**Karla T. Moeller**

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# Education

2016 Ph.D., Arizona State University, School of Life Sciences, Tempe.

Biology. Clarifying the Dehydration Cascade: The Relationship Between Water, Stress, and Immune Function in Squamates.

Chair: Dr. Dale DeNardo.

2005 B.Sc., University of California, Santa Cruz. Ecology and Evolutionary Biology.

*Specialized Study*

2011 University of Utah, Salt Lake City: Stable Isotopes in Ecology Course.

**Professional Appointments**

2017 – present *Executive Educational Outreach Coordinator, Office of the University Provost, Arizona State University, Tempe, AZ*

I manage the educational website Ask A Biologist (AAB) and the Ask An Expert umbrella program. As a part of this effort, I am managing editor of all content, write grant applications for funding, explore new routes of communication to distribute AAB resources, coordinate volunteer contributors (mostly students), work with illustrators to visualize concepts, and create stories, lessons, and other materials for the site as needed.

2016 – 2017 *Postdoctoral Scholar, Center for Evolution and Medicine, Arizona State University, Tempe, AZ*

I am working as a science communicator and an instructional designer; my time is split between writing about evolutionary medicine for the public and focusing on the creating lessons in evolution for high school students and science teachers, as well as for undergraduate students.

2014 – 2016 *Senior Educational Outreach Specialist, Office of the University Provost, Arizona State University, Tempe, AZ*

I managed AAB and worked to expand that resource model to a variety of disciplines through the umbrella program Ask An Expert. In 2015, I helped guide 10 student writers and 2 student editors in the creation of 30 articles for Ask An Anthropologist, which launched in February of 2016.

2009 – 2013 *Teaching Assistant, Arizona State University, Tempe, AZ*

I guided students through learning activities and/or lectures and provided constructive feedback on student work in a variety of lab and lecture courses for undergraduates. During summer course work I had the opportunity to design original activities, many of which were rated as positive learning experiences by my students.

# Additional Experience

2008 *Research Assistant, Lund University, Lund, Sweden.* I was lead assistant of a field study focusing on the trade-offs between wing patch size and predation, sexual selection, and species recognition in the banded demoiselle damselfly. Supervisor: Dr. Shawn Kuchta

2008 *Line Distance Sampling (LDS) Technician, Great Basin Institute, Las Vegas, NV.* I collected population density data using line distance sampling techniques to estimate the desert tortoise population trends in the Mojave Desert. Supervisor: Terry Christopher.

2002 – 2007 *Research Volunteer, University of California, Santa Cruz.* I contributed to a variety of field projects, including studies on snake and salamander model predation as a function of coloration; cross-fostering of young lizards; and effects of antagonistic breeding behaviors on hormone levels in lizards. I also performed lab animal husbandry and care for California mountain kingsnakes. Supervisors: Dr. Barry Sinervo and Mitchell Mulks.

**Publications**

**Peer-Reviewed Journal Articles: Biological research**

*Published/ In Press*

Lundgren, E.J., and Moeller, K.T. 2017. Anti-predator strategies of, and possible thanatosis in, juvenile collared peccaries (*Pecari tajacu*). *The Southwestern Naturalist* 62: 235-237.

Moeller, K.T., Demare, G., Davies, S., and DeNardo, D.F. 2017. Dehydration enhances multiple physiological defense mechanisms in a desert lizard, *Heloderma suspectum*. *Journal of Experimental Biology* 220: 2166-2174.

Moeller, K.T., Moeller, A.K, Moyano, F., Lundgren, E.J. 2017. Observation of an American black bear eating Odonates in Yosemite National Park. *Western North American Naturalist* 77: (1) 9.

Moeller, K.T., \*Elms, R., \*Sampson, S., \*Jackson, M.L., Seward, M., DeNardo, D.F. 2015. Does feeding frequency, independent of total energy consumption, affect lizard digestive efficiency or growth? *Journal of Zoology* 296: 225-230.

Moeller, K.T., Butler, M.W., and DeNardo, D.F. 2013. The effect of hydration state and energy balance on innate immunity of a desert reptile. *Frontiers in Zoology* 10: 23.

