Dr. Kate Thomas

Curriculum vitae

Postdoctoral Researcher
Department of Biology
University of Texas at Arlington

Scientific Associate
The Natural History Museum (London, UK)
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Education

2012-18 **Ph.D. in Biology**, Duke University

2006-10 **B.S. in Marine Biology**, University of Oregon, Robert D. Clark Honors College, *summa cum laude*

Research Experience

2021- **Postdoctoral Researcher**, The University of Texas at Arlington, USA

2018-21 **Postdoctoral Researcher**, Natural History Museum, London, UK

2016 **Graduate Intern**, Smithsonian National Museum of Natural History, USA

2014 **Graduate Research Fellow**, National Evolutionary Synthesis Center, NC, USA

2014 **Summer Intern**, Monterey Bay Aquarium Research Institute, CA, USA

2012 **Field Assistant**, NSF International Research Experience for Students, Lough Hyne, IE

2011 **Research Apprentice**, Friday Harbor Labs, University of Washington, USA

2011 **Field Technician**, Bird Research Northwest, Oregon State University, USA

2009-10 **Undergraduate Researcher**, Oregon Institute of Marine Biology, University of Oregon, USA

Publications

Student co-author notation: Undergraduate and Master's†

Boyette JL, Bell RC, Fujita MK, **Thomas KN**, Streicher JW, Gower DJ, Schott RK. (2022) Molecular evolution of non-visual opsin genes across environmental, developmental, and morphological adaptations in frogs. *bioRxiv*. DOI:10.1101/2022.11.10.515783

Mitra AT†, Womack MC, Gower DJ, Streicher JW, Clark B, Bell RC, Schott RK, Fujita MK, **Thomas KN**. (2022) Ocular lens morphology is influenced by ecology and metamorphosis in frogs and toads. *Proc. R. Soc. B 289: 20220767.* DOI:10.1098/rspb.2022.0767

Thomas KN*, Rich C*, Quock RC*, Streicher JW, Gower DJ, Schott RK, Fujita MK, Bell RC. (2022) Diversity and evolution of amphibian pupil shapes. *Biol. J. Linn. Soc.* 137: 434-449. DOI:10.1093/biolinnean/blac095 *Equal contribution

Schott RK, Bell RC, Loew ER, **Thomas KN**, Gower DJ, Streicher JW, Fujita MK. (2022) Transcriptomic evidence for visual adaptation during the aquatic to terrestrial metamorphosis in leopard frogs. *BMC Biol.* 20: 138. DOI: 10.1186/s12915-022-01341-z

Thomas KN, Gower DJ, Streicher JW, Bell RC, Fujita MK, Schott RK, Liedtke HC, Haddad CFB, Becker CG, Cox CL, Martins RA, Douglas RH. (2022) Ecology drives patterns of spectral transmission in the ocular lenses of frogs and salamanders. *Funct. Ecol.* 36(4): 850-864. DOI:10.1111/1365-2435.14018

Schweikert LE*, **Thomas KN***, Moreno VM, Casaubon A, Golightly C, Bracken-Grissom HD. (2022) Ecological predictors and functional implications of eye size in deep-sea shrimps. *Front. Ecol. Evol.* 10: 787315. DOI:10.3389/fevo.2022.787315 *Equal contribution

Shrimpton SJ†*, Streicher JW*, Gower DJ, Bell RC, Fujita MK, Schott RK, **Thomas KN**. (2021) Eye-body allometry across biphasic ontogeny in anuran amphibians. *Evol. Ecol*. 35: 337–359. DOI:10.1007/s10682-021-10102-3 *Equal contribution

Thomas KN, Gower DJ, Bell RC, Fujita MK, Schott RK, Streicher JW. (2020) Eye size and investment in frogs and toads correlate with adult habitat, activity pattern, and breeding ecology. *Proc. R. Soc. B* 287(1935): 20201393. DOI:10.1098/rspb.2020.1393

