John Michael VandenBrooks, PhD
Curriculum Vitae

Arizona State University
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Scottsdale, AZ 85257

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EDUCATION

2007	Ph.D., Geology and Geophysics, Yale University Advisors: Dr. Elisabeth Vrba, Dr. Robert Berner
2004	M. Phil., Geology and Geophysics, Yale University
2001	B.S. Chemistry with High Honors and Distinction, University of Michigan Advisor: Dr. Omar Yaghi

ACADEMIC AND PROFESSIONAL APPOINTMENTS

2022-present	Associate Dean of Immersive Learning, Arizona State University EdPlus and Dreamscape Learn
2022-present	Professor, Arizona State University School of Applied Sciences and Arts College of Integrative Sciences and Arts
2019-2022	Associate Professor, Midwestern University Department of Physiology, College of Graduate Studies Joint Appointment: College of Veterinary Medicine
2014-2019	Assistant Professor, Midwestern University Department of Physiology, College of Graduate Studies Joint Appointment: College of Veterinary Medicine
2022-present	Adjunct Professor, Midwestern University College of Veterinary Medicine
2014-2022	Adjunct Professor, Arizona State University School of Life Sciences
2011-2013	Instructional Professional, Arizona State University
2007-2013	Postdoctoral Research Associate, Arizona State University Supervisor: Dr. Jon Harrison

ADMINISTRATIVE POSITIONS

Associate Dean of Immersive Learning, EdPlus, Arizona State University (2022-present)

- Oversee immersive learning efforts across the entire university
- Direct Dreamscape Learn at ASU which combines cutting edge virtual reality, advanced pedagogy, and Hollywood storytelling to transform education
- Collaborate with Dreamscape Learn (the company) and other corporate partners to develop products for distribution nationally
- Member of an eight-member leadership team that reports to the University Dean of Educational Initiatives and CEO of EdPlus and works closely with the president to manage ASU online that supports over 100,000 students and direct innovation efforts
- Contribute to the NEOSTEM and ASU Health initiatives to transform STEM and healthcare education including horizontal/vertical integration, personalized learning, narrative based education approaches, and focus on transferable skills
- Oversee a team of 20 individuals to create immersive learning experiences for introductory courses

- Manage a multi-million dollar budget that supports immersive experience development, curriculum development, and operations
- Direct faculty across the university to improve learning outcomes through the development of immersive learning experiences
- Interface with donors, potential university partners, and investors fundraise and to support university-wide and external initiatives

Core Facility Director, Midwestern University (2020-2022)

- Oversee core research facilities at MWU including microscopy, histology, molecular biology, and cell culture cores
- Manage multi-million dollar capital equipment budget for university core facility
- Manage staff and resources for core facility operation

Institutional Animal Care and Use Committee Chair, Midwestern University (2017-2021)

- Oversight of all animal use for research and teaching on MWU campus
- Interfaced with federal oversight agencies at NIH and USDA, directed review process of animal use protocols, performed inspections of animal facilities, and ensured university compliance with federal policies and regulations
- Coordinated planning, construction, and commissioning of a new 18,000 square foot animal housing facility
- Implemented university wide electronic system (InfoEd) for submission of IACUC protocols, tracking of animal usage, reporting, and integration with grant tracking system

Associate Director of Veterinary Physiology, Midwestern University (2014-2022)

- Founding faculty member of MWU College of Veterinary Medicine
- Served as faculty representative for College of Veterinary Medicine accreditation process
- Developed basic science curriculum and led curricular mapping/alignment in collaboration with clinical science faculty in the College of Veterinary Medicine
- Directed running of Veterinary Physiology curriculum and workshops

CONSULTING AND EXTERNAL ELECTED POSITIONS HELD

2020-present	Secretary, American Physiological Society, Comparative and Evolutionary Physiology Section
2020-2022	Consultant, Dreamscape Learn
2019-2020	Steering Committee Member, American Physiological Society, Comparative and Evolutionary Physiology Section
2018-2020	Secretary-Treasurer, Arizona Physiological Society
2017-present	Consultant, Fathomers Creative Research Institute
2017-2022	Consultant, Biospine Curriculum Initiative, Arizona State University

HONORS AND AWARDS

Faculty *(2014-present)*

2023 ASU Presidents Award for Innovation (Dreamscape Learn)
2023 Thomas Edison Achievement Award for Education (Dreamscape Learn)
2022 Zoetis Distinguished Veterinary Teacher Award
[for outstanding achievement and dedication in the field of Veterinary Medicine]
2022 Council for Advancement and Support of Education Circle of Excellence Award
2018 Association of American Veterinary Colleges Teaching Award

Postdoctoral *(2007-2013)*

Award for Recognition of Outstanding Service, Arizona State University
American Physiological Society Research Recognition Award
Ametek-Edax Best Poster Award

Graduate *(2001-2007)*

Philip M. Orville Prize, Yale University
[for outstanding research and scholarship in the earth sciences]
National Science Foundation Graduate Research Fellowship
Sterling Prize, Yale University
[awarded to the top incoming graduate student in the sciences]

Undergraduate *(1997-2001)*

University Honors, University of Michigan
Freshman, Sophomore, Junior, Senior Class Honors, University of Michigan
Rhodes Scholar Semi-Finalist
Regents Alumni Scholarship
Michigan Competitive Scholarship
Rensselaer Medalist

TEACHING EXPERIENCE AND EDUCATIONAL PROGRAM RESPONSIBILITIES

Midwestern University Courses Taught

2014-2022	PHYSG 1512, 1522, 1533: Veterinary Physiology I, II, and III Topics: Cellular, Cardiac, Respiratory, Endocrine, and GI Physiology
2015-2022	PHYSG 1571 Sequence: College of Health Sciences Human Physiology I Topics: Cellular Physiology and Biophysics
2018-2022	VMEDG 1503, 1605: Practice of Veterinary Medicine Client Simulations
2016, 2018	BASIG 1506/1515: Dental and Optometry Integrated Sequence Topics: Respiratory Physiology, ANS Physiology
2015	PHYSG 1501: Pharmacy Physiology I Topics: Neurophysiology
2014-present	Veterinary Physiology Workshop Coordinator Topics: Cellular, Cardiovascular, Respiratory, Renal, Endocrine, Reproductive, Neuro, and GI Physiology

Midwestern University Course Administration

2014-2022	Course Director PHYSG 1512: Veterinary Physiology I
2019	Course Director PHYSG 1571 Sequence: College of Health Sciences Human Physiology I
2019-2022	College of Veterinary Medicine Residency Program Supervisor
2018	College of Veterinary Medicine Rotation Preceptor
2018	Faculty Moderator BMMSG 506/610 Biomedical Sciences Graduate Seminar Series
2016	Course Director PHYSG 1582 Sequence: College of Health Sciences Human Physiology II
2014, 15, 18	Course Director PHSYG 1522: Veterinary Physiology II

Arizona State University Courses

2013, 2018-21	BIO 370: Vertebrate Zoology [developed online course including at home dissection laboratory]
2013	BIO 360: Animal Physiology
2013	BIO 100: The Living World
2012	BIO 461: Comparative Animal Physiology
2011-13	BIO 181: General Biology I
2008	BIO 201: Human Anatomy and Physiology Lecturer

Yale University Teaching Fellow

2005	Introduction to Geochemistry
2004	History of Life
2002	Global Environmental Change

CURRENT AND PAST EXTRAMURAL SUPPORT

Grants and Fellowships Funded

2024	Co-PI – National Science Foundation DBI BIO Centers - The National Center for Organismal Resilience - $19,458,401 *pending*
2021-25	PI – Arizona Biomedical Research Commission Arizona Investigator Grant Award #CTR056042 - Elucidating the Role of *Rhipicephalus sanguineus* (the Brown dog tick) as a Vector for Rocky Mountain Spotted Fever (RMSF) Transmission in Arizona - $446,495
2021	PI – Western Region Public Health Training Center Grant - $7,000
2019-20	PI – Veterinary Medicine Research Enhancement Award - $5,000
2019-2021	The National Endowment of the Arts Art Works Grant – Atmosphere – $25,000 in collaboration with Michael Jones Mckean and Fathomers Creative Research Institute
2017	PI - Midwestern University One Health Award – Elucidating the role of *R. sanguineus* as a vector for RMSF transmission in Arizona - $10,000
2016-2021	Co-PI - Polish National Science Foundation Award (*Nardowe Centrum Nauki)* - Cell size and thermal performance of ectotherms under oxygen limitation – testing the concept of optimal cell size - 800,000 PLN (~$200,000 USD)
2017, 18, 19, 20, 21	PI – Midwestern University One Health Award for Student Support (awarded five times) - $12,500 in total
2008-2012	Co-PI National Science Foundation Award #0746352 - Atmospheric Oxygen Influences on the Size of Modern and Fossil Insects - $500,000
2009	Co-PI - National Science Foundation Award #0929344 – Variable Atmosphere Laboratory (VAL) Workshop Two - $29,855
2009	Co-PI - National Science Foundation Research Experience for Undergraduates (REU) Supplement: Atmospheric Oxygen Influences on the Size of Modern and Fossil Insects - $36,000
2007	Co-PI - National Science Foundation Award #0748882 – Workshop: Design and Scientific Merit of the Variable Atmosphere Laboratory (VAL) - $13,076
2006	Ecology and Systematics of Animals on the Verge of Extinction Grant
2005	Theodore Roosevelt Memorial Grant, American Museum of Natural History
2005	The Lewis and Clark Fund for Exploration and Research Grant, American Philosophical Society
2005	Ecology and Systematics of Animals on the Verge of Extinction Grant
2005	Stephen J. Gould Grant, Paleontological Society
2005	Graduate Student Assembly Conference Award, Yale University
2004	Graduate Student Research Grant, Geological Society of America
2004	Stephen J. Gould Grant, Paleontological Society
2004	Yale Institute for Biospheric Sciences Field Ecology Grant
2004	Ecology and Systematics of Animals on the Verge of Extinction Grant
2003	Graduate Student Research Grant, Geological Society of America
2003	Stephen J. Gould Grant, Paleontological Society
2002-2005	National Science Foundation Graduate Research Fellowship
2001, 2006	Yale University Teaching Fellowship

