holsinger, Dr Greg Sutherland, Dr Auvro Mridha, Dr Laura

Lindsay, Dr Sam Dowland, Dr Katie Dixon, Dr Angelica Merlot, Dr Donna Lai, Prof Michael Thompson, Dr Camilla Whittington, Prof Manuel B. Graeber, Prof Richard Banati, Dr Buljan Vlado, Prof Peter Lay, Dr Aviva Levina, A/Prof Ravinder Kaur, Prof Colin Simpfendorfer

7. **Mohamed bin Zayed Species Conservation Fund (2016)**  
*Project Title:* The recovery of the imperilled Bellinger River Snapping Turtle, *Myuchelys georgesi*  
*Funding Amount:* \$16,000 USD  
*Coauthored with:* PhD student Kristen Petrov and Assoc Prof Ricky Spencer
6. **National Science Foundation International Research Fellowship (2012-2014)**  
*Project Title:* Testing hypotheses regarding function and evolution of placentotrophy, using viviparous skinks as a model  
*Funding Amount:* \$158,756 USD
5. **SICB Grant-in-aid-of-research recipient (2010)**  
*Funding Amount:* \$1,000 USD
4. **David Causey Grant-in-aid-of-research recipient, University of Arkansas (2007)**  
*Funding Amount:* \$500 USD
3. **American Society of Ichthyologists and Herpetologists travel grant recipient (2007)**  
*Funding Amount:* \$400 USD
2. **University of Arkansas conference travel grant recipient (2005-2007, 2009-2010)**  
*Funding Amount:* \$1,000 USD each
1. **Sigma Xi grants-in-aid of research recipient (2003, 2007)**  
*Funding Amounts:* \$650 USD each

## Honors

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|-------------------|---|
| <b>2006</b>       | Delbert Swartz Award in Biology, University of Arkansas   |
| <b>2004</b>       | Second place in the Beta Beta Beta Biennial National Convention Frank G. Brooks award for excellence in student research, 2004    |
| <b>2004</b>       | First place in the Beta Beta Beta District 1 Frank G. Brooks award for excellence in student research, 2004                       |
| <b>2003, 2004</b> | Undergraduate research award for outstanding research in biological sciences, Florida Institute of Technology                     |
| <b>2000-2004</b>  | National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology (NCSSSMST) Undergraduate Scholarship |
| <b>2000</b>       | Valedictorian, Wilson Memorial High School, Fishersville, Virginia  |

**Summer 1998** One of five high school students in the state of Virginia selected for the summer Governor's School at Virginia Institute of Marine Science, Gloucester, Virginia.

### Refereed Publications (\*student coauthor, †invited manuscript)

20. Spencer, R.J., **J.U. Van Dyke**, and M.B. Thompson. *In Press*. Critically evaluating best management practices for preventing freshwater turtle extinctions. *Conservation Biology*. Accepted 20 March 2017
19. \*McGlashan, J.K., M.B. Thompson, **J.U. Van Dyke**, and R.J. Spencer. 2017. Thyroid hormones reduce incubation period without developmental or metabolic costs in Murray River short-necked turtles (*Emydura macquarii*). *Physiological and Biochemical Zoology*. 90(1): 34-46.
17. Van Dyke, J.U., \*C.M. Bodinof Jachowski, D.A. Steen, B.P. Jackson, and W.A. Hopkins. 2017. Spatial differences in trace element bioaccumulation in turtles exposed to a partially remediated coal fly-ash spill. *Environmental Toxicology and Chemistry*. 36(1): 201-211.
18. Spencer, R.J., **J.U. Van Dyke**, and M.B. Thompson. 2016. The Ethological Trap: Functional and numerical responses of highly efficient invasive predators driving prey extinctions. *Ecological Applications*. 26(7): 1969-1983.
16. \*Dormer, J., J.M. Old, **J.U. Van Dyke**, and R.J. Spencer. 2016. Incubation temperature affects development order of morphological features and staging criteria in turtle embryos. *Journal of Zoology*. 299(4): 284-294.
15. Van Dyke, J.U., L.A. Lindsay, C.R. Murphy, and M.B. Thompson. 2015. Carbonic anhydrase II is found in the placenta of a viviparous, matrotrophic lizard and likely facilitates embryo-maternal CO<sub>2</sub> transport. *Journal of Experimental Zoology B: Molecular and Developmental Evolution*. 324: 636-646.
14. †\*Griffith, O.W., D.G. Blackburn, M.C. Brandley, **J.U. Van Dyke**, C.M. Whittington, and M.B. Thompson. 2015. Ancestral state reconstructions require biological evidence to test evolutionary hypotheses: A case study examining the evolution of reproductive mode in squamate reptiles. *Journal of Experimental Zoology B: Molecular and Developmental Evolution*. 324: 493-503.
13. Steen, D.A., **J.U. Van Dyke**, B.P. Jackson, and W.A. Hopkins. 2015. Reproduction and hatchling performance in freshwater turtles associated with a remediated coal fly-ash spill. *Environmental Research*. 138: 38-48.
12. Van Dyke, J.U., D.A. Steen, B.P. Jackson, and W.A. Hopkins. 2014. Maternal transfer and embryonic assimilation of trace elements in freshwater turtles after remediation of a coal fly-ash spill. *Environmental Pollution*. 194: 38-49.
11. Van Dyke, J.U., \*O.W. Griffith, and M.B. Thompson. 2014. High food abundance permits the evolution of placentotrophy: evidence from a placental lizard, *Pseudemoia entrecasteauxii*. *The American Naturalist*. 184(2): 198-210.

