

Thomas S. Johnson Distinguished Professor of Biology
Department of Biology, Trinity College, Hartford, Connecticut 06106 USA
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EDUCATION

Ph.D. Cornell University *Field: Zoology; Major: Functional & Evolutionary Morphology*
M.Sc. Cornell University *Field: Zoology*
B.Sc. University of Pittsburgh *Major: Biology; Minor: Chemistry*

ACADEMIC POSITIONS

Thomas S. Johnson Distinguished Professorship (2007-present)
Chair, Dept. of Biology, Trinity College (2003-2013)
Charles A. Dana Research Professorship (2001-2003)
Director, Trinity Electron Microscopy Facility (1997-2009)
Professor of Biology, Trinity College (1998-present); Associate Professor (1992-1997);
Assistant Professor (1988-1992)
Director, Neuroscience Program (1996)
Research Associate, Cell Biology, Vanderbilt University Medical School
Lecturer/ Instructor, Cornell University
Laboratory Coordinator, Cornell University
Teaching Assistant, Cornell University, and New York College of Veterinary Medicine

VISITING SCHOLAR

University of Stellenbosch, Republic of South Africa
Carnegie Museum of Natural History, Pittsburgh

PROFESSIONAL SOCIETY MEMBERSHIPS

International Society of Vertebrate Morphologists	Herpetologists' League
Society for Integrative and Comparative Biology	Smithsonian Institute
American Society of Ichthyologists & Herpetologists	Sigma Xi
Society for the Study of Amphibians & Reptiles	NEURON

RESEARCH INTERESTS

Placental structure, function, and evolution in reptiles
Evolution of viviparity and fetal nutrition in reptiles, amphibians, and fishes
Developmental morphology of the yolk sac and yolk processing in reptiles and birds
History and demise of concepts of biological "race"
History of biology at Trinity College

GRANTS, AWARDS, HONORS

Thomas Church Brownell Prize for Teaching Excellence, 2015

Thomas S. Johnson Distinguished Professorship, 2007- present

Plenary Speaker, International Meeting of Poeciliid Biologists, Univ. of Oklahoma (2017)

Symposium Dedication "In recognition of contributions to the field." *4th International Symposium on Viviparous Fishes*, Morelia, Mexico (2014).

Plenary Speaker: International Congress of Vertebrate Morphology, Barcelona, Spain (2013)

Total external grants & donations: \$1.4 million + ~ \$2.5 million in equipment donations to Trinity

NSF Academic infrastructure grant for the Electron Microscopy Facility (co- *Principle Investigator* C. Geiss). (2016) \$359,000.

Company of Biologists grant to fund the symposium at the 9th International Congress of Vertebrate Morphology, Punta del Este, Uruguay (2010).

Howard Hughes Medical Institute grant (2004-07). *Principal Investigator* \$800,000 awarded. (Collaborative grant with A. Draper and other Trinity faculty).

Faculty Fellow, Institute for the Study of Secularism in Society and Culture, Trinity. *Program on Secularism and Models of Variation & Selection* (2009- 2010); *Program on The Secular Tradition and the Foundations of the Natural Sciences* (2006-07).

Charles A. Dana Research Professorship Award, Trinity (2001-2003).

NSF Academic Research Infrastructure Grant (1999). "Acquisition of a Transmission Electron Microscope for Research and Research Training in the Liberal Arts College Environment." *Principle Investigator* \$224,700 awarded.

NSF Academic Research Infrastructure Grant (1997-1999). Supplemental funding to support the new Electron Microscopy Facility. *Principle Investigator* \$30,000 awarded.

NSF Symposium Grant: expenses for the 1999 IUBS symposium (University of Calgary)

SAAB grant, 1999. Equipment for the McCook TEM lab; \$39,000 awarded.

SAAB grant, 1998. Equipment for Trinity's electron microscopy laboratories. \$11,000 awarded.

DeCamp Foundation, 1996-1997. \$50,000 awarded towards purchase of EM equipment

NECUSE, 1996. Funding to establish a new consortium of institutions, NEURON (North East Undergraduate Research Organization for Neuroscience), including establishment of annual symposia for undergraduate research.

National Endowment for the Humanities, 1995. "Mathematics, Science, and Philosophy: The Role of Laboratories." Grant with the Department of Philosophy to establish laboratories in Trinity's philosophy courses. \$87,200 awarded.