Submitted while at Midwestern University, but not Funded

2018, 2020 PI - Determining the feasibility of a canine vaccination as a strategy to prevent Rocky Mountain Spotted Fever vectored by *Rhipicephalus sanguineus Morris Animal Foundation* - $10,800

2017, 2018 Co-PI - Consortium: Acquisition of a Large-volume Micro-CT System to Stimulate Research and Training in the American Southwest *National Science Foundation Major Research Instrumentation Grant* - $818,290, $632,517

2017 PI - Elucidating the Role of *Rhipicephalus sanguineus* (the Brown dog tick) as a Vector for Rocky Mountain Spotted Fever (RMSF) Transmission in Arizona *Arizona Biomedical Research Commission New Investigator Award* - $225,000

2017 PI - Multiple abiotic stresses limit altitudinal dispersal during climate warming - *National Science Foundation Integrative Organismal Systems Proposal* - $306,413

2017 PI - Elucidating the Role of *Rhipicephalus sanguineus* (the Brown dog tick) as a Vector for Rocky Mountain Spotted Fever (RMSF) Transmission in Arizona *Morris Animal Foundation* - $10,800

2016, 2017 Co-I - Development and use of a genetically-manipulable ischemia-reperfusion injury model *American Heart Association* - $150,000

2016 Co-I - Oxygen regulation of stroke: A novel approach using *Drosophila National Institute of Health R03* - $100,000

2015, 2016 PI - How will oxygen-limited heat tolerance affect the dispersal of species during climate warming? *National Science Foundation Integrative Organismal Systems Panel* - $913,968

2015 PI - Combining paleontology, modern physiology, genetics and novel imaging techniques to examine the impact of varying atmospheric oxygen levels on evolution - *National Science Foundation Earth and Atmospheric Research Panel* - $301,775

PUBLICATIONS AND ABSTRACTS

Publications

1. Allen, J.W., Furman, H., Schaefer, C., Yao, T., Lisowski, S., Gadagkar, S., Goetz, N., Hernandez, J., Lee, J.K. Kreisler, R., Quinlan, M., **VandenBrooks, J.M.** 2025 Morphologic and genetic diversity of brown dog tick (*Rhipicephalus sanguineus*) populations in Arizona and surrounding regions. *Ticks and Tick-borne Diseases* (in review)

2. Oliva, A., Madsen, S., Furman, H., Schaefer, C., Hernandez, J., Kreisler, R., Lee, J.K., Quinlan, M., **VandenBrooks, J.M.** 2025 Evaluating the correlation between Rocky Mountain spotted fever prevalence in canine and human populations in the American Southwest *Emerging Infectious Diseases* (in review)

3. Padilla-Perez, D.J., **VandenBrooks, J.M.,** Sokolowski, M.B., Angilletta, Jr., M. 2025. Foraging actively can be advantageous in heterogenous environments. *Biology Letters* (in review)

4. Youngblood, J.P., Orsted, M., Overgaard, J., Angilletta, M., **VandenBrooks, J.M.** 2025. Dehydration worsens heat tolerance and predicted survival of locusts. *Functional Ecology* (in press)

5. Czarnoleski, M., Szlachcic, E., Privalova, V., Labecka, A.M., Skikorska, A., Sobczyk, L., **VandenBrooks, J.M.**, Angilletta, Jr., M.J. 2023. Oxygen and temperature affect cell sizes differently among tissues and between sexes of *Drosophila melanogaster*. *Journal of Insect Physiology* 150:104559.
6. Mannett, B.T., Capt, B.C., Pearman, K., Buhlman, L.M., **VandenBrooks, J.M.,** Call, G.B. 2022. Nicotine has a therapeutic window of effectiveness in a *Drosophila melanogaster* model of Parkinson's disease. *Parkinson's Disease* 1:9291077.
7. Leibold, D.C., Gastelum, J.A., **VandenBrooks, J.M.,** Telemeco, R.S. 2022 Oxygen environment and metabolic oxygen demand predictably interact to affect thermal behavior in a lizard *Sceloporus occidentalis*. *Journal of Experimental Zoology Part A: Ecological and Integrative Physiology* 337(7):739-745.
8. Youngblood, J.P, Webb, E.A., Gin, L.E., van Leusen, P., Henry, J.R., **VandenBrooks, J.M.**, Brownell, S.E. 2021. Anatomical self-efficacy of undergraduate students improves during a fully online biology course with at-home dissections. *Advances in Physiology Education* 46:125-139.
9. **VandenBrooks, J.M.,** Ford, C.F., Harrison, J.F. 2020. Responses to alteration of atmospheric oxygen and social environment suggest trade-offs among growth rate, life span, and stress susceptibility in giant mealworms (Zophobas morio) *Physiological and Biochemical Zoology* 93(5):358-368.
10. Youngblood, J.P., **VandenBrooks, J.M.**, Babarinde, O., Donnay, M.E., Elliot, D.B., Fredette-Roman, J., Angilletta, M.J. 2020. Oxygen supply limits the heat tolerance of locusts during the first instar only. *Journal of Insect Physiology* 127:104157.
11. Harrison, J.F., Adjerid, K., Kassi, A., Klok, C.J., **VandenBrooks, J.M.**, Duell, M.E., Campbell, J.B., Talal, S., Abdo, C.D., Fezzaa, K., Pendar, J., Socha, J.J. 2020. Physiological responses to gravity in an insect. *Proceedings of the National Academy of Sciences* 117(4):2180-2186.
12. Vimmerstedt, J.C., Padilla Perez, D.J., Angilletta, M.J., **VandenBrooks, J.M.** 2019. Oxygen supply limits the thermal tolerance of avian embryos. *Biology Letters* 15(11):20190566
13. Youngblood, J.P., da Silva, C.R.B., Angilletta, M.J., **VandenBrooks, J.M.** 2019. Oxygen limitation does not drive the decreasing heat tolerance of grasshoppers during development. *Physiological and Biochemical Zoology* 92(6):567-572.
14. Angilletta, M.J., Sears, M.W., Levy, O., Youngblood, J.P., **VandenBrooks, J.M.** 2019. Fundamental flaws with the fundamental niche. *Integrative and Comparative Biology* 59(4):1038-1048.
15. Angilletta, M.J., Youngblood, J.P., Neel, L.K., **VandenBrooks, J.M.** 2019 The neuroscience of adaptive thermoregulation *Neuroscience Letters* 692:127-136. (doi:10.1016/j.neulet.2018.10.046)
16. Camacho, A., **VandenBrooks, J.M.,** Riley, A., Telemeco, R.S., Angilletta, M.J. 2018 Oxygen supply did not affect how lizards responded to thermal stress. *Integrative Zoology* 13(4):428-436 (doi:10.1111/1749-4877.12310)
17. **VandenBrooks, J.M.,** Gstrein, G., Harmon, J., Friedman, J., Olsen, M., Ward, A., Parker, G. 2018 Supply and demand: How does variation in atmospheric oxygen during development affect insect tracheal and mitochondrial networks? *Journal of Insect Physiology* 106:217-223. (doi:10.1016/j.jinsphys.2017.11.001)

18. Teague, C., Youngblood, J., Ragan, K., Angilletta, M.J., **VandenBrooks, J.M.** 2017 A positive genetic correlation between hypoxia tolerance and heat tolerance supports a controversial theory of heat stress. *Biology Letters* 13:20170309. (doi:10.1098/rsbl.2017.0309)

19. Shiehzadegan, S., Le Vinh Thuy, J., Szabla, N., Angilletta, M.J., **VandenBrooks, J.M.** 2017 More oxygen during development enhanced flight performance but not thermal tolerance of *Drosophila melanogaster*. *PLoS One* 12(5):e0177827. (doi:10.1371/journal.pone.0177827)

20. Le, J., **VandenBrooks, J.M.,** Angilletta, M.J. 2016 Developmental plasticity evolved according to specialist-generalist tradeoffs in experimental populations of *Drosophila melanogaster*. *Biology Letters* 12:20160379 (doi:10.1098/rsbl.2016.0379)

21. Smith C, Telemeco R.S., Angilletta, M.J., **VandenBrooks J.M.** 2015 Oxygen supply limits the heat tolerance of lizard embryos. *Biology Letters* 11: 20150113. (doi:10.1098/rsbl.2015.0113)

22. Bartholomew, N.R., Burdett, J.M., **VandenBrooks, J.M.,** Quinlan, M.C., Call, G.B. 2015 Impaired climbing and flight behaviour in *Drosophila melanogaster* following carbon dioxide anaesthesia *Scientific Reports* 5:15298 (doi:10.1038/srep15298)

23. Farzin, M., Albert, T., Pierce, N., **VandenBrooks, J.M.,** Dodge, T., Harrison, J.F. 2014 Acute and chronic effects of atmospheric oxygen on the feeding behavior of Drosophila melanogaster larvae. *Journal of Insect Physiology* 68:23-29. (doi:10.1016/j.jinsphys.2014.06.017)