10. Steen, D.A., \*B.C. Hopkins, **J.U. Van Dyke**, and W.A. Hopkins. 2014. Prevalence of ingested fish hooks in freshwater turtles from five rivers in the southeastern United States. *PLoS One*. 9(3): e91368.
9. †Van Dyke, J.U., M.C. Brandley, and M.B. Thompson. 2014. The evolution of viviparity: molecular and genomic data from squamate reptiles advance understanding of live birth in amniotes. *Reproduction*. 147(1): R15-R26.
8. Van Dyke, J.U., M.L. Beck, B.P. Jackson, and W.A. Hopkins. 2013. Interspecific differences in egg production affect egg trace element concentrations after a coal fly-ash spill. *Environmental Science and Technology*. 47(23): 13763-13771.
7. Van Dyke, J.U., W.A. Hopkins, and B.P. Jackson. 2013. Influence of relative trophic position and carbon source on selenium bioaccumulation in turtles from a coal fly-ash spill site. *Environmental Pollution*. 182: 45-52.
6. \*Griffith, O.W., **J.U. Van Dyke**, and M.B. Thompson. 2013. No implantation in an extrauterine pregnancy of a placentotrophic reptile. *Placenta*. 34(6): 510-511.
5. Van Dyke, J.U., S.J. Beaupre, and D.L. Kreider. 2012. Snakes allocate amino acids acquired during vitellogenesis to offspring: are capital and income breeding consequences of variable foraging success? *Biological Journal of the Linnean Society*. 106: 390-404.
4. Van Dyke, J.U. and S.J. Beaupre. 2012. Stable isotope tracer reveals that viviparous snakes transport amino acids to offspring during gestation. *The Journal of Experimental Biology*. 215(5): 760-765.
3. Van Dyke, J.U. and S.J. Beaupre. 2011. Bioenergetic components of reproductive effort in viviparous snakes: Costs of vitellogenesis exceed costs of pregnancy. *Comparative Biochemistry and Physiology, A*. 160: 504-515.
2. Van Dyke, J.U., M.V., Plummer, and S.J. Beaupre. 2011. Residual yolk energetics and postnatal shell growth in smooth softshell turtles, *Apalone mutica*. *Comparative Biochemistry and Physiology, A*. 158: 37-46.
1. Van Dyke, J.U. and M.S. Grace. 2010 The role of thermal contrast in infrared-based defensive targeting by the copperhead, *Agkistrodon contortrix*. *Animal Behaviour*. 79: 993-999.

### Invited Book Chapters

2. Beaupre, S.J., J. Agugliaro, **J.U. Van Dyke**, and F. Zaidan III. *In Press*. Annual energy budgets of the Timber Rattlesnake: advancements, refinements, and open questions. *Biology of the Rattlesnakes*, Vol. 2. Eds M.J. Dreslik, W.K. Hayes, S.J. Beaupre, and S.P. Mackessy. ECO Herpetological, Rodeo, NM.

1. Van Dyke, J.U. 2014. Cues for reproduction in squamate reptiles. Pp 109-143 in *Lizard Phylogeny and Reproductive Biology*. Eds J.L. Rheubert, D.S. Siegel, and S.E. Trauth. CRC Press, Boca Raton, FL.

