

CURRICULUM VITAE

Amanda Marie Sparkman
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CURRENT POSITION

Associate Professor Biology Department, Westmont College January 2012-present

PROFESSIONAL PREPARATION

Post-doctorate	Trent University	2009-2011
Graduate	Iowa State University	Ecology & Evolution Ph.D., 2009
Undergraduate	Westmont College	Biology BA, 2003 (Summa Cum Laude)
	Westmont College	English BA, 2003

PREVIOUS APPOINTMENTS

2009-2011	Post-doctoral Researcher, Department of Biology, Trent University
2007-2008	Teaching Assistant, Human Anatomy and Physiology, Department of Biology, Iowa State University
Fall 2006	Research Assistant, Gerontology Fellow, Department of Ecology, Evolution, and Organismal Biology, Iowa State University
Spring 2006	Teaching Assistant, General and Comparative Endocrinology, Department of Biology, Iowa State University
2004-2005	Research Assistant, Biotechnology Fellow, Department of Ecology, Evolution, and Organismal Biology, Iowa State University
2003-2004	Biology Laboratory Coordinator, Department of Biology, Westmont College

COURSES TAUGHT

BIO 006 General Biology II	BIO 120 Behavioral Ecology
BIO 125 General Ecology	BIO 131 Evolution
BIO 141 Herpetology/Ornithology	BIO 195 Seminar in Biological Literature
BIO 196 Seminar in Bioethics	LS 012 Introduction to Life Sciences

PUBLICATIONS

Hoekstra, L. A., Schwartz, T. S., Sparkman, A. M., Miller, D. A., & Bronikowski, A. M. (2019). The untapped potential of reptile biodiversity for understanding how and why animals age. *Functional Ecology*, <https://doi.org/10.1111/1365-2435.13450>.

Waits, D. S., Simpson, D. Y., Sparkman, A. M., Bronikowski, A. M., & Schwartz, T. S. (2019). The utility of reptile blood transcriptomes in molecular ecology. *Molecular Ecology Resources*, 20(1):308-317.

Sparkman A.M., Clark A.D., Brummett L.J., Chism K.R., Combrink L.C., Kabey, N.M., Schwartz T.S. (2018). Convergence in reduced body size, head size, and blood glucose in three island reptiles. *Ecology and Evolution*, 8(12), 6169-6182.

Sparkman A.M., Chism K.R., Bronikowski A.M., Brummett, L.J., Combrink, L.C., Davis, C.L., Holden, K.G., Kabey, N.M., Miller, D.A.W. (2018). Use of field-portable ultrasonography reveals differences in developmental phenology and maternal egg provisioning in two sympatric viviparous snakes. *Ecology and Evolution*, 8(6), 3330-3340.

Sparkman A.M., Howe S., Hynes S., Hobbs B., Handal K. (2018). Parallel behavioral and morphological divergence in fence lizards on two college campuses. *PLoS ONE*, 13(2): e0191800.

Gangloff, E.J., Sparkman, A.M. and Bronikowski, A.M. (2017). Among-individual heterogeneity in maternal behaviour and physiology affects reproductive allocation and offspring life-history traits in the garter snake *Thamnophis elegans*. *Oikos*. 10.1111/oik.04204

Gangloff, E.J., Chow, M., Leos-Barajas, V., Hynes, S., Hobbs, B. and Sparkman, A.M. (2017). Integrating behaviour into the pace-of-life continuum: Divergent levels of activity and information gathering in fast-and slow-living snakes. *Behavioural Processes*, 142, 156-163.

Gangloff, E.J., Sparkman, A.M., & Bronikowski, A.M. (2017) Empirical evidence that individual heterogeneity in behaviour and physiology affects fitness in a model ectothermic amniote, the garter snake *Thamnophis elegans*. *Oikos*

Gangloff, E. J., Sparkman, A. M., Holden, K. G., Corwin, C. J., Topf, M., & Bronikowski, A. M. (2017) Geographic variation and within-individual correlations of physiological stress markers in a widespread reptile, the common garter snake (*Thamnophis sirtalis*). *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*, 205, 68-76.