24. Harrison, J.F., Cease, A.J., **VandenBrooks, J.M.,** Albert, T., Davidowitz, G. 2013 Caterpillars selected for large body size and short development time are more susceptible to oxygen-related stress. *Ecology and Evolution* 3(3):1305-1316. (doi: 10.1002/ece3.551)

25. Harrison, J.F., Waters, J.S., Cease, A.J., **VandenBrooks, J.M.,** Callier, V., Klok, C.J., Shaffer, K., Socha, J.J. 2013 How locusts breathe. *Physiology* 28(1):18-27. (doi:10. 1152/physiol.00043.2012)

26. **VandenBrooks, J.M.,** Munoz, E.E., Weed, M.D., Ford, C.F., Harrison, J.F. 2012 Impacts of paleo-oxygen levels on the size, development, reproduction, and tracheal systems of *Blatella germanica*. *Evolutionary Biology* 39(1): 83-93. (doi:10.1007/s11692-011-9138-3)

27. Harrison, J.F., Kaiser, A., **VandenBrooks, J.M.** 2010 Atmospheric oxygen level and the evolution of insect body size. *Proceedings of the Royal Society B* 277(1690): 1937-1946. (doi:10.1098/rspb.2010.0001)

28. Sato, H., Berry, C.W., Peeri, Y., Baghoomian, E., Casey, B.E., Lavella, G., **VandenBrooks, J.M.,** Harrison, J.F. and Maharbiz, M.M. 2009 Remote radio control of insect flight. *Frontiers in Integrative Neuroscience.* 3:24. (doi:10.3389/neuro.07.024.2009)

29. Bradley, T.J., Briscoe, A.D., Brady, S.G. Contreras, H. Danforth, B. Dudley, R., Grimaldi, D. Harrison, J.F., Kaiser, A. Merlin, C. Reppert, S.M. **VandenBrooks, J.M.** Yanoviak, S.M. 2009 Episodes in insect evolution. *Integrative and Comparative Biology* 49:590-606. (doi:10.1093/icb/icp043)

30. Harrison, J.F., Kaiser, A., **VandenBrooks, J.M.** 2008 Mysteries of oxygen and insect size. "Molecules to migration: The pressures of life" (Ed S. Morris & A. Vosloo). Medimond Publishing Co, Bologna, Italy. p. 293-302.

31. Vargas, A.O., Kohlsdorf, T., Fallon, J.F., **VandenBrooks, J.M.,** Wagner, G.P. 2008 The Evolution of *HoxD-11* Expression in the Bird Wing: Insights from *Alligator Mississippiensis*. *PLoS One* 3(10): e3325. (doi:10.1371/journal.pone.0003325)

32. Sato, H. Berry, C.W., Casey, B.E., Lavella, G., Yao, Y., **VandenBrooks, J.M.,** Maharbiz, M.M. 2008 A cyborg beetle: insect flight control through an implantable, tetherless microsystem. *Proc. MEMS 2008* 164–167. (doi:10.1109/MEMSYS.2008.4443618)

33. Berner, Robert A., **VandenBrooks, John M.,** Ward, Peter D. 2007 Oxygen and Evolution. *Science* 316(5824):557-558. (doi: 10.1126/science.1140273)

34. **Vanden Brooks, John M.** 2005 Raising Alligators: Researching Vertebrate Development. *Yale Environmental News* 11(1). p. 10-11.

35. **Vanden Brooks, John M.** 2001 Synthesis and Characterization of New Metal Organic Frameworks: A Discussion on Manipulation of Pore Dimensions and Functionality, Interpenetration and Heterometallic Systems. *University of Michigan Chemistry Press* p.1-31.

Abstracts

1. Angilletta, M., Bang, C., Crawford, K., Delaney, M., Geiger, T., Griffin, R., Hale, A., Hall, A., Pagliarulo, C., Sharabi, L., **VandenBrooks, J.**, Wright, C. 2024 Using virtual reality to teach biological concepts and transferrable skills to undergraduates. *Integrative and Comparative Biology* 64:S19.

2. Youngblood, J.P., Orsted, M., Overgaard, J., Angilletta, M., **VandenBrooks, J.** 2023. Dehydration worsens heat tolerance and predicted survival of locusts. *Ecological Society of America Annual Meeting*

3. Allwardt, J., Roe, N., Logue, M., Mutterperl, J., Oliva, A., Schaefer, C., Hernandez, J., Kreisler, R., Lee, J.K., Quinlan, M., **VandenBrooks, J.M.** 2022. Testing a multi-factorial model of the role of Rhipicephalus sanguineus in the spread of Rocky Mountain Spotted Fever in the Arizona region. *The FASEB Journal* 36(S1):R1936.

4. **VandenBrooks, J.M.,** Youngblood, J.P., Vimmerstedt, J.C., Padilla, D.J., Angilletta, M.J. 2022. Oxygen limitation of thermal tolerance varies based on life history traits. *Integrative and Comparative Biology* 62:S315.

5. Aikens, B.L., Pinc, G.J., O'Neill, M.C., **VandenBrooks, J.M.** 2022. Combining confocal imaging and SDS-page to measure variation in mitochondrial volume and fiber type in primate skeletal muscle. *Integrative and Comparative Biology* 62:S5-S6.

6. Schaefer, C.P., Lynn, S., Zaffino, A., Hubbard, I., **VandenBrooks, J.M.** 2022. Atmospheric oxygen and the growth of a giant. *Integrative and Comparative Biology* 62:S278.

7. Youngblood, J.P., Angilletta, M.M., **VandenBrooks, J.M.** 2022. Dehydration worsens the chronic heat tolerance and predicted survival of an insect pest. *Integrative and Comparative Biology* 62:S340-341.

8. Harrison, J.F., Wagner, J.M., Alvaian, V., Duell, M.E., Klok, C.J., Weed, M., Munoz, E., Fezzaa, K.M., Socha, J., **VandenBrooks, J.M.** 2021. Poor leg plumbing design saves earth from giant bugs. *The FASEB Journal* 35(S1):03354.

9. Logue, M., Mutterperl, J., Oliva, A., Schaefer, C., Hernandez, J., Kreisler, K., Lee, J.K., Quinlan, M., **VandenBrooks, J.** 2021. Roles of strain-level differences in Rickettsia rickettsii in the spread of Rocky Mountain Spotted Fever in Arizona and the surrounding region. *Student American Veterinary Medical Association Conference*

10. Logue, M., Mutterperl, J., Oliva, A., Schaefer, C., Hernandez, J., Kreisler, K., Lee, J.K., Quinlan, M., **VandenBrooks, J.** 2020. Roles of strain-level differences in Rickettsia rickettsii in vectoring RMSF in Arizona and the surrounding region. *National Veterinary Scholars Symposium* p. 166.

11. Maag, C., Harder, K., Oliva, A., Schaefer, C., Hernandez, J., Kreisler, R., Lee, J.K., Quinlan, M, **VandenBrooks, J.** 2020. Development of a comprehensive assessment of the risk of R. rickettsii exposure to people living in Arizona *National Veterinary Scholars Symposium* p. 170

12. Harrison, J.F., Wagner, J.M., Alvaian, V., Duell, M.E., Klok, C.J., Weed, M., Munoz, E., **VandenBrooks, J.M.,** Fezzaa, K.M., Socha, J. 2021 How to be a giant: Hypermetric scaling of leg tracheal systems in cockroaches and scarab beetles suggests oxygen transport to the legs limits maximal insect size *Integrative and Comparative Biology* 61:Supplement_1:e357-e358.

13. Oliva, A., Madsen, S, Maag, C., Finley, A., Hernandez, J., Kreisler, R., Lee, J.K., Quinlan, M., **VandenBrooks, J**. 2020. The role of the phylogeographic distribution of Rhipicephalus sanguineus on the spread of Rocky Mountain spotted fever in Arizona and Mexico. *The FASEB Journal* 34(S1):1-1.

14. Madsen, S., Oliva, A., Maag, C., Schaefer, C., Finley, A., Hernandez, J., Kreisler, K., Lee, J.K., Quinlan, M., **VandenBrooks, J**. 2020. Contribution of canine-based factors to the spread of RMSF in Arizona and Mexico. *The FASEB Journal* 34(S1):1-1.

15. Harrison, J.F., Wagner, J.M., Alvazian, V., Duell, M.E., Klok, C.J., Weed, M., Munoz, E., Fezzaa, K., Socha, J.J., **VandenBrooks, J.M**. 2020. How to be a giant: Hypermetric scaling of the leg in cockroaches and scarab beetles suggests oxygen transport to the legs limits maximal insect size. *The FASEB Journal* 34(S1):1-1.

16. **VandenBrooks, J.M.,** Vimmerstedt, J., Huffaker, M., Angilletta, M.J. 2020. Oxygen limits the thermal tolerance in embryos of terrestrial endothermic and ectothermic animals. *Integrative and Comparative Biology* 52:2.

17. Harrison, J.F., Aivazian, V., Weed, M., Munoz, E., **VandenBrooks, J.M.** 2020. Hypermetric scaling of the leg tracheal system in cockroaches. *Integrative and Comparative Biology* 77:7.

18. Owen, H., Lisowski, S., Schaefer, C., Yao, T., Allen, J., Goetz, N., Hernandez, J., Kreisler, R.K., Lee, J.K., Quinlan, M., **VandenBrooks, J.** 2019 Variation in the geographic distribution and rickettsial infection rates of *Rhipicephalus sanguineus* contributes to the spread of RMSF in Arizona and Mexico *The FASEB Journal* 33(1_supplement):662.48.