### Popular Science Articles (\*student coauthor)

1. Spencer, R.-J., \*C. Santori, **J.U. Van Dyke**, and M.B. Thompson. 2017. Millions of rotting fish: turtles and crays can save us from Carpageddon. *The Conversation*. <https://theconversation.com/millions-of-rotting-fish-turtles-and-crays-can-save-us-from-carpageddon-75297>.

### Manuscripts in Review (\*student coauthor)

1. Spencer, R.J., **J.U. Van Dyke**, \*J. Dormer, and F.J. Janzen. Adaptive significance of genotypic sex determination in turtles. *Journal of Evolutionary Biology*

### Natural History Notes

6. Manning, G.J., **J.U. Van Dyke**, and B. Birchfield. 2007. Geographic distribution. *Hyla cinerea*. Franklin Co., AR. *Herpetological Review*. 38(4): 475.
5. Van Dyke, J.U., G.J. Manning, and B. Birchfield. 2007. Geographic distribution. *Hyla cinerea*. Crawford Co., AR. *Herpetological Review*. 38(4): 475.
4. Van Dyke, J.U. and M.S. Grace. 2005. Natural History Note: Defensive behavior of *Elaphe guttata guttata*. *Herpetological Review*. 36(2): 194.
3. Grace, M.S. and **J.U. Van Dyke**. 2004. Geographic distribution. *Ramphotyphlops braminus*. *Herpetological Review*. 35(3): 293-294.
2. Van Dyke, J.U. 2004. Geographic distribution. *Seminatrix pygaea*. Okeechobee Co., FL. *Herpetological Review*. 35(1):84.
1. Van Dyke, J.U. 2004. Geographic distribution. *Hemidactylus mabouia*. Brevard Co., FL. *Herpetological Review*. 35(1):82.

### Invited Oral Seminars

6. Van Dyke, J.U. 2015. Effects of baiting on fox predation of turtle nests. Winton Wetlands Restoration Science Forum. Winton Wetlands, VIC, Australia. August, 2015.
5. Van Dyke, J.U. Evolution and ecotoxicology of reproduction in reptiles. University of Virginia Ecology and Evolutionary Biology Seminar Series. Charlottesville, VA, USA. August, 2014.
4. Van Dyke, J.U. Convergent evolution of pit organs in snakes: costs and benefits of a novel sensory system. SSAR Infrared Imaging Symposium. 2014 Joint Meeting of Ichthyologists and Herpetologists. Chattanooga, Tennessee, USA. August, 2014.

3. Van Dyke, J.U. To breed or not to breed: transcriptomic approaches for determining how reptiles decide to reproduce. Herpetologist's League Lizard and Tuatara Reproduction Symposium. 2014 Joint Meeting of Ichthyologists and Herpetologists. Chattanooga, Tennessee, USA. August, 2014.
2. Van Dyke, J.U. Evolution and ecotoxicology of reproduction in reptiles. University of Sydney School of Biological Sciences Seminar. Sydney, NSW, Australia. September, 2013.
1. Van Dyke, J.U. Vitellogenesis and placentotrophy in reptiles: bioenergetic tests of resource allocation dogma. Virginia Tech Ecology and Evolutionary Biology Seminar Series. Blacksburg, Virginia. September, 2011.