Sparkman, A.M., Blois, M., Adams, J., Waits, L., Miller, D.A.W., & Murray, D.L. (2017) Evidence for sex-specific reproductive senescence in monogamous cooperatively breeding red wolves. *Behavioral Ecology and Sociobiology* 71(1), 6.

Kauffman, K. L., Sparkman, A.M., Bronikowski, A.M., & Palacios, M.G. (2017) Vertical transmission of *Hepatozoon* in the garter snake *Thamnophis elegans*. *Journal of Wildlife Diseases* 53(1):121-125.

Sparkman, A.M., Palacios, M.G., & Bronikowski, A.M. (2014) Physiological indices of stress in wild and captive garter snakes: correlations, repeatability, and ecological variation. *Comparative Biochemistry and Physiology Part A* 174 (2014): 11-17

Sparkman, A.M., Billings, J.G., von Borstel, D., Bronikowski, A.M., & Arnold, S.J. (2013) Avian predation and the evolution of life histories in the garter snake *Thamnophis elegans*. *American Midland Naturalist* 170(1), 66-85.

Palacios, M.G., Sparkman, A.M., & Bronikowski, A.M. (2012) Corticosterone and pace of life in two life-history ecotypes of the garter snake *Thamnophis elegans*. *General and Comparative Endocrinology* 175, 443-448.

Sparkman, A.M., Adams, J.R., Steury, T.D., Waits, L.P., & Murray, D.L. (2012) Evidence for a genetic basis for delayed dispersal in a cooperatively breeding canid. *Animal Behavior* 83(4), 1081-1098.

Sparkman, A.M., Adams, J.R., Steury, T.D., Waits, L.P., & Murray, D.L. (2012) Pack social dynamics and inbreeding avoidance in the cooperatively breeding red wolf. *Behavioral Ecology* 23(6), 1186-1194.

Sparkman, A.M., Schwartz, T.S., Madden, J.A., Boyken, S.E., Ford, N.B., Serb, J.M., & Bronikowski, A.M. (2012) Rates of molecular evolution vary in vertebrates for insulin-like growth factor-1 (IGF-1), a pleiotropic locus that regulates life history traits. *General and Comparative Endocrinology* 178(1), 164-173.

Palacios, M.G., Sparkman, A.M., and Bronikowski, A.M. (2011) Developmental plasticity of immune defence in two life-history ecotypes of the garter snake *Thamnophis elegans* – a common-environment experiment. *Journal of Animal Ecology* 80(2), 431-437.

Sparkman, A.M., Adams, J., Steury, T.D., Beyer, A., Waits, L., & Murray, D.L. (2011) Helper effects on pup lifetime fitness in the cooperatively breeding red wolf (*Canis rufus*). *Proceedings of the Royal Society B: Biological Sciences* 278(1710), L1381-L1389. Featured in *New Scientist*, 21 October 2010 (<http://www.newscientist.com/article/dn19604>) and *Wired*, 22 October 2010 (<http://www.wired.com/wiredscience/2010/10/red-wolf-puppy-nanny>).

Sparkman, A.M., Adams, J., Steury, T.D., Waits, L., & Murray, D.L. (2011) Direct fitness benefits of delayed dispersal in the cooperatively breeding red wolf (*Canis rufus*). *Behavioral Ecology* 22(1), 199-205.

Sparkman, A.M., Ford, N.B., & Bronikowski, A.M. (2011). The Role of IGF-1 in Snake Reproduction. In: Aldridge, R.D., & Sever, D.M. (eds.), *Reproductive Biology and Phylogeny of Snakes*. Volume 9, Reproductive Biology and Phylogeny Series, Jamieson, B.G.M. (Ed). CRC Press, Boca Raton, Florida.

Sparkman, A.M., Waits, L.P., & Murray, D.L. (2011). Social and demographic effects of anthropogenic mortality: A test of the compensatory mortality hypothesis in the red wolf. *PLoS ONE* 6(6), e20868.