19. Schaefer, C., Allen, J., Yao, T., Owen, H., Lisowski, S., **VandenBrooks, J**. 2019 The phylogenetics of *Rhipicephalus sanguineus* and its role as a vector for Rocky Mountain Spotted Fever. *The FASEB Journal* 33(1_supplement):lb296.

20. Vimmerstedt, J.C., Youngblood, J.P., Angilletta, M.J., Quinlan, M.C., Lee, A.H., **VandenBrooks, J.M.** 2019 Testing the OCLTT hypothesis in quail embryos by manipulating thyroid hormone. *Integrative and Comparative Biology* 59:E429.

21. Angilletta, M.J., Levy, O., Sears, M.W., **VandenBrooks, J.M**. 2019 The fundamental flaws of fundamental niche models. *Integrative and Comparative Biology* 59:E5.

22. Youngblood, J.P., **VandenBrooks, J.M.,** Angilletta, M.J. 2019 Dynamics of heat tolerance during development of locusts. *Integrative and Comparative Biology* 59:E257.

23. **VandenBrooks, J.M.,** Youngblood, J.P., Vimmerstedt, J., Angilletta, Jr. M. 2018 Oxygen Limitation of Thermal Tolerance Varies Depending on the Life Stage and Behavior of Terrestrial Organisms. *American Physiological Society Comparative Physiology: Complexity and Integration meeting* p. 5.

24. Youngblood, J.P., **VandenBrooks, J.M.,** Angilletta, M.J. 2018 Stage-Specific Oxygen Limitation of Thermal Tolerance in *Schistocerca cancellata. American Physiological Society Comparative Physiology: Complexity and Integration meeting* p. 110.

25. Harrison, J.F. Duell, M.E., Wagner, J.M., Ciarlariello, J. Klok, C.J., **VandenBrooks, J.M.,** Socha, J.J. 2018 A Legged Limitation of Insect Size. *American Physiological Society Comparative Physiology: Complexity and Integration meeting* p. 118.

26. Harrison, J., Duell, M., Klok, C.J., Wagner, J., **VandenBrooks, J.,** Ciarlariello, J., Socha, J. 2018 Hypermetric scaling of the tracheal system in the leg but not the head, thorax, or abdomen suggests leg-specific constraints on oxygen supply and possibly body size in scarab beetles. *Entomological Society of America Annual Meeting: Crossing Borders: Entomology in a Changing World* p. 239.

27. Lisowski, S., Allen, J., Owen, H., Yao, T., Schaefer, C., Goetz, N., Hernandez, J., Kreisler, R., Lee, J.K., Quinlan, M., **VandenBrooks, J.** 2018 Assessing the feasibility of canine vaccination to prevent Rocky Mountain Spotted Fever in Arizona. *National Veterinary Scholars Symposium: Veterinary Scientists in Global Health Research* p. 203.

28. **VandenBrooks, J.M.,** Parker, G., Zaffino, A., Harrison, JF. 2018 Life history traits affect the response of insects to variation in atmospheric oxygen. *Integrative and Comparative Biology* 58(suppl1):e241.

29. Christensen, J.M., Lyn, S., Parker, G., **VandenBrooks, J.M.** 2018 Rearing oxygen affects wing vein morphology and flight performance in *Drosophila melanogaster*. *Integrative and Comparative Biology* 58(suppl1):e293.

30. Harrison, J.F., Kassi, A., Adjerid, K., Aviles, J., Klok, C.J., **VandenBrooks, J.M.**, Duell, M.E., Campbell, J.E., Alanis, E., Abdo, C., Pendar, H., Socha, J.J. 2018 Gravity effects on hemolymph and air distribution in the grasshopper, Schistocerca americana. *Integrative and Comparative Biology* 58(suppl1):E334.

31. Allen, J., Yao, T., Lisowski, S., Goetz, N., Hernandez, J., Kreisler, R., Lee, J.K, Quinlan, M., **VandenBrooks, J.** 2018 Elucidating the role of *Rhipicephalus sanguineus* (the Brown Dog Tick) as a vector for Rocky Mountain Spotted Fever (RMSF) transmission in Arizona. *The FASEB Journal* 32(1 supplement):534.2.

32. Lyn, S.L., Christensen, J., **VandenBrooks, J.,** Schaefer, C., Parker, G. 2018 Variation in atmospheric oxygen levels affects adult insect wing morphology and flight performance. *The FASEB Journal* 32(1 supplement):602.8.

33. Owen, H., Allen, J., Yao, T., Lisowski, S., Goetz, N., Hernandez, J., Kreisler, R., Lee, J.K, Quinlan, M., **VandenBrooks, J.M.** 2018 Determining the prevalence of Rickettsia rickettsii in geographically distinct populations of *Rhipicephalus sanguineus* in Arizona. *Arizona Physiological Society Annual Meeting* p. 11.

34. Vimmerstedt, J., Youngblood, J., Angilletta, M., **VandenBrooks, J.M.** 2018 Which precise mechanisms set thermal limits in animals? Testing the OCLTT hypothesis in Japanese quail embryos. *Arizona Physiological Society Annual Meeting* p. 15.

35. **VandenBrooks, J.M.,** Le Vin Thuy, J., Shiehzadegan, S., Camacho, A., Telemeco, R., Smith, C., Angilletta, Jr., M.J. 2017. Can we differentiate between the effects of hypoxia and high temperature on animal behavior and physiology? *Integrative and Comparative Biology* 57(suppl1):e436.

36. Harmon, J.L., Parker, G., Olsen, M., Gstrein, G., **VandenBrooks, J.M.** 2017. Tracheolar and mitochondrial investment varies with developmental pO_2 in *Drosophila melanogaster*. *Integrative and Comparative Biology* 57(suppl1):e68.

37. **VandenBrooks, J.M.** 2016. Supply and demand: How would variation in atmospheric oxygen over geologic time have influence insect tracheal and mitochondrial networks? *XXV International Congress of Entomology Program* p. 286.

38. **VandenBrooks, J.M.,** Arthur, K., Gstrein, G. 2016 Using confocal imaging to understand the effect of atmospheric oxygen on insect respiratory systems. *Integrative and Comparative Biology* 56(suppl1): e227.

39. Gstrein, G., Arthur, K., Parker, G., Friedman, J., **VandenBrooks, J.** 2016 Using confocal imaging to understand the effect of atmospheric oxygen on insect respiratory systems. *Experimental Biology: Transforming the Future through Science Program* p. 240.

40. Harrison, J.F., Duell, M., Campbell, J.C., **VandenBrooks, J.M.,** Kassi, A., Alanis, E., Socha, J.J. 2016 Body Position Effects on Hemolymph and Air Distribution in Insects. *Arizona Physiological Society Annual Meeting*

41. **VandenBrooks, J.M.,** Bartholomew, N.R., Burdett, J., Quinlan, M., Call, G.B. 2015 Carbon dioxide anesthesia impacts climbing and flight behavior in *Drosophila melanogaster*. *Integrative and Comparative Biology* 55(suppl1):e159

42. Bartholomew, N.R., Burdett, J., **VandenBrooks, J.M**., Quinlan, M., Call, G.B. 2015. Impaired climbing and flight behavior in *D. melanogaster* following carbon dioxide anesthesia. *56th Annual Drosophila Research Conference* p. 62.

43. Telemeco, R.S., Smith, C., Angilletta, M.J., **VandenBrooks, J.M.** 2015 Hypoxia reduces the lethal thermal limit of lizard embryos: Empirical support for the oxygen-limited thermal tolerance hypothesis. *Integrative and Comparative Biology* 55(suppl1):e341.

44. **VandenBrooks, J.,** Harrison, J. 2014 Combining X-ray Synchrotron Imaging of Amber Fossils with Body Size Changes in the Insect Fossil Record to Elucidate the Effect of Atmospheric Oxygen on Paleophysiology. *Comparative Approaches to Grand Challenges in Physiology* p. 38.

45. **VandenBrooks, JM,** Harrison, JF**.** 2014 Using impression fossils and 3D tomography to investigate the role of oxygen in insect evolution. *Integrative and Comparative Biology* 54(suppl1):e214.

46. Harrison, JF, Klok, CJ, **VandenBrooks, JM,** Duell, ME, Campbell, JB, Jirjies, S, Socha, JJ 2014 Grasshoppers defy gravity? Body position effects on hemolymph and air distribution in *Schistocerca americana*. *Integrative and Comparative Biology* 54(suppl1):e85.

47. Duell, M, Ciarlariello, J, Klok, CJ, **VandenBrooks, JM,** Harrison, JF 2014 Is there a price of being a giant? Body systems scaling in Scarabaeid beetles illustrated by high resolution micro-CT. *Integrative and Comparative Biology* 54(suppl1):e268.

48. Bartholomew, N., Macquaite, D.B., **VandenBrooks, J.,** Quinlan, M., Call, G.B. 2014 CO2 effects on subsequent anesthesia, *55th Annual Drosophila Research Conference, San Diego, CA, Genetics Society of America*

49. **VandenBrooks, J.M.,** Munoz, E.E., Weed, M.D, Harrison, J.F. 2013 Fluctuations in historical oxygen levels impacted insect body size and physiology. *Integrative and Comparative Biology* 53(suppl 1):e217.

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51. Miller, L., Waters, J.S., Harrison, J.F., **VandenBrooks, J.M.,** Yager, D.D., Xiao, X., De Carlo, F., Socha, J.J. 2012 The use of SR-μCT for 3D visualization of insect tracheal systems. *Integrative and Comparative Biology* 52(suppl 1):e295.