*Submitted*

DeNardo, D.F., Moeller, K.T., Seward, M., Repp, R. Evidence for atypical nest overwintering by hatchling lizards, *Heloderma suspectum*.

Wright, C.D., \*Jackson, M.L., Moeller, K.T., \*Murphy, M.S., Hoffman, T.C.M., Davis, J.R., and DeNardo, D.F. Thermal sensitivity of metabolism, cold-acclimation, and estimates of energy use during overwintering now and into the future in Gila monsters, *Heloderma suspectum*.

\*denotes authors who were undergraduates when the research project was completed.

**Peer-Reviewed Journal Articles: Pedagogy**

Seymoure, B., Moeller, K.T., Borchert, J., and Zillmann, A. 2013. Biotic Influences on Species Distribution: An Ecology Module for Middle School Students. *Science Scope* 36: 72-78.

**Children’s Books**

Moeller, K.T. *Joryn Looked Up*. Bloomington, IN: Archway Publishing, 2016.

**K-14 Lessons & Activities**

Greene, R., Moeller, K.T., and Rowton, M. 2015. Sooty Selection (Activity on Natural Selection). ASU's Ask A Biologist. <https://askabiologist.asu.edu/experiments/sooty-selection>

**Select Popular Science Articles**

*For Learners of All Ages*

Moeller, K.T. 2017. What is Evolutionary Medicine? ASU’s Ask A Biologist. <https://askabiologist.asu.edu/explore/evolutionary-medicine>

Haussler, J. and Moeller, K.T. 2016. Phosphate Fix. ASU's Ask A Biologist. <https://askabiologist.asu.edu/explore/phosphate-fix>

Deviche, S., Moeller, K.T., Kazilek, C.J. 2015. Recipe for a Plant (poster and story). ASU's Ask A Biologist. <http://askabiologist.asu.edu/recipe-plant-growth>

Moeller, K.T. 2014. Anatomy of an Article/Article Dissection. ASU’s Ask A Biologist.

<http://askabiologist.asu.edu/explore/anatomy-of-an-article>

<http://askabiologist.asu.edu/article-dissection>

Moeller, K.T. 2014. Parts of a Cell: Biology Bits. ASU's Ask A Biologist. <http://askabiologist.asu.edu/biology-bits/cell-parts-bits>

Moeller, K.T. 2013. Boundless Biomes/Revealing the Rainforest/Delving into Deserts. ASU's Ask A Biologist: Desert to Rainforest. <http://askabiologist.asu.edu/explore/biomes> <http://askabiologist.asu.edu/explore/rainforest> <http://askabiologist.asu.edu/explore/desert>

Moeller, K.T. and Waters, J. 2012. The Interest of Insects (Meet Our Biologists: Jon Harrison). ASU's Ask A Biologist. <http://askabiologist.asu.edu/explore/interest-insects>

Moeller, K.T. 2011. A Monster Story/How to Build a Monster. ASU’s Ask a Biologist. Body Depot: Monster Manual. <http://askabiologist.asu.edu/monster-story> (also available in print) <http://askabiologist.asu.edu/build-monster>

*For Adults*

Moeller, K.T. 2017. The other consequence of Trump’s attack on federal lands. *Slate Future Tense.*<http://www.slate.com/articles/technology/future_tense/2017/06/trump_s_attack_on_federal_lands_puts_potential_medical_breakthroughs_in.html>

Moeller, K.T. 2016. “Implications of Anthropogeny for Medicine & Health,” a public CARTA symposium. The Evolution and Medicine Review. <https://evmedreview.com/implications-of-anthropogeny-for-medicine-health-a-public-carta-symposium/>

Moeller, K.T. 2016. Social evolution in microbes, with Dr. Kevin Foster. The Evolution and Medicine Review. <https://evmedreview.com/dr-kevin-foster-talks-about-cellular-sociality/>

Moeller, K.T. 2012. The Variable Vaccine for HIV. ASU School of Life Sciences Magazine. 8(1): 10-12. <https://sols.asu.edu/sites/default/files/magazines/files/sols_vol8_no1_2012.pdf>

Moeller, K.T. 2011. One Tale Told is Two Tails Gained. ASU School of Life Sciences Magazine. 7 (1): 5-7. <https://sols.asu.edu/sites/default/files/magazines/files/sols_vol7_no1_2011.pdf>