### Oral Papers (\*Student Coauthor)

23. \*Petrov, K., J.U. Van Dyke, \*N. Malkiewicz, \*J. Lewis, M.B. Thompson, and R.-J. Spencer. Diet generalization and specialization in a freshwater turtle (*Emydura macquarii*). Annual Meeting of the Australian and New Zealand Society for Comparative Physiology and Biochemistry, Richmond, New South Wales, Australia. December, 2016.
22. Van Dyke, J.U., M. Kelly, K. Petrov, F. Loudon, and R.-J. Spencer. The mechanistic bases for maternal effects in turtles. Annual Meeting of the Australian and New Zealand Society for Comparative Physiology and Biochemistry, Richmond, New South Wales, Australia. December, 2016.
21. Van Dyke, J.U. and R.-J. Spencer. It's a trap! Turtle nest predation by foxes does not vary with nest density. 40<sup>th</sup> Meeting of the Australian Society of Herpetologists. Launceston, Tasmania, Australia. February, 2016.
20. Van Dyke, J.U., \*J. Dudley, \*O.W. Griffith, C.R. Murphy, and M.B. Thompson. The amino acid transporter SLC7A8 is a placental nutrient transporter in *Pseudemoia entrecasteauxii*. 40<sup>th</sup> Meeting of the Australian Society of Herpetologists. Launceston, Tasmania, Australia. February, 2016.
19. Van Dyke, J.U., \*J. Dudley, \*O.W. Griffith, C.R. Murphy, and M.B. Thompson. How to make a baby skink: the evolution of placental nutrient transport. 2015 Joint Meeting of Ichthyologists and Herpetologists. Reno, Nevada, USA. July, 2015.
18. Van Dyke, J.U., \*J. Dudley, \*O.W. Griffith, C.R. Murphy, and M.B. Thompson. How to make a baby lizard: the role of placental nutrient transporters. 39<sup>th</sup> Meeting of the Australian Society of Herpetologists. Eildon, Victoria, Australia. January, 2015.
17. \*Griffith, O.W., M.C. Brandley, **J.U. Van Dyke**, K. Belov, and M.B. Thompson. Parent offspring conflict and the evolution of placentae in reptiles. 39<sup>th</sup> Meeting of the Australian Society of Herpetologists. Eildon, Victoria, Australia. January, 2015.
16. Van Dyke, J.U., L.A. Lindsay, C.R. Murphy, and M.B. Thompson. Placental Carbonic Anhydrase II: a multifunctional waste disposal mechanism in a viviparous lizard. Annual Meeting of the Australian and New Zealand Society for Comparative Physiology and Biochemistry, Armidale, New South Wales, Australia. November, 2014.

15. Van Dyke, J.U., \*O.W. Griffith, and M.B. Thompson. Hungry mothers' ability to abort and cannibalize their offspring enables the evolution of placentotrophy in a lizard. 2014 Joint Evolution Meeting. Raleigh, North Carolina, USA. June, 2014.
14. Van Dyke, J.U., \*O.W. Griffith, and M.B. Thompson. High food abundance permits the evolution of placentotrophy: evidence from a placental lizard, *Pseudemoia entrecasteauxii*. 38<sup>th</sup> Meeting of the Australian Society of Herpetologists. Canberra, Australian Capital Territory, Australia. January, 2014.
13. Van Dyke, J.U., \*O.W. Griffith, and M.B. Thompson. Conditions favouring the evolution of placentotrophy in a viviparous skink: hungry mums and infanticidal cannibalism. Annual Meeting of the Australian and New Zealand Society for Comparative Physiology and Biochemistry, Melbourne, Victoria, Australia. November, 2013.
12. Van Dyke, J.U., \*O.W. Griffith, and M.B. Thompson. Conditions favoring the evolution of placental provisioning in a viviparous skink: hungry moms and infanticidal cannibalism. Joint Meeting of Ichthyologists and Herpetologists. Albuquerque, New Mexico, USA. July, 2013.
11. Van Dyke, J.U., M.L. Beck, W.A. Hopkins, and B.P. Jackson. Egg trace element concentrations are less variable in turtles than in birds at a coal ash spill site. 37<sup>th</sup> Meeting of the Australian Society of Herpetologists. Point Wolstoncroft, New South Wales, Australia. January, 2013.
10. Van Dyke, J.U., W.A. Hopkins, and B.P. Jackson. Influence of trophic ecology on selenium exposure in turtles from a river system impacted by a coal fly-ash spill. World Congress of Herpetology. Vancouver, British Columbia, Canada. August, 2012.
9. Beck, M.L., **J.U. Van Dyke**, W.A. Hopkins, and D. Hawley. Evaluation of sublethal effects of the Kingston, TN ash spill on tree swallows and turtles. TVA-Kingston Fly Ash Release Environmental Research Symposium. Harriman, Tennessee. August, 2011. *Team Presentation with M.L. Beck*
8. Beupre, S.J., J. Agugliaro, and **J.U. Van Dyke**. Annual energy budgets of the timber rattlesnake: advancements, refinements, and open questions. Biology of the Rattlesnakes. Tucson, Arizona. July, 2011.
7. Van Dyke, J.U. and S.J. Beupre. Estimating reproductive effort in viviparous snakes: metabolic costs of vitellogenesis. 2010 Joint Meeting of Ichthyologists and Herpetologists. Providence, Rhode Island. July, 2010.
6. Van Dyke, J. U., M.V. Plummer, and S.J. Beupre. Examination of residual yolk utilization in hatchling smooth softshell turtles, *Apalone mutica*. 2010 Annual Meeting of the Society for Integrative and Comparative Biology. Seattle, Washington. January, 2010.
5. Van Dyke, J.U., M.V. Plummer, and S.J. Beupre. Effects of yolkectomy on metabolism and growth of neonate smooth softshell turtles (*Apalone mutica*) from central Arkansas. 2007 Joint Meeting of Ichthyologists and Herpetologists. St. Louis, Missouri. July, 2007.