52. **VandenBrooks, J.M.,** Munoz, Elyse E., Weed, Michael D, Harrison, J.F. 2012 Developmental and fossil evidence that changes in atmospheric oxygen drove historical patterns in insect body size. *Integrative and Comparative Biology* 52(suppl 1):e181.

53. **VandenBrooks, J.M.,** Munoz, E.E., Weed, M.D., Harrison, J.F**.** 2011 The role of atmospheric oxygen in the evolution of insect body size. *Integrative and Comparative Biology* 51(suppl 1): e142.

54. Munoz, E., Weed, M., Harrison, J.F., **VandenBrooks, J.M.** 2011 Interspecific allometry of cockroach tracheal systems and the impact of oxygen on their tracheal development. *Integrative and Comparative Biology Annual Meeting 2011* 51(suppl 1):e98.

55. Weed, M., Munoz, E., Harrison, J.F., **VandenBrooks, J.M.** 2011 The effect of hypoxia and hyperoxia on dragonfly development: a link between Paleozoic oxygen levels and insect gigantism. *Integrative and Comparative Biology* 51(suppl 1):e264.

56. **VandenBrooks, J.M.,** Harrison, J.F., Kaiser, A.K. 2010 Atmospheric Oxygen and the Evolution of Insect Gigantism. *Geological Society of America Abstracts with Programs*, 42(5):192.

57. **VandenBrooks, J.M.,** Harrison J.F**.** 2010 Atmospheric Oxygen Influences on the Size of Modern and Fossil Insects. *Integrative and Comparative Biology* 50(1):e181.

58. Harrison, J.F., **VandenBrooks, J.M.** 2010 A Proposal for a National Variable Atmosphere Laboratory (VAL) for Climate Change Research. *Integrative and Comparative Biology* 50(1):e69.

59. Munoz, E., **VandenBrooks, J.M.,** Hale, J.A., Harrison, J.F. 2010. Effects of Atmospheric Oxygen on Tracheal Systems in *Blatella germanica*, the German Cockroach. *Integrative and Comparative Biology* 50(1):e271.

60. **VandenBrooks, J.M.,** Kaiser, A., Harrison, J. 2010 Atmospheric Oxygen Level and the Evolution of Insect Body Size. *Global Change and Global Science: Comparative Physiology in a Changing World p*. 38.

61. **VandenBrooks, J.M.,** Harrison, J. 2010 A Proposed National Facility for Global Climate Change – the Variable Atmosphere Laboratory (VAL). *Global Change and Global Science: Comparative Physiology in a Changing World p*. 21.

62. Munoz, E., Weed, M**., VandenBrooks, J.M.** 2010. The Effect of Paleozoic Oxygen Levels on the Development of the Tracheal System in the Extant *Blatella germanica,* the German Cockroach. *Global Change and Global Science: Comparative Physiology in a Changing World* p. 36

63. Weed, M., Munoz, E., Heinrich, E., Waters, J., Harrison, J.F., **VandenBrooks, J.M.,** 2010. Developmental Plasticity in the Tracheal System of *Zophobas morio* Beetles as Visualized by Synchrotron X-Ray Phase Contrast Imaging. *Arizona Imaging and Microscopy Society Meeting* p. 9

64. **VandenBrooks, J.M.,** Kaiser, A., Harrison, J.F. 2009 Tracheal Systems and the Evolution of Insects. *Integrative and Comparative Biology* 49(1):e175.

65. Ford, C.F., **VandenBrooks, J.M.,** Harrison, J.F. 2009. Parabolic Effects of Atmospheric Oxygen on Body Size, Development Time and Growth Rate in *Zophobas morio*, the Giant Mealworm. *Integrative and Comparative Biology* 49(1):e191.

66. Harrison, J.F. **VandenBrooks, J.M.,** Klok, C.J. 2008 Does atmospheric oxygen limit insect size? Effects of oxygen on insect growth and tracheal morphology. *International Congress of Entomology*, Durban, South Africa.

67. Cease, A., Albert, T., **VandenBrooks, J.,** Davidowitz, G., Harrison, J. 2007 The effects of varying oxygen levels on size, growth, and development rate in the tobacco hornworm. *Integrative and Comparative Biology* 47(1):e17.

68. **VandenBrooks, John M.** 2007 Atmospheric Oxygen and Vertebrate Body Size. Pardee Keynote Symposium – Oxygen, Evolution and Extinction; *Geological Society of America Annual Meeting*, Denver, CO.

69. **Vanden Brooks, John M.** 2006 New Insights into Phanerozoic Oxygen Levels and their Impact on Evolution. *Integrative and Comparative Biology* 46(1):e146.

70. **Vanden Brooks, John M.** 2005 The Development of *Alligator mississippiensis* Under Varying pO_2. *Integrative and Comparative Biology* 45(6):1089.

71. **Vanden Brooks, John M.** 2005 The Partial Pressure of Oxygen as a Factor in Vertebrate Development and Evolution. *Journal of Vertebrate Paleo*ntology 25(3) Supplement:126A.

72. **Vanden Brooks, John M.** 2005 Phanerozoic Oxygen Levels and Their Effects on Modern Vertebrate Development. *Earth Systems Processes 2* 1:60.

73. **Vanden Brooks, John M.** 2004 The Effect of Varying pO_2 on Vertebrate Evolution *Geological Society of America* 36(5):95.

74. **Vanden Brooks, John M.** 2004 The Effect of Varying pO_2 on Vertebrate Evolution. *Journal of Vertebrate Paleontology* 24(3) Supplement:124A

IMMERSIVE LEARNING EXPERIENCES

Co-wrote and directed the development of over 50 narrative-driven immersive education experiences and associated curricula in collaboration with Hollywood writer and producer Walter Parkes that have served over 30,000 students at ASU and have been distributed to over 15 external partners including K-12, community colleges, colleges, and universities.

Dreamscape Learn Immersive Experiences

Biology in the Alien Zoo

Consists of 6 modules with 18 total VR experiences and curricular activities. Students teleport to an Intergalactic Wildlife Sanctuary that allows students to explore, observe and collect data, and solve problems that reflect the key concepts taught in introductory biology. Working independently or in teams, students confront issues arising in real wildlife refuges on Earth, such as treating infectious diseases, managing genetic diversity and balancing food webs.

Chemistry in the Institute for Telepresent Exploration

Consists of 6 modules with 18 total VR experiences and curricular activities that allow students to explore the world of chemistry in the role of expert field agents of the Institute for Telepresent Exploration (ITE) solving the world's crises one molecule at a time. Students apply chemistry principles to solve novel problems related to human health, forensics, environmental factors, and space exploration.

Astronomy in the Center for Planetary Observation

Consists of 7 VR experiences and 14 curricular activities that thrusts students into making a decision on whether an approaching unidentified object is going to be the world's worst disaster or an unprecedented scientific opportunity. A continuous narrative across all 7 experiences requires students to apply astronomical principles and instrumentation to an urgent problem.

Art History Caves to Cathedrals

Consists of 4 VR experiences that require students to travel to architectural sites (Seti's Tomb, Hagia Sofia, Parthenon and Teotihuacan) to analyze and interpret the art and architecture. These environments recreate actual places and provide a unique opportunities for students to experience them.

WPCoffee and WPCola

Two VR experiences built by students with the ASU WP Carey Business School. Students are placed into a coffee shop and bottling factory to make real-time decisions about supply chain management that will affect their bottom line.

Global Futures Laboratory

6 synchronous VR experiences built by students in collaboration with GFL. Students to travel to affected areas of the world such as th arctic or coral reef to analyze and interpret climate and substantivity data to make informed decisions and envision future states and the impacts of climate change and human activities.

School of Earth and Space Exploration

2 synchronous VR experiences that leverage 3D scans Mars and Borah Peak. Students collect data to make recommendations on the missions. On Mars, they have to decide which samples to bring back from the sample return mission and in Borah Peak they must decide the likelihood of future earthquakes.

College Algebra, Music Theory, Technical Writing and Communication, and Microeconomics (under development)