NECUSE, 1995. Funds for publication and distribution of "Methods in Neuroscience," a book of laboratory methods to be used in neuroscience education.

NECUSE, 1994-95. "Workshop on Neuroscience Methodologies: Undergraduate Laboratory Experience." Collaborative grant for a workshop of neuroscience faculty, to develop laboratory methods to be used in teaching. \$29,800 awarded.

NECUSE, 1992-93. Collaborative grant to Trinity's Neuroscience Program to construct a course in neurobiology, and a workshop for neuroscientists from throughout New England. \$24,700.

NSF Symposium Grant: expenses for 1990 American Society of Zoologists Symposium.

NIH Reproductive Biology Training Grant (1986-1988) \$58,000.

Postdoctoral Research Associateship, Vanderbilt University Medical School (1986-88)

Work featured in Research News section of *Science*, vol. 234: 285 [1986]

Sigma Xi Grant in aid, 1981, 1984

University of Pittsburgh, graduation with honors and Biology honors

PROFESSIONAL ACTIVITIES

Scientific conference organized:

Symposium on Developmental Morphology and Evolution of Amniote Eggs & Embryos. 12th International Congress of Vertebrate Morphology, Prague, Czech Republic; July 2019.

Symposium on Fetal Nutritional Specializations in Viviparous Vertebrates. Ninth International Congress of Vertebrate Morphology, Punta del Este, Uruguay; July 2010.

Symposium on Evolutionary Transformations of Fetal Membranes & Reproductive Strategies, 6th International Congress of Vertebrate Morphology. Univ. of Jena, Germany; July 2001

Journal editorships:

Journal of Morphology, Special issue on Fetal Nutritional Adaptations (2015), with J.M. Starck. [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-4687/homepage/VirtualIssuesPage.html](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-4687/homepage/VirtualIssuesPage.html)

Journal of Experimental Zoology, Special issue on *Evolutionary Transformations of Fetal Membranes and Reproductive Strategies* (vol. 299, 2003), with A. Mess and U. Zeller.

Journal of Experimental Zoology B. Molecular and Developmental Evolution 312B; Associate Editor for special issue (vol. 312, 2009).

The International Journal for the Study of Secularism (2012- 2019)

Manuscript reviews: > 189 manuscripts in ~ 74 scientific journals: Acta Zoologica; American Naturalist; American Journal of Anatomy; Amphibia- Reptilia; Anatomical Record; Animal Reproduction Science; Aquaculture; Asian Herpetological Research; Australian Journal of Zoology; Biological Journal of the Linnaean Society; Biological Reviews; Biology Letters; Biology Open; Biology of Reproduction; Bioscience; BMC Evolutionary Biology; Canadian Journal of Zoology; Comparative Biochemistry & Physiology A: Molecular & Integrative Physiology; Comparative Biochemistry & Physiology B: Biochemistry & Molecular Biology; Copeia; Current Zoology; Ecology & Evolution; Ecological Psychology; Environmental Biology of Fishes; eLife; Evolution; Evolutionary Biology; Evolutionary Ecology; Evolution & Development; Functional Ecology; Genome Biology & Evolution; Global Ecology & Biogeography; Herpetologica; Herpetological Conservation & Biology; Herpetological Journal; Herpetological Monographs; Herpetological Review; International Journal of Molecular Sciences; Journal of Anatomy; Journal of Comparative Physiology B; Journal of Experimental Biology; Journal of Experimental Zoology A -- Ecological Genetics & Physiology; Journal of Experimental Zoology B-- Molecular & Developmental Evolution; Journal of Fish Biology; Journal of Herpetology; Journal of Morphology; Journal of Natural History; Journal of Theoretical Biology; Journal of Zoology; Journal of Zoological Systematics and Evolution; Marine & Freshwater Research; Microscopy Research & Techniques; Molecular Biology & Evolution; Nature; Nature Communications; Naturwissenschaften; Natural History; Neotropical Ichthyology; New Zealand Journal of Zoology; Oecologia; Philosophical Transactions of the Royal Society B; Physiological and Biochemical Zoology; Physiological Zoology; Phylomedusa; Placenta; Proceedings of the National Academy of Sciences (USA); Proceedings of the Royal Society of London B; Quarterly Review of Biology; Reproduction; Science; Trends in Genetics; Zoologischer Anzeiger; Zoology