4. Grace, M.S. and **J.U. Van Dyke**. Infrared imaging in pitvipers: complex behavior from a thermal contrast detector. 2006 Society of Integrative and Comparative Biology. Orlando, Florida. January, 2006.
3. Van Dyke, J.U. The role of thermal contrast in infrared-based targeting by copperheads. Beta Beta Beta 2004 Biennial National Convention. Grand Junction, Colorado. May, 2004.
2. Van Dyke, J.U. The role of thermal contrast in infrared-based targeting by copperheads. Beta Beta Beta 2004 southeastern regional district 1 convention. Memphis, Tennessee. April, 2004.
1. Van Dyke, J.U. and M.S. Grace. Thermal contrast and infrared predatory targeting in copperheads. Florida Academy of Sciences. Orlando, Florida. March, 2004.

### Poster Presentations (\*Student Coauthor)

5. Steen, D.A., \*B. Hopkins, **J. Van Dyke**, and W. Hopkins. Prevalence of ingested fish hooks in freshwater turtles from five rivers in the southeastern United States. 2014 Joint Meeting of Ichthyologists and Herpetologists. Chattanooga, Tennessee, USA. August, 2014.
4. Van Dyke, J.U. and S.J. Beaupre. Enriched stable isotope tracers indicate income allocation in putative capital breeding snakes. 2010. Joint Meeting of Ichthyologists and Herpetologists. Providence, Rhode Island. July, 2010.
3. Van Dyke, J.U., M.V. Plummer, and S.J. Beaupre. Embryonic and hatchling metabolism of smooth softshell turtles (*Apalone mutica*). 2006 Joint Meeting of Ichthyologists and Herpetologists. New Orleans, Louisiana. July, 2006.
2. Grace, M.S. and **J.U. Van Dyke**. The role of thermal contrast in infrared-based targeting by copperheads. 2005 Joint Meeting of Ichthyologists and herpetologists. Tampa Bay, Florida. July, 2005.
1. Van Dyke, J. U. and M. S. Grace. The role of thermal contrast in infrared-based predatory targeting by crotaline snakes. Florida Academy of Sciences. Orlando, Florida. March, 2003.

### Government Reports

5. Steen, D.A., **J.U. Van Dyke**, and W.A. Hopkins. 2013. Freshwater turtle abundance, morphology and sex ratio in relation to a remediated coal fly-ash spill. Pp 111-129 in W.A. Hopkins, M.L. Beck, J.U. Van Dyke, D.A. Steen, B.P. Jackson, and D.M. Hawley. Annual Report to the Tennessee Valley Authority: Effects of the remediated coal ash spill in Kingston, TN on aquatic and terrestrial consumers.
4. Van Dyke, J.U., W.A. Hopkins, and B.P. Jackson. 2013. Influence of relative trophic position and carbon source on selenium bioaccumulation in turtles from a coal fly-ash spill site. Pp 91-110 in W.A. Hopkins, M.L. Beck, J.U. Van Dyke, D.A. Steen, B.P.

- Jackson, and D.M. Hawley. Annual Report to the Tennessee Valley Authority: Effects of the remediated coal ash spill in Kingston, TN on aquatic and terrestrial consumers.
3. Van Dyke, J.U., M.L. Beck, B.P. Jackson, W.A. Hopkins. 2013. Interspecific differences in egg production affect egg trace element concentrations after a coal fly-ash spill. Pp 69-90 in W.A. Hopkins, M.L. Beck, J.U. Van Dyke, D.A. Steen, B.P. Jackson, and D.M. Hawley. Annual Report to the Tennessee Valley Authority: Effects of the remediated coal ash spill in Kingston, TN on aquatic and terrestrial consumers.
  2. Van Dyke, J.U. and W.A. Hopkins. 2012. Spatial effects of the Kingston, TN coal ash spill on trace element exposure, capture rates, and body sizes of adult turtles. Pp 5-24 in W.A. Hopkins, M.L. Beck, J.U. Van Dyke, and D.M. Hawley. Annual Report to the Tennessee Valley Authority: Effects of the remediated coal ash spill in Kingston, TN on aquatic and terrestrial consumers.
  1. Van Dyke, J.U. and W.A. Hopkins. 2012. Effects of exposure to coal fly ash on maternal transfer of trace elements and clutch, egg, and hatchling body sizes in turtles. Pp 25-49 in W.A. Hopkins, M.L. Beck, J.U. Van Dyke, and D.M. Hawley. Annual Report to the Tennessee Valley Authority: Effects of the remediated coal ash spill in Kingston, TN on aquatic and terrestrial consumers.