PROFESSIONAL AND SERVICE ACTIVITIES

Invited Talks

2024	Innovation and Inclusive Excellence: Redefining the Pathways to Success in Higher Education, ASU-GSV, San Diego, CA
2024	Using virtual reality to teach biological concepts and transferable skills to undergraduates, Southern Oregon University, Ashland, OR
2024	Using virtual reality to teach biological concepts and transferable skills to undergraduates, University of Washington, Seattle, WA
2024	How a Dreamscape Learn Experience Comes to Life, EdPlus, Scottsdale AZ
2024	Learning Through Stories with Dreamscape, FOLC-Fest, Arizona State University, Tempe, AZ
2024	Transforming education through immersive learning and artificial intelligence, Sagewood Retirement Community, Scottsdale, AZ
2023	The future is now with Dreamscape Learn: Combining Hollywood storytelling, VR and cutting-edge pedagogy ASU-GSV, San Diego, CA
2022	Elucidating the role of Rhipicephalus sanguineus (the brown dog tick) as a vector for Rocky Mountain Spotted Fever (RMSF) transmission in Arizona. – 7th Annual Flinn Research Conference, Phoenix, AZ
2022	Preventing the spread of Rocky Mountain Spotted Fever in Arizona - Midwestern University Board of Trustees Glendale, AZ
2021	Scientific inquiry in an alien zoo: applying knowledge and skills to solve novel but realistic problems in a virtual intergalactic wildlife sanctuary. Plenary lecture and panel discussion High Touch High Tech 2021. Seoul, Republic of Korea.
2021	Scientific Inquiry in the Alien Zoo: Applying knowledge and skills to solve novel but realistic problems in a virtual Intergalactic Wildlife Sanctuary - REMOTE: The connected faculty summit (Virtual)
2020	A Hot Prospect: Teasing apart the effects of oxygen and temperature on animal physiology - Fresno State University Colloquium Series, Fresno, CA
2018	Oxygen limitation of thermal tolerance varies depending on the life stage and behavior of terrestrial organisms – Thermal Biology Symposium Lead Speaker, American Physiological Society Comparative Physiology New Orleans, LA
2017	Ancient Atmospheres, Fathomers Research Institute, Los Angeles, CA
2016	Supply and demand: How would variation in atmospheric oxygen over geologic time have influenced insect tracheal and mitochondrial networks? International Congress of Entomology XXV, Orlando, FL
2016	Oxygen and the evolution of insect body size, Penn State University
2014	Did changes in paleo-oxygen levels lead to the evolution of insect gigantism? A. Watson Armour III Research Seminar Series, Field Museum, Chicago, IL
2011	Oxygen and Evolution, The 17th International Hypoxia Symposium, Lake Louise, Alberta, Canada
2011	Paleo-oxygen Levels and Insect Evolution, Social Insect Research Group, Arizona State University
2009	The Development of the Variable Atmosphere Laboratory (VAL) for the Study of Past, Present, and Future Climate Change - Analysis and Experimentation on Ecosystems: Stakeholders Strategic Meeting, Naples, Italy
2009	Invited Participant - Analysis and Experimentation on Ecosystems: Design of Ecotrons Workshop, Montpelier, France
2009	Future Challenges in the Earth Sciences - Marine Life, Evolutionary Transitions to Land, and Biogeochemistry of Oceans and Atmosphere, Department of Geology and Geophysics, Yale University

2009	Tracheal Systems and the Evolution of Insects - Insect Evolution Symposium: Society Wide Symposium, Society of Integrative and Comparative Biology Annual Meeting, Boston, MA
2008	Variable Atmosphere Laboratory: Studying the Effects of Climate Change Dupont Summit, Washington D.C.
2007	Atmospheric Oxygen and Vertebrate Body Size - Pardee Keynote Symposium – Oxygen, Evolution and Extinction; Geological Society of America Annual Meeting, Denver, CO
2006	Oxygen and Evolution - Dr. Robert Berner Retirement Symposium, Department of Geology and Geophysics, Yale University
2006	Oxygen through the Phanerozoic - Department of Geology and Geophysics, State University of New York at New Paltz
2006	The Effects of Phanerozoic Oxygen on Vertebrate Development and Evolution - Yale Institute for Biospheric Studies

Arizona State University Leadership and Committee Positions

2025	ASU Health EdPlus Liaison
2024	Launching Leaders Program
2023	Action Lab Senior Director Search Committee
2023	Generative AI Steering Committee
2023-present	Digital Teaching and Learning Committee EdPlus Representative
2022-present	Action Lab Advisory Board Member
2022-*present*	NEOBIO and NEOSTEM committee

Midwestern University Committees

2020, 21, 22	College of Graduate Studies Rank and Tenure Committee
2021	College of Veterinary Medicine Rank and Tenure Committee
2021-22	Outsource Fund Committee Co-Chair
2018-22	Curriculum Renewal Committee, College of Veterinary Medicine
2019-22	Admissions Committee, College of Veterinary Medicine
2019-22	Curriculum Committee, College of Veterinary Medicine
2017-2021	Institutional Animal Care and Use Committee (IACUC) Chair
2015-17, 2022	Institutional Animal Care and Use Committee (IACUC) Vice Chair
2014-15	Institutional Animal Care and Use Committee (IACUC) Member
2016	Core Equipment Facility Ad-hoc Committee
2015-22	University Research Committee
2015	Computational Core Ad-hoc Committee
2015	Eight-Year Strategic Research Planning Group
2014-17	Clinical Research Committee, College of Veterinary Medicine
2014-17	Admissions Committee, College of Veterinary Medicine
2014-16	Curriculum Committee, College of Veterinary Medicine

Midwestern University Faculty Search Committees

2017-21	Assistant Professor, Department of Physiology
2017	Small Animal Surgeon, College of Veterinary Medicine
2016	Small Animal Surgeon, College of Veterinary Medicine
2015	Small Animal Surgeon, College of Veterinary Medicine
2015	Shelter Medicine Doctor, College of Veterinary Medicine
2014	Small Animal Surgeon, College of Veterinary Medicine

Other Midwestern University Service Activities

2022	One Health Report to the MWU Board of Trustees
2021	Nurse Anesthesia Accreditation Faculty Session
2019	College of Veterinary Medicine Pinning Ceremony Invited Faculty Speaker
2018-2019	Vice President of Research - Research Discussion Group Participant
2018	Higher Learning Commission Accreditation Site Visit Faculty Representative
2018	College of Veterinary Medicine Accreditation Site Visit Research Reception
2018	College of Veterinary Medicine Accreditation Site Visit Faculty Representative
2018-present	College of Veterinary Medicine Orientation Activity Coordinator
2017-present	College of Veterinary Medicine Orientation Day Basic Science Presentation
2016-2020	Kenneth A. Suarez Research Day, Head Judge
2016-2021	Kenneth A. Suarez Research Day Organizing Committee Member
2015	College of Veterinary Medicine Accreditation Site Visit Facilities Tour
2015	College of Veterinary Medicine Accreditation Site Visit Faculty Representative
2015-19	College of Veterinary Medicine Orientation Day Physiology Presentation
2014-present	College of Veterinary Medicine Admissions Interviewer
2014-present	Arizona College of Osteopathic Medicine Admissions Interviewer

Public Outreach and Other Service Activities

2024	Basis Elementary Students Dreamscape Learn Experiences
2024	National Consortium of Secondary STEM Schools Dreamscape Learn Experiences
2024	The Girlfriends Inc. Dreamscape Learn Experiences
2023	Arizona Science Center Dreamscape Learn Experiences
2019-2021	"The Fall" as part of "Total Collapse: Clay in the Contemporary Past" – Art Installation Gallery Showing with Michael Jones McKean and Fathomers Creative Institute at the University of Texas El Paso and Arizona State University
2019	Stand Up Science with Shane Mauss
2019-2021	Animal Welfare Club IACUC Presentation, Midwestern University
2019-2020	Textbook editor, Freeman Biological Sciences, Seventh Edition
2019	Swine Club Fundraiser Faculty Participant, Midwestern University
2018	Scholander Award Judge, American Physiological Society Comparative Physiology: Complexity and Integration Meeting, New Orleans, LA
2018-2019	College of Veterinary Medicine Club Talent Judge, Midwestern University,
2017	Podiatry Council of Faculties Curricular Project Meeting and Review, Dallas, TX
2016	Scholander Award Judge, Experimental Biology Meeting, San Diego, CA
2016	International Science and Engineering Fair Judge, Phoenix, AZ
2016-2018, 22	Brain Bee Judge, Midwestern University
2016	Textbook editor, Freeman Biological Sciences, Sixth Edition
2016	Textbook editor, Hill, Wyse, and Anderson Animal Physiology, Fourth Edition
2015	Grand Canyon Geology Guide, Jacobson Elementary Field Trip, Chandler, AZ
2015	Ask-a-Paleontologist Virtual Conference, OLPH, Glenview, IL
2015	Science Camp Coordinator, Jacobson Elementary, Chandler, AZ
2014	Best Poster Judge, American Physiological Society Intersociety Meeting
2014	Arizona State University Pre-Vet Night Presentation
2014	Development of MWU/ASU Veterinary Internship Program
2013	Careers in Science Presenter, Bogle Jr. High, Chandler, AZ
2010-2018	Best Student Paper Judge, Society of Integrative and Comparative Biology Annual Meeting
2012-present	Ask-a-Biologist Virtual Experiment Developer – *Manduca Growth Experiment*
2010-2013	Career Development Day, Jacobson Elementary School, Chandler, AZ

2007-2013	Lab Safety Manager, Interdisciplinary Science and Technology Building, Arizona State University, Tempe, AZ
2007-present	Co-developer, Giant Insects Educational Website
2006	Vertebrate Paleontology Day, Precious Cargo Learning Center, New Haven, CT
2006	Science Fair Judge, Olin-Yale-Bayer-NHPS Citywide Science Fair
2005	Aspirations for Higher Learning Career Presentation, Yale University
2001-2006	Departmental Athletic Coordinator, Dana Club graduate student organization, Yale University
2004-2006	Departmental Recruitment, Geological Society of America Annual Meeting, Denver, Colorado
2001-2006	Dinosaur Days, Yale Peabody Museum
2001	Going Places/Elmdale Elementary Tutoring Program, University of Michigan
2000	Quetico Provincial Park Counselor
1998-1999	Peer Led Study Group Leader – Organic Chemistry, University of Michigan