Grant reviews: National Science Foundation; National Geographic Society; American Philosophical Society; Austrian Science Fund (FWF); Australian Research Council

Judge: Reinhard Rieger-Award for Zoomorphology, 2019

Ad hoc consulting: *History Channel, National Wildlife Magazine; Natural History Magazine; Ms. Magazine* (Women in Science issues); “*All Things Considered*” (PBS radio); *Science News*

Book reviews: *CHOICE*; WH Freeman; Association of College and Research Libraries; National Center for Science Education; Quarterly Review of Biology

Book manuscript evaluations:

Ecology & Evolution of Poeciliid Fishes (Univ of Chicago Press); *Functional Neurobiology* (Sinauer); *Evolution of the Vertebrates*, 5th ed. (John Wiley & Sons); *Vertebrate Life*, 6th ed. (Prentice Hall); *Writing in the Life Sciences* (Oxford Univ. Press); *Biology Evolving* (WH Freeman); *Vertebrates: Comparative Anatomy, Function and Evolution* (McGraw Hill); *Reptilian Incubation: Environment, Evolution and Behaviour* (Nottingham Univ. Press); and several others done anonymously

Graduate committee service and thesis reviews:

M.Sc. candidate, Dept. of Biology, Univ. of Tulsa (1990)

Ph.D. candidate, Dept. of Botany and Zoology, Stellenbosch University, South Africa (2007)

Ph.D. candidate, University of Sydney (2011)

Ph.D. candidate, Humboldt- Universität, Berlin (2012)

Ph.D. candidate, University of Sydney (2018)

External Tenure and Promotion Evaluations

Univ. of Sydney; Univ. of Oklahoma (twice); Univ. of Cincinnati; Univ. of Otago (NZ)

Symposium positions:

Council on Undergraduate Research, Trinity College Representative, Wash. DC. (1995)

Symposium Chair, Society for the Study of Reproduction, Ithaca NY (1986)

Chair, Vertebrate Morphology session, American Society of Zoologists, Denver (1984)

Chair, Vertebrate Morphology session, American Society of Zoologists, Dallas (1981)

INVITED PRESENTATIONS AT INTERNATIONAL CONFERENCES

“Functional and evolutionary morphology of yolk processing patterns in reptiles”. Symposium on *Developmental Morphology and Evolution of Amniote Eggs & Embryos*. 12th International Congress of Vertebrate Morphology, Prague, Czech Republic, July 2019.

“Viviparity in poeciliids and other fishes: a functional and evolutionary perspective”. **Plenary Speaker**, *7th International Meeting of Poeciliid Biologists*, Univ. of Oklahoma, May 2017.

“Evolutionary analysis of viviparity and matrotrophy in fishes.” *4th International Symposium on Viviparous Fishes*. Morelia, Mexico, November 2014.

“Placental specializations in placentotrophic viviparous lizards.” Symposium on *Reproduction and Phylogeny of Lizards and Tuatara*. Joint Meeting of Ichthyologists and Herpetologists, Chattanooga, TN; Aug. 2014.

“Functional morphology and evolution of placentas in viviparous reptiles.” **Plenary Speaker**, International Congress of Vertebrate Morphology, Barcelona, Spain; July 2013.

“Phylogeny of fetal nutritional specializations in vertebrates.” Symposium on *Fetal Nutritional Specializations in Viviparous Vertebrates*. Ninth International Congress of Vertebrate Morphology, Punta del Este, Uruguay; July 2010.

“Morphological specializations for placentotrophy in viviparous African lizards” (with A.F. Flemming). Symposium on *Fetal Nutritional Specializations in Viviparous Vertebrates*. Ninth International Congress of Vertebrate Morphology, Punta del Este, Uruguay; July 2010.

“Evolution of placentation in thamnophine snakes,” with J.R. Stewart. Invited presentation to the symposium *Reproduction in Snakes*. American Society of Ichthyologists and Herpetologists, Oregon; July 2009.

“Evolution of vertebrate viviparity and matrotrophy: an overview.” Invited presentation to the symposium *Viviparity in Fishes*. American Society of Ichthyologists and Herpetologists, Oregon; July 2009.

Specializations for placentotrophy in African skinks and their evolutionary implications.” With A.F. Flemming, *Symposium on Reproduction in Reptiles: From Genes to Ecology*. Sixth World Congress of Herpetology, Manaus, Brazil, August 2008.