## Teaching Experience

### Unit Coordinator Experience

2017- “Principles of Ecology”, Bio 112, Charles Sturt University

### Curriculum Development Experience

- Western Sydney University: Developed two new course units for new Masters of Research Degree program, to be first offered in spring, 2017
  - “Environmental Monitoring and Data Analysis”
  - “Natural Resource Management Tools”
- University of Arkansas: member of curriculum committee for Biological Sciences
  - Surveyed laboratory practica instructors (graduate teaching assistants) about how prepared their students were from prior courses
  - Presented results to committee and helped committee adjust the order in which undergraduates were offered courses during their degrees
  - Improved structure of undergraduate coursework

### Lecturing Experience

- Developed and presented independent lectures on invitation from course/unit coordinator
- Developed and marked/graded midterm and final exam questions based on my lectures
- Teaching effectiveness evaluated exceptionally high by students (2016, Western Sydney University)

2015-2016 “Reptiles”, “Amphibians”  
Unit: Vertebrate Biodiversity, Western Sydney University

*Also developed and led laboratory practicum covering amphibians and reptiles for this unit*

- 2014-2015** “Evolution of Reproductive Allocation”  
Unit: Animal Ecophysiology, University of Sydney
- 2008-2009** “Amphibians and Reptiles”  
Course: Zoology, University of Arkansas
- 2006** “Sensory Physiology”  
Course: Animal Comparative Physiology, University of Arkansas

**Unit Coordinator for Self-contained Laboratory Course Units**

Department of Biological Sciences, University of Arkansas

- All course units administered independently from co-requisite lecture courses
- Developed and led lectures and practical laboratory exercises for 2-3 course sections per semester (20 students each)
- Each section met for one three-hour session per week throughout semester
- Developed, administered, marked, and tallied student learning evaluations throughout each course (quizzes, exams, written reports, worksheets)
- Course units:
  - Human Anatomy (Autumn, 2004)
  - Principles of Biology (Autumn, 2004; Autumn, 2010)
  - Comparative Physiology (Autumn, 2005, 2006)
  - Human Physiology (Spring, 2005, 2006, 2010)
  - Principles of Zoology (Summer, 2005, 2006, 2010)

## Students Supervised

- 2017-** Co-supervised two PhD students at the University of Sydney
- Claudia Santori
  - Alice Buddle
- 2016-** Co-supervised one PhD student at Western Sydney University
- Kristen Petrov
- Co-supervised one Masters of Research student at Western Sydney University
- Heather Cameron
- Supervised three undergraduate students on 3<sup>rd</sup>-year advanced research projects at Western Sydney University
- Jessica Lewis
  - Natasha Malkiewicz
  - Kathleen O’Keefe
- 2015** Co-supervised one honours student at Western Sydney University
- Kristen Petrov (**1<sup>st</sup> Class marks and University Medal**; honours thesis title: “Water regulation and the dispersal of agricultural nutrients: Impacts on turtle competition in the Murray River, Australia.”)

- 2014** Supervised three undergraduate students on 3<sup>rd</sup>-year advanced research projects at the University of Sydney
- Madeline Carr
  - Ashwin Cassell
  - Rachel Riu Qi Hu
- 2013** Supervised two undergraduate students on 3<sup>rd</sup>-year advanced research projects at the University of Sydney
- Kevin Hendrawan
  - Melanie Vo Hoang
- 2012-2015** Co-supervised one PhD student at the University of Sydney
- Oliver Griffith (PhD Thesis Title: “Mechanisms of placental evolution: the genetics and physiology of pregnancy in lizards”)
- 2005-2006** Trained three undergraduate students in field radio telemetry for their summer research projects funded by on an EPSCoR Outreach grant to Steven J. Beaupre and Douglas Rhoads, University of Arkansas
- Sara Danzi, Northeastern State University
  - Travis Lee, Northeastern State University
  - Branden Williams, University of Arkansas-Pine Bluff