Moeller, K.T. 2010. Science Corner. Cactus Wrendition, Audubon Society: Maricopa Audubon, Arizona. 61 (4): 15. <http://www.maricopaaudubon.org/Wrendition%20Winter%202010.pdf>

**Encyclopedia Articles**

Moeller, K.T.2013. Temperature-Dependent Sex Determination in Turtles. *Embryo Project* [embryo.asu.edu/pages/temperature-dependent-sex-determination-reptiles](http://embryo.asu.edu/pages/temperature-dependent-sex-determination-reptiles)

Moeller, K.T. 2013. “The Adaptive Significance of Temperature-Dependent Sex Determination in a Reptile” (2008), by Daniel Warner and Richard Shine. *Embryo Project* [embryo.asu.edu/handle/10776/6278](http://embryo.asu.edu/handle/10776/6278)

Moeller, K.T. 2012. “Behavioral Thermoregulation in Turtle Embryos” (2011), by Wei-Guo Du, Bo Zhao, Ye Chen, and Richard Shine. *Embryo Project* [embryo.asu.edu/pages/behavioral-thermoregulation-turtle-embryos-2011-wei-guo-du-bo-zhao-ye-chen-and-richard-shine](http://embryo.asu.edu/pages/behavioral-thermoregulation-turtle-embryos-2011-wei-guo-du-bo-zhao-ye-chen-and-richard-shine)

Moeller, K.T. 2012. Edward Drinker Cope (1840–1897). *Embryo Project* [embryo.asu.edu/pages/edward-drinker-cope-1840-1897](http://embryo.asu.edu/pages/edward-drinker-cope-1840-1897)

Moeller, K.T. 2012. “How do Embryos Assess Risk? Vibrational Cues in Predator-Induced Hatching of Red-Eyed Treefrogs” (2005), by Karen Warkentin. *Embryo Project* [embryo.asu.edu/view/embryo:128784](http://embryo.asu.edu/view/embryo:128784)

**Scripts**

2016. "X-ray Beetle Viewer." Script and narration for video for Beetle Dissection activity proposed by Jon Harrison and Meghan Duell. <http://askabiologist.asu.edu/micro-ct-beetle-navigator>

2015. "Collecting Arctic Cores." Script for video for "Frozen Life" story focusing on the research of Susanne Neuer, Arizona State University. <http://askabiologist.asu.edu/collecting-cores>

**Additional Experience**

**Writing**

2011 – 2014 Ask A Biologist: Website Q & A Coordinator and Grad Intern

I fielded questions from the public through the Ask A Biologist website, and helped volunteer experts answer questions as well, honing the ability of volunteers to communicate with the public. I also worked with a group of local K-12 teachers as they designed lessons for Ask A Biologist based on field experiences they had while visiting the Panamanian rainforest.

2013 Life Sciences Graduate Intern: Website profile writer

I took existing faculty profiles and wrote new versions that distilled research descriptions into interesting, public-friendly (~12th grade level) narratives.

**Editing**

2017–present American Journal Experts: Editor

I edit scientific manuscripts for researchers who write in English as a second language.

2015–present Tau Leader Games (designer board games): Editor

I provide feedback on both written and visual aspects of designer board game presentation.

2012 – 2015 ASU School of Life Sciences Magazine: Assistant Editor

I provided the final copy edit for a research magazine that addresses current research, alumni stories, and student and faculty awards.

2012 – 2013 Embryo Project Encyclopedia Editor

I edited a variety of articles for an online encyclopedia focused on embryology.

2011 – 2013 Ask A Biologist Editor (World of Biology and PLOSable stories)

I worked with graduate and undergraduate writers to refine general biology stories, as well as stories based on primary research literature published in the open-access journals *PLOS ONE* and *PLOS Biology*.

**Presentations**

**Research Talks**

Moeller, K.T. 2016. Clarifying the Dehydration Cascade: The Relationship Between Water, Stress, and Immune Function in Squamates. Public dissertation defense.

Wright, C.D. (presenter), Moeller, K.T., Holden, C., Demare, G., and DeNardo, D.F. January, 2014. Exploring the energetics of foraging behavior in Gila monsters, Heloderma suspectum. Society for Integrative and Comparative Biology.

