

Aaron M. Reedy

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Qualifications most relevant to Science and Innovation

Reedy has a unique combination of experiences as a science educator, scientist, and developer of digital tools for science learning that set him apart as a thought leader in science education. The foundation of his skill set is an award-winning career as a high school science teacher in the Chicago Public Schools. He went on to a successful graduate and postdoctoral career as a scientist where he secured federal funding for research projects from both the National Institutes of Health and the National Science Foundation. Reedy is a public advocate for science education and has spoken on the subject at events such as TED's mainstage, 21st Century Learning-Hong Kong, as well as at dozens of virtual PD events for school districts. Reedy and his team built the DataClassroom web-app to improve quantitative skills in science education and it now serves over 93,000 teachers and students in more than 30 states and 8 foreign countries.

Professional Appointments

2017-Present **DataClassroom**, Cofounder and CEO

2018-2020 **National Science Foundation Postdoctoral Research Fellow in Biology**
Auburn University
Supervisor: Dr. Tonia Schwartz

2006-2012 **Science Teacher**, Thomas Kelly High School, Chicago Public Schools

Education

2018 **Ph.D. in Biology**, University of Virginia, Charlottesville, VA
Advisor: Dr. Robert Cox *Dissertation:* "Evolutionary ecology of separate sexes: Causes and consequences of sex differences in morphology, behavior, and life history"

2008 **M.A. in Teaching, Secondary Education**, National Louis University, Chicago, IL

1999 **B.A. in Zoology**, Southern Illinois University, Carbondale, IL

Fellowships, Awards, and Grants

RESEARCH GRANTS AND FELLOWSHIPS

2019 National Institutes of Health R15 Grant-Co Principal Investigator
"A new vertebrate model to study the role of growth factors IGF1 and IGF2 in sex dimorphism of longevity and aging" (\$448,344)

2018 National Science Foundation Postdoctoral Research Fellowship in Biology-Principal Investigator
"Why do males and females age differently? Using longitudinal analysis to test evolutionary hypotheses in the wild" (\$138,000)

2016 National Science Foundation Doctoral Grant
"Revealing the genomic targets of intralocus sexual conflict" (\$20,207)

2015 Chicago Herpetological Society Research Grant (\$1000)

2012-2017 James and Elizabeth Wright Graduate Fellowship in Biology
Jefferson Scholars Foundation (\$175,000)

OTHER GRANTS AND AWARDS

2022 Entrepreneur of the Year, Charlottesville Business and Innovation Council

2019 Catalyst Accelerator Grant to DataClassroom (\$20,000)

2018 i.Lab At UVA Incubator Invitation and Grant to DataClassroom (\$7,500)

2017 Jefferson Scholars Foundation Exploratory Award to DataClassroom (\$21,000)

2016 University of Virginia All University Graduate Teaching Award (\$1000)

2016	Raven Honor Society
2013	University of Virginia Graduate School of Arts & Sciences Outreach Grant (\$775)
2013	University of Virginia Society of Fellows, Junior Fellow
2013	American Pixel Academy, Pixie Platinum Award for Excellence in Animation
2013	First Prize, Association Internationale Film d'Animation-East
2012	Oppenheimer Foundation Teacher Incentive Grant (\$2000)
2011	Chicago Ideas Week Idea Award for Innovation in Education
2011	National Geographic Society: Waitt Grant team member "How do population sex ratios affect the strength of natural selection in wild populations?"
2010	National Science Foundation Research Experience For Teachers (\$10,000) <i>Supervisors:</i> Dr. Fred Janzen and Dr. Dan Warner, Iowa State University
2010	Illinois Golden Apple Award for Excellence in Teaching
2008	Fund For Teachers Fellow (\$5000)