Conference and Workshop Organization

2023,24	Immersive Innovation Summit, Arizona State University, Tempe, AZ
2022,23	EAB Presidential Experience Lab with Dreamscape Learn Culver City, CA
2022	Session Chair: Thermoregulation and Thermal Tolerance, Society of Integrative and Comparative Biology, Phoenix, AZ
2020	Session Chair: Getting Real: Multiple Stressors Society of Integrative and Comparative Biology, Austin, TX
2018	Session Chair: Thermal Biology, American Physiological Society Comparative Physiology: Complexity and Integration Meeting, New Orleans, LA
2018-20	Executive Organizing Committee: Arizona Physiological Society Annual Meeting, Tempe, AZ
2017	Session Chair: Thermal Physiology, Society of Integrative and Comparative Biology, New Orleans, LA
2015	Session Chair: Dispersal, Migration and Movement, Society of Integrative and Comparative Biology, West Palm Beach, CA
2014	Session Chair: Evolutionary Physiology, Society of Integrative and Comparative Biology, Austin, TX
2013	Session Chair: Evolutionary Physiology, Society of Integrative and Comparative Biology, San Francisco, CA
2012	Session Chair: Evolutionary Paleobiology, Society of Integrative and Comparative Biology, Charleston, SC
2011	Session Chair: Scaling and Growth, Society of Integrative and Comparative Biology Conference, Salt Lake City, UT
2009	Organizer and Developer, Variable Atmosphere Laboratory Workshop Two, NSF Workshop, Washington D.C.
2008	Organizer and Developer, Design and Scientific Merit of the Variable Atmosphere Laboratory (VAL) NSF Workshop, Tempe, AZ
2005	Technical Session Organizer and Chair; Phanerozoic O_2: Animals, Plants, and Fires, Earth Systems Processes 2, Calgary, Alberta, Canada
2005	Field Trip Organizer: New England Intercollegiate Geological Conference

Journal Reviewer (arranged by impact factor)

Nature, Science, Proceedings of the National Academy of Science, Functional Ecology, American Naturalist, Proceedings of the Royal Society, Evolution, Scientific Reports, Frontiers in Physiology, Biology Letters, Biogeosciences, PLoS One, Journal of Experimental Biology,

Journal of the Royal Society Interface, Ecology and Evolution, Integrative and Comparative Biology, Naturwissenschaften, Comparative Biochemistry and Physiology Part A, Journal of Insect Physiology, Journal of Thermal Biology, Integrative Zoology, Arthropod-Plant Interactions, Journal of Experimental Zoology A, Insect Science, Entomologic Experimentalis et Applicata, Journal of Entomology and Nematology, Journal of Asia Pacific Entomology

Grant Reviewer

National Science Foundation (USA), Analysis and Experimentation on Ecosystems (ANAEE) Major Infrastructure (EU), The National Fund for Scientific and Technological Research (Chile), Lewis and Clark Fund (APS),

Field Work and Fossil Collection

2015	Collection of *Sceloperorus tristichus,* Show Low, AZ
2008	Kaiparowits Basin Project; Denver Museum; Quarrying of fossil plants from the Cretaceous deposits in Grand Staircase-Escalante National Monument, DMNS
2004-2007	*Alligator mississippiensis* egg collection; Rockefeller Wildlife Refuge, Louisiana
2003-2004	Vertebrate fossil excavation; Grand Staircase-Escalante National Monument
2002	Organizer of departmental field trip to Southwestern U.S. for geological survey; Department of Geology and Geophysics, Yale University
2002-2004	Leader of 2002 and 2004 expedition, undergraduate mentor of 2004 expedition: Prospecting and vertebrate fossil collection in Triassic continental deposits of Nevada, Arizona, and New Mexico, Yale University
2002-2003	Organizer of departmental field trip: Geological History of Connecticut; Department of Geology and Geophysics, Yale University

Argonne National Labs, Advanced Photon Source, X-ray Synchrotron Imaging

(awarded competitive beamtime for six separate proposals)

2013	GUP ID 34353 – Heterogeneity and gravity in an insect hemotracheal system
2010	GUP ID 22928 - Tomographic analysis of developmental responses of the insect tracheal system to rearing oxygen level
2010	GUP ID 22512 – Interspecific scaling of the tracheal system in cockroaches
2010, 2011	GUP ID 22517 – Bio-fluid dynamics of high frequency pressure pulsations within live grasshoppers
2009	GUP ID 11942 **–** Imaging fossilized insects in amber to develop a proxy for Paleo-oxygen Levels
2007	GUP ID 8114 – Tracheal system morphology and physiology in ants and cyborg beetles

MENTORING

Mentoring Activities

2015	How to Improve Admissions Decisions and Retention, Hilda Mejia Abreu, Liaison International, Midwestern University
2015	How to be Your Own Best Mentor, Carolee Bull, Midwestern University
2010-11, 2013	Undergraduate Honors Examiner for Paleontology, Swarthmore College, PA
2009	Workshop on Mentoring Strategies, Dr. Janet Branchaw
2009	Mentoring for Postdoctoral Fellows and Students Program, Arizona State University

Midwestern University Students, Residents, and Research Technicians Supervised

Masters of Biomedical Sciences Advisor
Breanna Aikens, Sheena Lyn, Jeffrey Mutterperl, Alec Oliva, Haley Owen, Andrea Romkema, Jon Vimmerstedt, Tony Yao

Masters of Biomedical Sciences Committee Member
Nate Bartholomew, Braden Capt, Brady Mannet, Griffen Merrill, Shivam Patel

College of Veterinary Medicine Summer Fellows
Jonathan Allen, Kayla Allwardt, Gregory Gstrein, Michael Huffaker, Sasha Lisowski, Christopher Maag, Mary Logue, Nicolette Roe

College of Veterinary Medicine Resident
Abigail Finley, Annalise Black

Arizona College of Osteopathic Medicine Summer Fellows
Jacob Christensen, Jason Harmon, Soren Madsen, Kevin Mertz, Gabrielle Pinc, Jon Vimmerstedt

Work Study Students
Jessica Friedman (CVM), Karissa Harder (CVM), Ian Hubbard (CVM), Matthew Olsen (CVM), Anna Ward (CVM), Anthony Zaffino (AZCOM), Kayla Allwardt (CVM), Stephanie Tan (CVM)

Research Technician Direct Supervisor
Kathryn Corbell, Gregory Parker, Charles Schaefer

Visiting Faculty Researchers
Marcin Czarnoleski

Arizona State University Students Advised

PhD Co-advisor
Jacob Youngblood, Dylan Padilla

Undergraduate Honors Student Thesis Committees
Tosin Barbarinde, Armand, Debray, Jacob Fredette-Roman, Jackie Le, Shayan Shiehzadegan, Julian Wagner, Simon Werkhoven

School of Life Sciences Undergraduate Research Fellows
Christopher Abdo, Todd Albert, Taylor Biddulph, Jillian Ciarlariello, Colleen Ford, Jacob Fredette-Roman, Erica Heinrich, Saman Jirjies, Sandra Kovacevic, Milad Manoucheh, Elyse Munoz, Nicholas Pierce, Angela Riley, Yasir Salih, Colton Smith, Collin Teague, Michael Weed

Undergraduate Volunteers
Nikki Appel, Michael Ashley, Jennifer Hale, Megan Kearl, Nile Kristol, Colleen Lundy, Nicholas Munzinger, Choognam Onoe, Frederick Raehl, Benjamin Rice

Visiting Graduate Students/Post-doctoral Fellows
Agustin Camacho, Carmen de Silva, Natalia Szabla, Rory Telemeco

Dreamscape Learn Devlopment Team Student Workers
Sanjana Yalla, Maharshi Patel, Cynthia Baragar, Joshua Dsouza, Sadhir Nazer

National and Regional Presentations by Mentored Students (See Abstracts for relevant citations)

Midwestern University Students (alphabetical order)

Breanna Aikens 2022 "Combining confocal imaging and SDS-page to measure variation in mitochondrial volume and fiber type in primate skeletal muscle: *Society of Integrative and Comparative Biology Annual Meeting* Phoenix, AZ – poster presentation

Jonathan Allen 2018 "Elucidating the role of *Rhipicephalus sanguineus* (the Brown Dog Tick) as a vector for Rocky Mountain Spotted Fever (RMSF) transmission in Arizona" *Experimental Biology Annual Meeting* San Diego, CA – poster presentation

Jonathan Allen 2017 "Rocky Mountain Spotted Fever in Arizona" *Midwestern University One Health Lecture Series* Glendale, AZ – oral presentation

Nate Bartholomew 2015 "Impaired climbing and flight behavior in *D. melanogaster* following carbon dioxide anesthesia." *56th Annual Drosophila Research Conference* Chicago, IL – poster presentation

Nate Bartholomew 2014 CO2 effects on subsequent anesthesia, *55th Annual Drosophila Research Conference* San Diego, CA - poster presentation

Jacob Christensen 2018 **"**Rearing oxygen affects wing vein morphology and flight performance in *Drosophila melanogaster" Society of Integrative and Comparative Biology Annual Meeting* San Francisco, CA – poster presentation

Gregory Gstrein 2016 "Using confocal imaging to understand the effect of atmospheric oxygen on insect respiratory systems." *Experimental Biology Annual Meeting* San Diego, CA – poster presentation (*Scholander award competition finalist)*

Jason Harmon 2017 **"**Tracheolar and mitochondrial investment varies with developmental pO_2 in Drosophila melanogaster" *Society of Integrative and Comparative Biology Annual Meeting* New Orleans, LA – poster presentation

Michael Huffaker 2019 "The effects of rearing oxygen on the thermal tolerance of quail embryos (*Coturnix coturnix*)" *National Veterinary Scholars Symposium* – poster presentation

Sasha Lisowski 2018 "Assessing the feasibility of canine vaccination to prevent Rocky Mountain Spotted Fever in Arizona" *National Veterinary Scholars Symposium: Veterinary Scientists in Global Health Research* College Station, TX – poster presentation

Sheena Lyn 2018 "Variation in atmospheric oxygen levels affects adult insect wing morphology and flight performance" *Experimental Biology Annual Meeting* San Diego, CA – poster presentation