Moeller, K.T. November, 2013. Dealing with Dehydration and Other Gila Tales. Tucson Herpetological Society.

Wright, C.D. (presenter), Moeller, K.T., Wolf, B.O., and DeNardo, D.F. January, *2011.* The acute and chronic effects of food supplementation on the physiology and behavior of free-ranging Gila monsters.Society for Integrative and Comparative Biology.

Moeller, K.T. October, 2010. Physiological and behavioral differences between life stages of the Gila monster. ASU Graduate seminar: Current Topics in Life Science.

**Research Posters**

Moeller, K.T. (presenter). June, 2016. Lessons in EvMed: Empowering EvMed students to create educational tools. International Society of Evolution, Medicine, and Public Health.

Moeller, K.T. (presenter), Butler, M.W., Davies, S., and DeNardo, D.F. November, 2013. Redefining water stress in a vertebrate. Association for the Advancement of Science (Southwestern and Rocky Mountain Division). Water Forum: Adapting to a water-stressed West.

Moeller, K.T.(presenter)and DeNardo, D.F. January, 2011. Life stage affects water loss in the Gila monster, a desert dwelling lizard. Society for Integrative and Comparative Biology.

**Panel Presentations**

Science Communication for Undergraduate Researchers. September, 2015. With Professor Charles Arntzen and Media Relations and Marketing Manager Sandra Leander. ASU School of Life Sciences: SOLUR.

Writing Successful Grant Proposals. October, 2014. With Professors Janet Neisewander, James Collins, and Kenro Kusumi, and fellow student Jesse Senko. ASU School of Life Sciences Graduate Student Retreat.

Communicating to the Public and Writing for Popular Journals. October, 2012. With Bert Hölldobler and Charles Kazilek. ASU School of Life Sciences Graduate Student Retreat.

**Book Readings**

“A Monster Story—Meet the Author” September, 2013. AZ Science Center Teacher Event.

**Teaching Experience**

**Arizona State University**

*Professor*

Science Communication, 2018

*Teaching Assistant*

Biology and Society (1 semester)

Exploration and Science (1 semester)

History of Biology (1 semester)

Human Anatomy and Physiology I Laboratory Instructor (1 semester)

Human Anatomy and Physiology II Laboratory Instructor (3 semesters)

Lab Coordinator (assistant) for Human Anatomy and Physiology I & II (1 semester)

*Guest Lecturer*

Conservation Biology, 2018

Grant Writing, 2013

Life Sciences Career Paths: Physiology of Arizona Desert Animals, 2011

Environmental Life Sciences Field camp, 2010

**Mentoring Undergraduates and Post Baccs at ASU**

2009 – 2014 Megan Murphy, Matthew Harris, Amber Stanford, Guillaume Demare (visiting French graduate), Galen Robert Cummings, Ryan Elms, Samuel Sampson, Stephanie Walker, Tarin Camarena, Cheng An Meng, Marin Jackson (Independent project: effects of acclimation on metabolic rate in the Gila monster), Adriana Manrique (Bartlett Honor’s College, National Hispanic Scholar. Honor’s Thesis—Life as a leaky boa: water loss mechanisms in *Candoia aspera*).

**Grants, Awards, and Nominations**

**Arizona State University**

*Research and Resource Awards*

2017 Frankenstein Bicentennial Project Small Grant

2016 Graduate and Professional Student Association (GPSA): Graduate Research Support Grant (non-dissertation)

2015 Center for Evolution and Medicine Venture Fund Award: The Creation of Global EvMed Educational Resources by ASU Students

2013 GPSA: Jumpstart Grant

2012 Life Sciences Graduate Research Scholarship

2011 GPSA: Graduate Research Support Grant

2011 Life Sciences Graduate Initiatives for Training Grant

*Service and Merit Awards and Nominations*

2016 College of Liberal Arts and Sciences Excellence Fellowship for First Generation Students

2014 Faculty Women's Association Distinguished Graduate Student Award

2014 School of Life Sciences (SOLS) Teaching Assistant of the Year Nominee

2013 Faculty Women's Association Distinguished Graduate Student Nominee

2008 – 2011 University Graduate Fellowship (3)