Davis AL, **Thomas KN**, Goetz FE, Robison BH, Johnsen S, Osborn K. (2020) Ultra-black camouflage in deep-sea fishes. *Curr. Biol.* 30: 1-7. DOI:10.1016/j.cub.2020.06.044

Thomas KN, Robison BH, Johnsen S. (2017) Two eyes for two purposes: *in situ* evidence for asymmetric vision in the cockeyed squids *Histioteuthis heteropsis* and *Stigmatoteuthis dofleini*. *Phil. Trans. R. Soc. B* 372: 20160069. DOI:10.1098/rstb.2016.0069

Invited Seminars

2022 *Insights into animal vision in diverse environments.* **California Academy of Sciences**, San Francisco, CA, USA

2022 *Ecology drives patterns of spectral transmission in the ocular lenses of frogs and salamanders*. **Ron Douglas Symposium,** London, UK

2021 *Vision and camouflage in the deep ocean.* **Oregon Institute of Marine Biology**, Charleston, OR, USA

2020 *Ecological correlates of eye size in frogs and toads*. **Natural History Museum**, London, UK

2016 *The perks of being cock-eyed: Orientation and visual characteristics of histioteuthid squids*, **Smithsonian National Museum of Natural History,** Washington, DC, USA

2014 *Bioluminescent signals and the eyes that view them*, **Universidade Federal de São Carlos, Sorocaba**, Sorocaba, SP, Brazil

2014 *Visual ecology and photophore evolution in deep-sea bioluminescent squid*, **National Evolutionary Synthesis Center**, Durham, NC, USA

Contributed Presentations

2022 *Ecological correlates of visual morphology in frogs and toads*. **British Ecological Society MacroFest**, Sheffield, UK (talk)

2021 *Ocular transmission across frog and toad diversity.* **Society for Integrative and Comparative Biology Meeting**, Virtual Meeting (talk)

2020 *Ecological correlates of eye size in frogs and toads*. **Society for Integrative and Comparative Biology Meeting**, Austin, TX (talk)

2018 *Now you see me, now you don't: Cephalopod visual ranges and implications for deep-sea visual ecology.* **Deep-Sea Biology Society Meeting**, Monterey, CA (talk)

2018 *Now you see me, now you don't: Cephalopod visual ranges and implications for deep-sea visual ecology.* **Society for Integrative and Comparative Biology Meeting**, San Francisco, CA (talk)

2017 *What big eyes you have: Eye scaling and visual range in cephalopods*, **Evolution Meeting**, Portland, OR (talk)

2017 *What big eyes you have: Eye scaling and visual range in cephalopods*, **Society for Integrative and Comparative Biology Meeting**, New Orleans, LA (talk)

2016 *Bioluminescence, body size, and depth in cephalopods*, **Living Light Conference**, La Jolla, CA (talk)

2016 *The perks of being cock-eyed: Orientation and visual characteristics of histioteuthid squids*, **Society for Integrative and Comparative Biology Meeting**, Portland, OR (talk)

2015 *The evolution and morphological diversification of bioluminescence in cephalopods*, **Cephalopod International Advisory Council Conference**, Hakodate, Hokkaido, Japan (poster)

2015 *Relationships between bioluminescence, body size, and depth in cephalopods*, **Deep-Sea Biology Symposium**, Aveiro, Portugal (talk)

2013 *Oxygen fluctuations and larval settlement in ephemeral algal beds of Lough Hyne, Ireland,* **Benthic Ecology Annual Meeting**, Savannah, GA (talk)

2012 *Oxygen cycles and larval settlement in ephemeral algae beds of Lough Hyne, Ireland*, **Women in Science and Engineering Symposium**, Duke University, Durham, NC (talk)

2012 *Oxygen cycles and larval settlement in ephemeral algae,* **University College Cork**, Cork, Ireland (talk)

2011 *Seasonal and tidal effects on water density gradients in the San Juan Channel,* **Friday Harbor Labs, University of Washington**, Friday Harbor, WA (talk)