Publications

PEER REVIEWED

1. Reinke, B.A., Cayuela, H., Janzen, F., ... Cox, R.M., **Reedy, A.M.**, ... A. Bronikowski, and D. Miller (total of 114 authors, most are omitted here for brevity). 2022. Diverse aging rates in ectothermic tetrapods provide insights for the evolution of aging and longevity. **Science**, 376 (6600), 1459-1466.
2. Rosenberg, J.M., Schultheis, E.H., Kjelvik, M.K., Sultana, O., & **Reedy, A.M.** 2022. Big Data, Big Changes? The Technologies and Sources of Data Used in Science Classrooms. **British Journal of Educational Technology**.
3. Fargevieille, A., **Reedy, A.M.**, Kahrl, A.F., Mitchell, T.S.; Durso, A., Delaney, D.M.; Pearson, P., Cox, R.M., & Warner, D.A. 2022. Propagule size and sex ratio influence colonisation dynamics after introduction of a non-native lizard. **Journal of Animal Ecology**, 91(4): 845-857.
4. Kahrl, A. F., Kustra, M. C., **Reedy, A. M.**, Bhave, R. S., Sears, H. A., Warner, D. A., & Cox, R. M. 2021. Selection on Sperm Count, but Not on Sperm Morphology or Velocity, in a Wild Population of Anolis Lizards. **Cells**. 10(9): 2369.
5. Mayes, R., Long, T., Huffling, L., **Reedy, A.M.**, and B. Williamson. 2020. Undergraduate Quantitative Biology Impact on Biology Preservice Teachers. **Bulletin of Mathematical Biology**. 82:63.
6. Kustra, M., Kahrl, A.F., **Reedy, A.M.**, Warner, D.A., and R. M. Cox. 2019. Local population density affects sperm morphology and sperm count in a wild population of brown anole lizards, *Anolis sagrei*. **Oecologia**. 191:555–564.
7. **Reedy, A.M.**, Evans, W.J., and R.M. Cox. 2019. Sexual dimorphism explains residual variance around the survival-reproduction tradeoff in lizards: implications for sexual conflict over life-history evolution. **Evolution**. 73-11: 2324–2332.
8. De Lisle, S.P., Goedert, D., **Reedy, A.M.**, and E.I. Svensson. 2018. Climatic factors and species range position predict sexually antagonistic selection across taxa. **Philosophical Transactions of the Royal Society B**. 373.157: 20170415
9. **Reedy, A.M.**, Pope, B.D., Kiriazis, N., Giordano, C., Sams, C., Warner, D.A., and R.M. Cox. 2017. Female brown anoles (*Anolis sagrei*) display less and attack more quickly than males when challenged with a same-sex territorial intruder. **Behavioral Ecology**. 28: 1323-1328.
10. **Reedy, A.M.**, Cox, C.L, Evans, W.J., Chung, A.K., and R.M. Cox. 2016. Both sexes suffer increased parasitism and reduced energy storage as costs of reproduction in the brown anole, *Anolis sagrei*. **Biological Journal of the Linnean Society**. 117: 516-527.

11. Refsnider, J. M., **Reedy, A. M.**, Warner, D. A., and F.J. Janzen. 2015. Do trade-offs between predation pressures on females versus nests drive nest-site choice in painted turtles? *Biological Journal of the Linnean Society*. 116: 847-855.
12. Cox, C. L., Hanninen, A. F., **Reedy, A. M.**, and R.M. Cox. 2014. Female anoles retain responsiveness to testosterone despite the evolution of androgen-mediated sexual dimorphism. *Functional Ecology*. 29: 758–767.
13. **Reedy, A.M.**, Edwards, A., C. Pendlebury, L. Murdaugh, R. Avery, J. Seidenberg, A.S. Aspbury, and C. Gabor. 2014. An acute increase in the stress hormone corticosterone is associated with mating behavior in both male and female red-spotted newts, *Notopthalmus viridecens*. *General and Comparative Endocrinology*. 208: 57-63.
14. **Reedy, A.M.**, Zaragoza, D., and D.A. Warner. 2013. Maternally-chosen nest sites positively affect multiple components of fitness in offspring lizards. *Behavioral Ecology*. 24: 39-46.

POPULAR PUBLICATIONS AND NATURAL HISTORY NOTES

15. **Reedy, A.M.**, “The Lizard Project: Why Scientists and Teachers Should Work Together for Science Outreach,” *Scientific American*. August 31 2012. Web.
16. Neel, L.K., Durden, L.A., Cox, C.L., **Reedy, A.M.**, and R.M. Cox. 2017. *Anolis sagrei* (Brown Anole) and *Leiocephalus carinatus* (Northern Curlytail Lizard). Ectoparasites. *Herpetological Review*. 48(4):842
17. Cates C.D., D.M. Delaney, A.M. Buckelew, A.M. Durso, S.S. French, **A.M. Reedy**, and D.A. Warner. 2014. *Anolis sagrei*. Cannibalism. *Herpetological Review*. 45(3):491.
18. Cates C.D., D.M. Delaney, A.M. Buckelew, A.M. Durso, S.S. French, **A.M. Reedy**, and D.A. Warner. 2014. *Anolis sagrei*. Egg Predation. *Herpetological Review*. 45(3):491-492.
19. Delaney, D.M., A.M. Durso, S.S. French, **A.M. Reedy**, and D.A. Warner. 2014. *Anolis sagrei* (Brown anole). Prey Stealing Behavior. *Herpetological Review*. 45 (2): 324-325.
20. **Reedy, A.M.**, C.L. Cox, R.M. Cox, and R. Calsbeek. 2013. *Anolis sagrei* (Brown anole). Sexual Cannibalism. *Herpetological Review*. 44 (4): 661-662.
21. Durso, A.M., T.S. Mitchell, **A.M. Reedy**, and D.A. Warner. 2013. *Ophisaurus compressus* (Island Glass Lizard) Swimming. *Herpetological Review*. 44: 146.
22. Delaney, D.M., **A.M. Reedy**, T.S. Mitchell, A.M. Durso, K.P. Durso, A.J. Morrison, and D.A. Warner. 2013. *Anolis sagrei* (Brown Anole). Nest-Site Choice. *Herpetological Review*. 44: 314.
23. Durso, A.M., D.A. Warner, T.S. Mitchell, and **A.M. Reedy**. 2011. *Heterodon nasicus* (Western Hog-nosed Snake). Diet. *Herpetological Review*. 42 (3): 439-440