2011 Graduate Student Service Award

2009 Graduate Citizen Scholar Award

2008 Doctoral Recruitment Grant

*Travel Awards*

2014 GPSA Travel Grant (Research Conference)

2011 GPSA Travel Grant (Science Writers Conference)

2011 Earl and Lenore Tripke Professional Development Travel Grant

2010 SOLS Conference Travel Grant (Research Conference)

2010 GPSA Travel Grant (Research Conference)

**Non-University Organizations**

*Service and Merit Nominations*

2013 Philanthropic Educational Organization: Scholar Award Nominee

*Research Awards*

2013 Charles H. Lowe, Jr. Herpetological Research Fund

2011 T & E, Inc.: Conservation Biology Research Grant

2010 Society for the Study of Amphibians and Reptiles: Field Research Grant

2010 NSF Honorable Mention: Graduate Research Fellowship Program

2009 NSF Honorable Mention: Graduate Research Fellowship Program

**Service**

**Arizona State University**

*Institutional Service*

2018 SOLS Grad Student Brown Bag Series Speaker: “Mental health in grad school: How to keep your soul intact (when grad school tries to steal it).”

2008 – 2015 SOLS Grad Mentoring Committee: Co-founder, acting intermediary. This committee encourages resolution of problems between graduate students and faculty mentors.

2013 – 2014 SOLS Student Executive Board: co-President of graduate student body

2013 – 2014 BioXFEL Development Team: Outreach Advisory Board Member. This group was part of a collaboration with teams from eight other universities to establish a new, NSF-sponsored Science and Technology Center.

2012 – 2013 SOLS Communication Team: Member. This group rebranded the School of Life Sciences to have its own image distinct from ASU’s university-wide image.

2012 SOLS Search Committee (for Manager of Media Relations): Member

2011 – 2012 Society for Women in Science: President

2011 – 2012 GPSA Seated Assembly: Member (Life Sciences)

2011 – 2012 International Students Committee: Member

2011 – 2012 GPSA Internal Affairs Committee: Member

2010 – 2011 GPSA Reviewer: Jumpstart Grant, 2011; Graduate Research Support Grant, 2011; Teaching Excellence Award, 2010-2011

2010 – 2011 Research and Training Initiatives Office Committee: Member

2009 – 2010 Graduate Programs Committee: Member

*Community Service*

2008 – 2014 Ask a Biologist. I answered biology questions from young students through [www.askabiologist.com](http://www.askabiologist.com).

2011 – 2012 Association for Women in Science: Vice President: Central Arizona Chapter. As Vice President, I secured funding for various seminars held on the ASU campus, I organized science fair judging of female students grades 5-12 at the Arizona Science and Engineering Fair, and I co-organized Hands-On Science Day, at which winners of the award visited research laboratories and met with many female graduate students, post docs, and faculty on the ASU campus. Hands-On Science Day is designed to build interest in science among young female students, in part by enabling them to meet successful female scientists.

2008 – 2011 Graduate Partners in Science Education. I helped at-risk youth complete science fair projects for the Arizona Science and Engineering Fair.

**Non-Traditional Teaching Establishments**

*Community Service*

2015 Desert Botanical Gardens: Book Club with Conrad Storad "Monster in the Rocks."

2012 Desert Botanical Gardens: Learning Labs Home-school Program. “Reptiles.”

2011 – 2012 Audubon Arizona: Enchanted trail. “Nocturnal animals of the Sonoran Desert.”

2011 Audubon Arizona: Teen Leaders in Conservation. “Careers in conservation.”

**Media Coverage**

2017 Article: ASU postdoc tackles ‘change’ in first children’s book <https://asunow.asu.edu/20170531-asu-postdoc-tackles-change-first-childrens-book>

2012 Article: School of Life Sciences, Hands-On Science Day

<https://asunews.asu.edu/20120524_sciencementors>

2011 Article: ASU Research Stories, “For lizard research, size matters.” <http://researchstories.asu.edu/stories/lizard-research-size-matters-1825>

2010 Video: Discovery Channel Canada: Daily Planet. This story focused on various research projects occurring in the DeNardo lab. <http://watch.discoverychannel.ca/#clip257910>