2010 *The distribution of two marine cladocerans during upwelling and downwelling events off the Oregon coast*, **Western Society of Naturalists Annual Meeting**, San Diego, CA (talk)

Student Supervision and Mentoring

2022- Nicole Bednarik (Undergraduate, Macalester University, USA)

2020 Amartya T. Mitra (Master of Research, University College London/Natural History Museum, UK; thesis awarded Distinction)

2019-22 Caitlyn Rich (Undergraduate, University of California, Santa Cruz, USA)

2019-22 Rachel C. Quock (Undergraduate, San Francisco State University, USA)

2019 Samuel J. Shrimpton (Master of Research, University College London/Natural History Museum, UK; thesis awarded Distinction)

2015-16 Lauren Ellis (Undergraduate, Duke University, USA)

2013-14 Alexa Stefanko (Undergraduate, Duke University, USA)

Teaching Experience

2022 Instructor, **Marine Invertebrate Zoology**, Bamfield Marine Sciences Centre (BC, CA)

2018 Instructor, **Life in the Deep Sea**, Duke University (NC, USA)

2018 **Certificate in College Teaching**, Duke University (NC, USA)

2018 **Preparing Future Faculty Program**, Duke University (NC, USA)

2017 Instructor, **Duke Forever Learning course: Exploring Earth's Inner Space**, Duke University (NC, USA)

2017 Teaching Assistant, **Gateway to Biology: Genetics and Evolution**, Duke University (NC, USA)

2012 Teaching Assistant, **Symbiosis in the Marine Environment Workshop**, University of Oregon (USA)

2012 Teaching Assistant, **Biological Illustration Workshop**, University of Oregon (USA)

2010 Teaching Assistant, **Marine Birds and Mammals**, University of Oregon (USA)

2009 Teaching Assistant, **Invertebrate Zoology**, University of Oregon (USA)

Honors, Awards, and Fellowships

2021 **Paper of the Year Award**, Deep-Sea Biology Society

2018 **Student Talk Award**, 15th Deep-Sea Biology Symposium, Deep-Sea Biology Society

2018 **Duke Data Expeditions Grant**, Information Initiative at Duke University ($1,500)

2017-18 **Katherine Goodman Stern Fellowship**, Duke Graduate School ($22,912)

2017 **Graduate Student Training Enhancement Grant**, Duke University ($3,300)

2017 **Summer Research Fellowship**, Duke Graduate School ($5,500)

2016 **Graduate Research Internship Program**, National Science Foundation & Smithsonian Institution ($5,000)

2014-17 **Biology Grant-in-Aid**, Duke University Biology Department ($1,000; $1,000; $1,000; $1,000)

2014-16 **Domestic Dissertation Travel Award**, Duke Graduate School ($1,000; $1,928; $2,000)

2014 **Graduate Student Fellowship**, National Evolutionary Synthesis Center ($12,100)

2014 **Graduate Student Exchange Grant**, Duke Brazil Initiative ($3,000)

2014 **Grant-in-Aid of Research,** Duke University Graduate School ($1,000)

2014 **Grant-in-Aid of Research**, Sigma Xi ($1,000)

2013 **Graduate Research Fellowship**, National Science Foundation ($132,000)

2013 **Outreach Grant**, Duke Center for Science Education ($880)

2013 **Outreach Grant**, Duke Center for Science Education ($822)

2010- **Phi Beta Kappa Academic Honor Society**

2010 **Distinction in Undergraduate Honors Thesis**, Clark Honors College, University of Oregon

2010 **Department of Biology Valedictorian**, University of Oregon

2009-10 **Clarence and Lucille Dunbar Scholarship** ($5,000)

2009-10 **Ida M. Crawford Scholarship** ($900)

2009-10 **Phyllis Para Talus Presidential Fellowship**, University of Oregon ($2,225)

2010 **Neil Richmond Fellowship**, Oregon Sea Grant ($500)

2009 **Laura Bickerstaff Scholarship**, Oregon Institute of Marine Biology ($1,000)