Science Research Mentorship

HIGH SCHOOL STUDENTS

Cecilia Hinsley, Salvador Jahen, Jessica Maciel, Mairbel Pinion

Impact of vegetation, temperature, and predation risk on microhabitat selection of plains hog-nosed snakes (Heterodon nasicus)

K-12 SCIENCE TEACHERS

Brandon Pope *Predator cues decrease development time and reduce sexual size dimorphism in the mosquito, Aedes aegypti*

Nick Kiriazis *Individual repeatability in shy and bold behavior in the cockroach, Blaptica dubia*

Fred Hingst *Factors affecting growth rate in duckweed (Lemna minor)*

Aaron Willey *The effect of humidity on the strength of the silk dragline in the golden orb weaver spider, Nephila clavipes*

- Lucia Ferrante *Testing the effect of mycorrhizae on plant growth*
- Brittany Beck *The effects of a polystyrene consumption on growth and reproduction in meal worms (*Tenebrio molitor*)*
- Bellasanta Ferrer *The effects of a polyethylene consumption on growth and reproduction in wax worms (*Galleria mellonella*)*
- Sarah Tazghini *Effects of artificial selection for large body size on closed population biomass in brine shrimp (*Artemia nauplii*)*
- Kathie Ang *Honey as an indicator of heavy metal pollution in Chicago*

UNDERGRADUATE STUDENTS

- David Zaragoza *Maternally-chosen nest sites positively affect multiple components of fitness in offspring lizards.*
- Albert Chung *Both sexes suffer increased parasitism and reduced energy storage as costs of reproduction in the brown anole, *Anolis sagrei*.*
- Will Evans *Sexual dimorphism explains residual variance around the survival-reproduction tradeoff in lizards: implications for sexual conflict over life-history evolution.*
- Cara Giordano *A sexual signal reliably predicts age, but not survival or body condition in the brown anole, *Anolis sagrei**
- Matthew Kustra *Local population density affects sperm morphology and sperm count in a wild population of brown anole lizards, *Anolis sagrei*.*

Invited Talks

- 2022 University of Minnesota Department of Biological Sciences
- 2020 21st Century Learning Hong Kong, Data Skills for the 21st Century
- 2019 American Association for the Advancement of Science (AAAS), Using Scientific Literature in the High School Classroom, Toms River High School, NJ
- 2019 Georgia Southern University, Department of Biology
- 2019 Chicago Public Schools, Data Skills for Biology Teachers
- 2018 University of Montana, UNVEIL Network
- 2017 National Biology Teachers Association, Data Nuggets teacher workshop
- 2017 University of Richmond, Ecology and Evolution Guest Lecture
- 2014 Penn State University, Carbon Earth GK-12 and Beyond, Conference Keynote
- 2013 TED, Long Beach, CA, On experiences creating digital science education content
- 2013 TED-Ed, Palm Springs, CA, On connecting classrooms to science research
- 2012 TED Mainstage, Long Beach, CA, How do we know what we know about evolution?
- 2011 Chicago Herpetological Society
- 2011 Teachers for Tomorrow, Niles, IL, Conference Keynote
- 2009 TEDxSMU, Dallas TX, K-12 science teachers as scientists.
- 2009 Fund For Teachers Fundraising Gala, Houston, TX. Keynote address.
- 2008 Chicago Foundation for Education

Outreach

- 2014-present **Co-founded Evolution Education** (Evolutioned.org) with Robert Cox to promote a model of K-12 science education led by teacher scientists. This National Science Foundation funded initiative was funded through an NSF CAREER Award to Robert Cox and conducts teacher professional development and offers two-year research fellowships each year to middle and high school teachers.
- 2013 **Served** on Charlottesville High School STEM steering committee.
- 2013 **Developed and taught workshop** for six local high school teachers on teaching experimental design in science class.
- 2009-2011 **Co-coordinated Turtle Research Ecology and Education (TREE)**, a field-based research program for high school students. In collaboration with the Janzen Lab at Iowa State University. 2009-2011
- 2011-2019 **Guest speaker** via video conference with education students at Utah State University, University of North Carolina at Greensboro, and Georgia Southern University 2011-2019.
- 2009 **Served** on Chicago Foundation for Education's Grant Selection Committee. 2009

Other Professional Experience

- 2010-2012 **Advance Illinois Education Advisory Committee, Chicago, IL**
Coauthored policy paper: *Transforming Teacher Work For a Better Educated Tomorrow*. Advised bipartisan legislators on legislation (IL Senate Bill 7) improving teacher evaluation.
- 2001-2005 **United States Peace Corps Volunteer, Vanuatu**
Taught science, health, and English to students ages 12 to 24. Developed a nationally used training course for agriculture teachers. Secured over \$60,000 in grants through Oxfam New Zealand, US AID, and Rotary International.
- 2000-2001 **Life Line Emergency Medical Service, Marion, IL**
Treated serious medical emergencies in field settings and on an advanced life support ambulance.

References

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