Byars, D.J., Ford, N.B., Sparkman, A.M., & Bronikowski, A.M. (2010) Influences of diet and family on age of maturation in brown house snakes, *Lamprophis fuliginosus*. *Herpetologica* 66(4), 456-463.

Sparkman, A.M., Byars, D., Ford, N.B., & Bronikowski, A.M. (2010) The role of insulin-like growth factor-1 (IGF-1) in growth and reproduction in female brown house snakes (*Lamprophis fuliginosus*). *General and Comparative Endocrinology* 168(3), 408-414.

Sparkman, A.M., & Palacios, M.G. (2009) A test of life-history theories of immune defense in two ecotypes of the garter snake, *Thamnophis elegans*. *Journal of Animal Ecology* 78(6), 1242-1248.

Sparkman, A.M., Vleck, C.M., & Bronikowski, A.M. (2009) Evolutionary ecology of endocrine-mediated life-history variation in the garter snake, *Thamnophis elegans*. *Ecology* 90(3), 720-728. Featured in *Faculty of 1000 Biology*, 16 April 2009 (selected by Tim Coulson). <http://www.f1000biology.com/article/id/1158825>.

Sparkman, A.M., Arnold, S.J., & Bronikowski, A.M. (2007) An empirical test of evolutionary theories for reproductive senescence and reproductive effort in the garter snake *Thamnophis elegans*. *Proceedings of the Royal Society B: Biological Sciences* 274(1612), 943-950.

RESEARCH PRESENTATIONS & INVITED LECTURES

Sparkman, A.M. & Schwartz, T.S. (2017) Dwarfism in Channel Islands Reptiles. Southwestern Herpetologists Association, Los Angeles, CA. Featured in CINP Newsletter:

<https://www.nps.gov/articles/channel-islands-as-reptile-evolution-laboratory.htm>

Sparkman, A.M. & Schwartz, T.S. (2017) Dwarfism in Channel Islands Reptiles. From Sea to Shore Lecture Series, Channel Islands National Park, Ventura, CA.

Sparkman, A.M., & Schwartz, T.S. (2016) Physiological and behavioral correlates of dwarfism in Channel Islands reptiles. 9th California Islands Symposium, Ventura, CA.

Sparkman, A.M., Howe, S.P., Hynes, S.G., & Hobbs, B.E. (2016) Convergent behavioural and morphological strategies in fence lizards on two college campuses. Society for Integrative and Comparative Biology (SICB), Portland, OR.

Gangloff, E.J., Sparkman, A.M., & Bronikowski, A.M. (2015) The role of interindividual variation in shaping reptilian life histories: A case study in garter snakes. "Heterogeneity in Individual Life History Trajectories Over Age: Quantifying the Relative Importance of Ontogeny, Selection, and Environment" workshop, Tromsø, Norway.

Sparkman, A.M., & Zylstra, S.J. (2015) Accommodating conscientious objections by researchers in the biological sciences. Oxford Center for Animal Ethics Summer School on the Ethics of Animal Research, Oxford, UK.

Howe, S.P., & Sparkman, A.M. (2015) Testing for effects of urbanization on morphology in the western fence lizard, *Sceleporous occidentalis*. International Urban Wildlife Conference, Chicago, IL.

Gangloff, E.J., Sparkman, A.M., & Bronikowski, A.M. (2014) Physiological and behavioral responses to environmental challenges in the western terrestrial garter snake, *Thamnophis elegans*. American Physiological Society, San Diego, CA, 2014

Sparkman, A.M. (2014) Lifetime reproductive success and senescence in red wolves: A family affair. Cal Poly San Luis Obispo, Biology Seminar Series.

Sparkman, A.M. (2014) Aging, reproduction, and social behaviour in wild *Canis*. Canine Longevity Consortium, Seattle, WA.

Sparkman, A.M., Palacios, M.G., & Bronikowski, A.M. (2013) Long-term elevation of indicators of physiological stress in captive garter snakes. Annual Meeting for the Society of Integrative and Comparative Biology (SICB), San Francisco, CA.