## Professional Service

- 2017-Present** Associate Editor, *Journal of Herpetology*
- 2017** Invited expert, Global Sea Turtle Nesting Environment Summit. Raine Island Recovery Project, Queensland Parks & Wildlife Service. Brisbane, Queensland, May 2017.
- 2017** Invited expert, Gunbower Forest and Gunbower Creek Seasonal Watering Planning Meeting. North Central Catchment Management Authority. Koondrook, Victoria, February 2017.
- 2017** Organizer and speaker at the 2017 “Turtles in Crisis” Forum Canberra, Australian Capital Territory, to inform stakeholders of current progress on our project to prevent declines in Murray River turtles. February, 2017.
- 2016** Session Chair, 40<sup>th</sup> Meeting of the Australian Society of Herpetologists. Launceston, Tasmania, Australia.
- 2015** Organizer and speaker at the 2015 Linkage Partners Forum Murray River Turtle Project in Calperum Station, South Australia, to inform stakeholders of current progress on our project to prevent declines in Murray River turtles. June, 2015.
- 2015** Session Chair, Joint Meeting of Ichthyologists and Herpetologists, Reno, Nevada

- 2014-2015** Elected member of the nominating committee of the American Society of Ichthyologists and Herpetologists
- 2014** Judge for Stoye Award for Genetics, Morphology, and Developmental Biology, American Society of Ichthyologists and Herpetologists, Joint Meeting of Ichthyologists and Herpetologists, Chattanooga, Tennessee
- 2014** PhD Thesis Assessor for the University of Sydney School of Medical Sciences, Sydney, New South Wales
- 2013-Present** Honours Thesis Assessor for the University of Sydney School of Biological Sciences, Sydney, New South Wales
- 2013** Judge for Stoye Award for Herpetology Posters, American Society of Ichthyologists and Herpetologists, Joint Meeting of Ichthyologists and Herpetologists, Albuquerque, New Mexico
- Session Chair, Postgraduate Research Showcase, University of Sydney School of Biological Sciences, Sydney, New South Wales
- 2012** Judge for Stoye Award of Ecology and Ethology, American Society of Ichthyologists and Herpetologists, World Congress of Herpetology, Vancouver, British Columbia
- 2010** Session Chair, Joint Meeting of Ichthyologists and Herpetologists, Providence, Rhode Island
- 2008-2010** Graduate student representative to University of Arkansas Biosafety Committee
- 2008** Graduate student representative to University of Arkansas Department of Biological Sciences Faculty Search Committee
- 2006-2007** Graduate student representative to University of Arkansas Institutional Animal Care and Use Committee
- 2007** Coordinator of American Society of Ichthyologists and Herpetologists annual graduate student book raffle (co-coordinated with Lara E. Douglas)
- 2006-2010** Graduate student representative to University of Arkansas Department of Biological Sciences Curriculum Committee
- 2006-2007** Vice President of University of Arkansas Biology Graduate Student Association

### **Citizen Science, Community Service, and Outreach**

- 2016-Present** Elected to general committee of the Australian Herpetological Society
- Coordinate speakers with scientific backgrounds

- Provide public outreach and links to the professional Australian Society of Herpetologists
  - Coordinate citizen science efforts by helping non-professionals publish natural history observations in scientific literature and linking citizen volunteers with ongoing research efforts
- 2016** Guest speaker at “Our Living River”, Field of Mars Reserve, Lane Cove, NSW, Australia, November 2016
- 2016** Guest speaker at the Hawkesbury Herpetological Society, Penrith, NSW, Australia, September 2016
- 2016** K-12 educator, National Science Week, Western Sydney University, Richmond, NSW, Australia, August 2016
- 2015-2017** Present results of ARC linkage project on turtle conservation to steering committee of North Central Catchment Management Authority, at quarterly meetings.
- 2015-Present** Invited member of the Taxonomic Review Committee for Herpmapper (<http://www.herpmapper.org/about>)
- 2014** Guest speaker at the Australian Herpetological Society, Sydney, Australia, February 2014
- 2010** Coordinator of snake education and research seminar for Lake Fort Smith State Park, Mountainburg, Arkansas
- 2009** Guest speaker at the Dallas-Fort Worth Herpetological Society, Dallas, Texas, February 2009
- 2006** Coordinator of snake education seminar for 4H club, Fayetteville, Arkansas, June 2006
- 2005-2010** Coordinator of University of Arkansas, Biological Sciences outreach at Springfest, Fayetteville, Arkansas, 2005-2010