2008-09 **Jean Wittemyer Memorial Scholarship**, Clark Honors College, University of Oregon ($2,000)

2007-08 **Mike and Betty Pongracz Scholarship**, Oregon Student Access Commission ($3,000)

2006-10 **University of Oregon Presidential Scholarship** ($24,000)

2006-10 **Merritt and Aileen Truax Scholarship** ($8,000)

2006-09 **University of Oregon Dean's List**

2006-07 **Withnell Undergraduate Music Scholarship** ($1,000)

2006 **OSU Federal Credit Union Scholarship** ($1,000)

2006 **Gannett National Merit Scholarship** ($3,000)

Public Outreach and Education

2022 **NightLife: Makes Sense**, California Academy of Sciences, *public event to share animal sensory biology with museum guests*

2021 **Guest Scientist,** Specimen Stories podcast; *podcast about collections-based research*

2019 **Guest Expert,** Everything Under the Sun podcast; *science podcast for children*

2019 **Nature Live**, Natural History Museum; *interactive public research talks for visitors of the museum*

2018, 19 **European Researchers Night**, Natural History Museum; *public outreach event for all ages to interact with museum scientists*

2017 **Duke Alumni Continuing Education**, Duke Marine Lab; *Lectures and labs about deep-sea biology for Duke alumni of all ages*

2017 **Seminar,** Duke Marine Science and Conservation Student Leaders organization; *Research and career path talk to undergraduate marine science students.*

2017 **Science Round-Robin**, Durham School of the Arts, Durham, NC (K-12); *8th grade classroom visit aimed at individual student interactions with scientists.*

2016 **Triangle STEM/MAT Network**, Raleigh, NC (K-12); *Partnering scientists with education students to create lesson plans for K-12 teachers.*

2015-16 **Letters to a Pre-Scientist**, USA (K-12); *Yearly pen-pal program matching scientists with low-income middle school students.*

2015 **NOAA Ocean Explorer**, R/V Pelican, Gulf of Mexico; *Online mission logs and photos for public engagement during a research cruise.*

2014-16 **Invite-a-scientist Program**, North Carolina Science Festival, Wake Young Women's Leadership Academy & NL Dillard Middle School (K-12); *Middle school classroom visits to encourage students to opt in to science classes, which are optional in the NC system.*

2015 **Darwin Day Roadshow**, National Evolutionary Synthesis Center, Hawaii (K-12); *Classroom visits at 10 public schools to talk to students about evolution, science research, and science careers.*

2014 **Plant defenses outreach**, Lowe's Grove Middle School, Durham, NC (K-12); *Co-organized an outreach event that taught modules on plant adaptations to more than 150 8th graders at a local low-income school.*

2014 **Animal vision outreach**, Lowe's Grove Middle School, Durham NC (K-12); *Led an outreach event that taught modules on animal vision and eye diversity to more than 150 6th graders at a local low-income school.*

2013, 15 **Science Day at Club Boulevard Elementary**, Durham, NC (K-12); *Led activities at a one-day interactive science fair for K-2nd grade students.*

2013-16 **Duke Biology Graduate Outreach Committee**, Duke University; *Facilitated outreach opportunities for graduate students by applying for funding and connecting local schools, museums, and educational events with the graduate community.*

2013-17 **Bugapalooza**, Schiele Museum, Gastonia, NC; *Co-organized and ran an interactive live insect booth at a bug-themed science fair for families.*

2013 **Science Under the Stars**, Duke University, Durham, NC; *Volunteered at a hands-on science fair for children of all ages.*

2012 **Research at Lough Hyne blog**, Skibbereen, Ireland; *Co-created and wrote for a blog outlining ongoing field research in Lough Hyne, Ireland.*

2012 **Marine science workshop,** Oregon Institute of Marine Biology, Charleston, OR (K-12); *Helped run a workshop for Native American high school students as part of a free two-week residency program that encourages working toward a college education.*