Palacios, M. G., Sparkman, A. M., & A. M. Bronikowski. (2010) Unraveling the causes of immune defense variation between life-history ecotypes of the garter snake *Thamnophis elegans*. American Physiological Society Intersociety Meeting: "Global Change and Global Science: Comparative Physiology in a Changing World," Westminster, CO.

Sparkman, A.M., Adams, J., Steury, T.D., Beyer, A., Waits, L., & Murray, D.L. (2010) Socially-mediated sex differences in lifetime reproductive success in the red wolf, *Canis rufus*. Canadian Society for Ecology and Evolution, Quebec City, QC.

Sparkman, A.M., Adams, J., Steury, T.D., Beyer, A., Waits, L., & Murray, D.L. (2010) Effects of delayed dispersers on pup lifetime fitness in the red wolf, *Canis rufus*. Midwest Wolf Stewards Conference, Dorset, ON.

Bronikowski, A.M., Sparkman, A.M., Byars, D. & Ford, N.B. (2009) The role of insulin/IGF1 signaling (IIS) in snake reproduction. Joint Meeting of Ichthyologists and Herpetologists, Portland, WA.

Sparkman, A.M., Vleck, C.M., & Bronikowski, A.M. (2009) Hormones and life history: A study of IGF-1 and population divergence in the garter snake *Thamnophis elegans*. Ecology and Evolution Department Seminar, University of Toronto, Toronto, ON.

Sparkman, A.M., Vleck, C.M., & Bronikowski, A.M. (2008) Evolution of life histories in the garter snake: Endocrine control. Annual Meeting for the Society for the Study of Evolution, Minneapolis, MN.

Sparkman, A.M., & Bronikowski, A.M. (2007) Endocrine-mediated evolution of life history traits: A study of IGF-1 and population divergence in the garter snake *Thamnophis elegans*. Annual Ecology and Evolutionary Biology Symposium, Ames, IA.

Sparkman, A.M., Arnold, S.J., & Bronikowski, A.M. (2006) Evolutionarily divergent patterns of age-specific reproduction in the garter snake *Thamnophis elegans*. Annual Meeting for the Society of Integrative and Comparative Biology (SICB), Orlando, FL.

GRANTS, FELLOWSHIPS, AWARDS & HONORS

- 2016-2020 NSF Grant “Integrated Physiological, Genetic and Demographic Responses to Long-Term Habitat Change” with Anne Bronikowski (Iowa State University) and David Miller (Pennsylvania State University (total: \$868,962; Westmont subaward: \$156,391)
- 2013 Southern California Research and Learning Center (SCRLC) Grant (\$3,500)
- 2009 Research Excellence Award for Outstanding Dissertation, Iowa State University
- 2007-2009 Doctoral Dissertation Improvement Grant, National Science Foundation (\$12,000)
- 2007 William R. Clark Award, Iowa State University (\$500)
- 2007 Grants-in-Aid of Research, Sigma Xi, (\$400)
- 2007 Grants-in-Aid of Research, Society for Integrative and Comparative Biology (\$1000)
- 2006 Gerontology Fellowship, Iowa State University
- 2005 Professional Advancement Grant, Iowa State University (\$300)
- 2005 Honourable Mention, NSF Graduate Research Fellowship Program
- 2004 Premium for Academic Excellence Award, Iowa State University
- 2004 Biotechnology 1-Year Graduate Fellowship, Iowa State University
- 2003 Outstanding Senior Award for Biology, Westmont College
- 2003 Goble Environmental Fellowship, Westmont College
- 2003 Dave Dolan Award for Social Service, Westmont College
- 2003 First Place Prose Award, Conference on Christianity and Literature
- 2002, 2003 Arthur C. Lynip Award for English, Westmont College
- 2002, 2003 Faculty Fellowship Award for the Natural Sciences, Westmont College
- 2002 Leadership Fellowship, Au Sable Institute for Environmental Studies
- 1999-2003 Westmont Presidential Scholarship, Westmont College