Mary Logue 2021 "Roles of strain-level differences in Rickettsia rickettsii in the spread of Rocky Mountain Spotted Fever in Arizona and the surrounding region" *Student American Veterinary Medical Association Conference* - virtual poster presentation

Mary Logue 2020 "Roles of strain-level differences in Rickettsia rickettsii in vectoring RMSF in Arizona and the surrounding region" *National Veterinary Scholars Symposium* – virtual poster presentation

Christopher Maag 2020 "Development of a comprehensive assessment of the risk of R. rickettsii exposure to people living in Arizona" *National Veterinary Scholars Symposium* – virtual poster presentation

Soren Madsen 2020 "Contribution of canine-based factors to the spread of RMSF in Arizona and Mexico" *Experimental Biology Annual Meeting* San Diego, CA – poster presentation

Jeffrey Mutterperl 2020 "The effect of variation in rickettsial strain genetics on the distribution of Rocky Mountain Spotted Fever in Arizona" *Arizona Physiological Society Annual Meeting* – virtual poster presentation

Alec Oliva 2020 "The role of the phylogeographic distribution of *Rhipicephalus sanguineus* on the spread of Rocky Mountain spotted fever in Arizona and Mexico" *Experimental Biology Annual Meeting* San Diego, CA – poster presentation

Alec Oliva 2019 "Canine-based risk factors drive the spread of RMSF in Arizona and Northern Mexico" *Arizona Physiological Society Annual Meeting* Tempe, AZ – oral presentation

Haley Owen 2019 "Variation in the geographic distribution and rickettsial infection rates of *Rhipicephalus sanguineus* contributes to the spread of RMSF in Arizona and Mexico" *Experimental Biology Annual Meeting* Orlando, FL – poster presentation

Haley Owen 2018 "Determining the prevalence of Rickettsia rickettsii in geographically distinct populations of *Rhipicephalus sanguineus* in Arizona" *Arizona Physiological Society Annual Meeting* Tempe, AZ – oral presentation (*won best graduate student talk award*)

Jon Vimmerstedt, 2019" Testing the OCLTT hypothesis in quail embryos by manipulating thyroid hormone" *Society of Integrative and Comparative Biology meeting* Tampa Bay, FL – poster presentation

Jon Vimmerstedt 2018 "Which precise mechanisms set thermal limits in animals? Testing the OCLTT hypothesis in Japanese quail embr*yos*?" *Arizona Physiological Society Annual Meeting* Tempe, AZ – oral presentation

<u>Arizona State University Students (*alphabetical order)*</u>

Taylor Biddulph 2013 "Effects of the larval oxygen environment on the three-dimensional branching structure of insect flight muscle tracheae" *Society of Integrative and Comparative Biology Meeting* San Francisco, CA – poster presentation

Colleen Ford 2009 "Parabolic Effects of Atmospheric Oxygen on Body Size, Development Time and Growth Rate in *Zophobas Morio*, the Giant Mealworm" *Society of Integrative and Comparative Biology Meeting* Boston, MA – poster presentation

Erica Heinrich. 2010 Mechanisms of hypoxia on body size of *Drosophila melanogaster" Integrative and Comparative Biology* Seattle, WA – oral presentation

Sandra Kovacevic 2013 "Tracheae and Flight Muscle Volumes of Adult Drosophila melanogaster Reared in Hypoxia, Normoxia, and Hyperoxia Using Synchrotron X-Ray Phase Contrast Microtomography" *Society of Integrative and Comparative Biology Meeting* San Francisco, CA – poster presentation

Elyse Munoz 2011 "Interspecific allometry of cockroach tracheal systems and the impact of oxygen on their tracheal development" *Society of Integrative and Comparative Biology Annual Meeting* Salt Lake City, UT – oral presentation

Elyse Munoz 2010 "Effects of Atmospheric Oxygen on Tracheal Systems in *Blatella germanica*, the German Cockroach" *Society of Integrative and Comparative Biology Annual Meeting* Seattle, WA – poster presentation

Elyse Munoz 2010 "The Effect of Paleozoic Oxygen Levels on the Development of the Tracheal System in the Extant *Blatella germanica*, the German Cockroach" *Global Change and Global Science: Comparative Physiology in a Changing World* Westminster, CO – poster presentation

Michael Weed 2011 "The effect of hypoxia and hyperoxia on dragonfly development: a link between Paleozoic oxygen levels and insect gigantism" *Society of Integrative and Comparative Biology Annual Meeting* Salt Lake City, UT – poster presentation

Michael Weed 2010 "Developmental Plasticity in the Tracheal System of *Zophobas morio* Beetles as Visualized by Synchrotron X-Ray Phase Contrast Imaging" *Arizona Imaging and Microscopy Society Meeting* Tempe, AZ – poster presentation (*won best poster award)*

Jacob Youngblood 2022 "Dehydration worsens the chronic heat tolerance and predicted survival of an insect pest: *Society of Integrative and Comparative Biology* Phoenix, AZ – oral presentation

Jacob Youngblood 2019 Dynamics of heat tolerance during development of locusts. *Society of Integrative and Comparative Biology meeting* Tampa Bay, FL – poster presentation

Jacob Youngblood 2018 "Stage-Specific Oxygen Limitation of Thermal Tolerance in *Schistocerca cancellata*" *American Physiological Society Comparative Physiology: Complexity and Integration Meeting* New Orleans, LA – poster presentation

SELECT MEDIA COVERAGE

2024	Phoenix K-6 School Taps Power of VR and Storytelling to Bring Subjects to Life for Students – eSchool News
2024	Phoenix school launching immersive classroom program with virtual reality technology – KTAR News
2024	Merced College opens new virtual reality learning lab this fall. Take a peek inside – Merced SunStar
2024	Telling stories in virtual reality – Evolving with EdPlus
2023	Arizona State's Big Bet on Virtual Reality Labs – Inside Higher Ed
2023	ASU Sees Biology Grades, Student Ratings Improve With VR – Govtech.com
2023	My trip to the Alien Zoo: a virtual Biology 101 class – Hechinger Report
2023	Sometimes a Good Result is Just a Good Result – On EdTech Newsletter, Phil Hill
2023	Virtual reality is finally ready to revolutionize education – Venture Beat
2023	Virtual reality class experience coming to Merced College – Merced County Times

2023	Glendale Community College Brings the Power of Cinematic Storytelling and VR to the Classroom – PR Newswire
2023	Rowan partners with Arizona State, education company in offering new virtual reality classes – Philadelphia Inquirer
2023	New personalized biology curriculum prioritizes student success – ASU News
2023	Dreamscape Learn student workers shape future of immersive education – ASU News
2022	Walter F. Parkes Moves From "WarGames" to Alien Zoos – College Board
2022	Study reveals how deadly tick disease spreads: Multistate analysis reveals an increasing risk for Rocky Mountain Spotted Fever - ASBMB today – Nancy D. Lamontagne
2021	Why are insects small? - Chiko Chan Japanese Game Show, NHK – Japanese Broadcasting Corporation
2020	Insects + Flying + Breathing – Here We Are Podcast
2020	How Insects Cope When Blood Rushes to Their Head – New York Times
2019	Insect Morphology During the Late Carboniferous – Novelty Media
2019	Ancient Atmospheres – Fathomers Creative Institute
2019	Multidisciplinary Team Examines Unique Vectors of Deadly Disease – Midwestern University Magazine
2018	Scientists tried growing prehistoric sized insects, and here's what happened – Reuben Westmass, Curiosity.com
2017-18	Twelve Earths – Installation Art Piece by Michael Jones McKean
2015-16	World's Biggest Beasts - National Geographic Television Documentary
2014	The 4.6 Billion Year Journey of Earth, AYA magazine interview
2013	Insect Dissection – BBC 4 Television Documentary
2011	Bringing up baby - The Loh Down on Science Radio Program
2010	Material World – BBC live radio Interview
2010	Oxygen boost helps dragonflies go large – Amanda Mascarelli, Nature.com
2010	High oxygen levels spawn monster dragonflies – Dave Mosher, Wired.com
2010	Bionic Bugs – Scienceline, NYU
2009	Top 50 inventions of 2009: Cyborg Beetles – Time Magazine
2008	Evolve: Body Size - History Channel television series
2008	First Forests – BBC Radio Interview, Frontiers Programme
2008	Miniworlds may simulate climate change, extraterrestrial and ancient earth's atmospheres – Life Sciences News
2006	Welt voller Sauerstoff – Warum Libellen einmal groβ wie Falken waren (World Full of Oxygen – Why Grasshoppers were once as large as falcons) - Dagmar Röhrlich, Deutschlandfunk Radio Interview
2005	Changes in the Air –Variations in atmospheric oxygen have affected evolution in big ways - Sid Perkins, Science News
2005	Oxygen: Fueled Huge Ancient Insects? - Larry O'Hanlon, Discovery Channel
2005	Alligator Egg Development at Prehistoric Oxygen Levels - Janet Emmanuel, Yale News

PROFESSIONAL SOCIETY MEMBERSHIPS

Scientific Society Memberships

2010-present	American Physiological Society
2005-present	Society of Integrative and Comparative Biology
2002-present	The Paleontological Society
2002-present	The Geological Society of America

2002-present	The Society of Vertebrate Paleontology
1997-present	American Association for the Advancement of Science
1997-2001	American Chemical Society

Museum Affiliations

Smithsonian Institution National Museum of Natural History, Washington, D.C.
Field Museum of Natural History, Chicago, IL
Museum of Comparative Zoology, Harvard University, Cambridge, MA
Peabody Museum, Yale University, New Haven, CT
American Museum of Natural History, New York, NY