### Featured in Popular Media

5. Heuzenroeder, C. 2017. “Researchers working to help ancient River Murray turtles survive humans”, Australian Broadcasting Corporation, Riverland. (<http://www.abc.net.au/news/2017-02-03/can-river-murray-turtles-survive-humans/8236082>)
4. “Riverland Turtle Talks”, featured on “Riverland Today with Narelle Graham”, Australian Broadcasting Corporation, Adelaide, Broadcast on 21 June 2015 ([http://blogs.abc.net.au/sa/2015/06/riverland-turtle-talks-.html?site=riverland&program=riverland\\_mornings](http://blogs.abc.net.au/sa/2015/06/riverland-turtle-talks-.html?site=riverland&program=riverland_mornings)).

3. “Turtle Tracking at Riverland's Lake Bonney Barmera”, featured on “Riverland Today with Narelle Graham”, Australian Broadcasting Corporation, Adelaide, Broadcast on 26 March 2015 (<http://blogs.abc.net.au/sa/2015/03/turtle-tracking-at-riverlands-lake-bonney-barmera.html>).
2. Griffith, O.W. 2015. “Lizards help us find out which came first: the baby or the egg?” *The Conversation* (<https://theconversation.com/lizards-help-us-find-out-which-came-first-the-baby-or-the-egg-29954>).
1. “The Sound of Rattlesnakes in the Classroom”, featured on “All Things Considered”, National Public Radio, Broadcast on 5 September 2007, with *Jessica Nolan* (<http://www.npr.org/templates/story/story.php?storyId=14191416>).

### Invited Journal Referee

Animal Conservation, Australian Journal of Zoology, Biology Letters, Comparative Biochemistry and Physiology A, Copeia, Ecological Indicators, Ecotoxicology and Environmental Safety, Environmental Science & Technology, Functional Ecology, Herpetologica, Herpetological Conservation and Biology, Herpetological Review, Journal of Comparative Physiology B, Journal of Environmental Chemistry and Ecotoxicology, Journal of Experimental Biology, Journal of Experimental Zoology A, Journal of Herpetology, Journal of Zoology, Micron, New Zealand Journal of Zoology, Oecologia, Physiological and Biochemical Zoology, PLoS ONE, Rapid Communications in Mass Spectrometry, Science of the Total Environment, The American Naturalist, Wildlife Research

### Current Professional Memberships

- American Society of Ichthyologists and Herpetologists
- American Society of Naturalists
- Australian Society of Herpetologists
- Ecological Society of America
- Herpetologists' League
- Society for the Study of Amphibians and Reptiles
- Society of Integrative and Comparative Biologists

### Technical Skills

#### Animal Physiology and Ecology

- Animal Respirometry
- Bomb Calorimetry
- Field Collections
- Field Radio Telemetry
- Lipid Extraction
- Radioimmunoassay
- Remote Photography
- Ultrasonography

#### Developmental/Molecular Biology

- Brightfield and Fluorescent Microscopy
- Histology
- Immunohistochemistry and Immunofluorescence
- Mass Spectrometry
- Proteomics
- Transcriptomics
- Western Blotting

**General Skills**

- Captive Animal Husbandry
- Database Management
- PADI Open Water SCUBA certified (1998, 2014)
- Preservation of Museum Specimens
- Statistical Programming (SAS)
- US Fish and Wildlife Certified Motorboat Operator (2011)



**James U. Van Dyke - References**

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**PhD Advisor**

Steven J. Beaupre, PhD  
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**Post-doctoral Supervisor (2011-2012)**

William A. Hopkins, PhD  
Professor  
Wildlife Ecotoxicology and Physiological Ecology  
Department of Fish and Wildlife Conservation  
Virginia Polytechnic Institute and State University  
106 Cheatham Hall, Blacksburg, VA 24061  
USA  
Phone: 1-540-231-7292  
Email: [hopkinsw@vt.edu](mailto:hopkinsw@vt.edu)

**Post-doctoral Supervisor (2012-)**

Michael B. Thompson, PhD  
Academic Director, Life Earth and Environmental Sciences (LEES) Project  
Professor in Zoology  
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**Post-doctoral Supervisor (2015- )**

Ricky-John Spencer, PhD  
Associate Professor of Ecology  
School of Science & Health  
Hawkesbury Institute for the Environment  
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