“Reproduction in reptiles: a retrospective and prospective vision.” *Symposium on Reproduction in Reptiles: From Genes to Ecology*, Sixth World Congress of Herpetology, Manaus, Brazil, August 2008.

“Evolution of fetal membranes and placentation in reptiles”. With A.F. Flemming, *Symposium on Trends in Evolution of Amniote Embryos*. 8th International Congress of Vertebrate Morphology. Pierre and Marie Curie University and Muséum National d’Histoire Naturelle, Paris, France, July 2007.

- "Evolution of matrotrophy in vertebrates." *Third International Symposium on Viviparous Fishes*. Morelia, Mexico, November 2006.
- "The reptilian model for the evolution of viviparity: its potentials and limitations." *Symposium on the Evolution of Viviparity*. World Congress of Herpetology University of Stellenbosch, Republic of South Africa, June 2005.
- "Close contacts of the giant kind: on placental interfaces in matrotrophic lizards." With A.F. Flemming. Fifth World Congress of Herpetology, Stellenbosch, South Africa, June 2005.
- "An amniote perspective on piscine viviparity." *Second International Symposium on Live-Bearing Fishes*. Universidad Autónoma de Querétaro, Mexico, 2002.
- "Evolution of specializations of the extraembryonic membranes of reptiles and birds." *Symposium on Evolutionary Transformations of Fetal Membranes and Reproductive Strategies*, 6th International Congress of Vertebrate Morphology. University of Jena, Germany, 2001.
- "Evolution of placentotrophy in viviparous African lizards," with A. F. Flemming. 6th International Congress of Vertebrate Morphology. University of Jena, Germany, 2001.
- "Viviparity: past research, future directions, and appropriate models." *Symposium on the Evolution of Viviparity*. International Congress of Comparative Physiology & Biochemistry. Univ. of Calgary, Canada, 1999.
- "Phylogenetic analysis of viviparity in fishes." *International Symposium on Viviparity in Fishes*. Cuernavaca, Mexico, 1998.
- "Uterine contributions to placentation in viviparous reptiles." *Symposium on Comparative Structure of the Oviduct and Uterus in Non-Mammalian Vertebrates*. 5th International Congress of Vertebrate Morphology. University of Bristol, England, 1997.
- "Punctuated Equilibrium and Saltationist Models for the Evolution of Viviparity in Squamates". American Museum of Natural History, Evolution/ Ecology Seminar Series; co-sponsored by the City University of New York, 1996.
- "Lactation: Historical patterns and potential for manipulation". Keynote Speaker, *Symposium on "Limits to Lactation: Lessons From Comparative Biology"*. American Dairy Science Association, Columbus, Ohio
- "Chorioallantoic placentation in reptiles". Tenth International Symposium on Morphological Sciences: *Comparative Placentation and Gestation in Vertebrates*. Toronto, Canada.
- "Convergent evolution of adaptations for fetal nutrition in viviparous vertebrates". International Symposium: *Evolution of Viviparity in Vertebrates*. American Society of Zoologists, San Antonio, Texas
- "Evolution of viviparity and placentation in squamate reptiles". American Museum of Natural History/ NYC.

COURSES TAUGHT

Trinity College:

20 courses: Electron Microscopy & Lab; Vertebrate Zoology & Lab; Histophysiology & Lab; Evolution of Life; Biological Systems; History of Evolutionary Thought; Microscopic Techniques; Biological Electron Microscopy & Lab; Ideas About Evolution; Animal Adaptations & Environment; Neuroscience Methodology Lab; Genomics Research Program Seminar; Biology Research Seminar; Introduction to Organisms & Populations; Principles of Neuroscience: Neurobiology; Evolution, Sex, & Human Nature; Laboratory Research in Biology; What is Evolution? (adult education); Darwin's *Origin of Species* (adult education); + guest lecturer for 20 other courses

Cornell University (as Lecturer):

Functional & Evolutionary Morphology; Histology

Cornell University (as Lab Instructor):

Gross Anatomy of Domestic Animals (veterinary students); The Vertebrates (Vertebrate Zoology); Physical Analysis of Movement; Vertebrate Morphology; Human Biology: Laboratory & Field Methods; Histology; Introductory Biology for non-majors; Introductory Biology for biology majors; Accelerated Introductory Biology

ACADEMIC SERVICE

Trinity College committees (* = major committees)

- * Appointments and Promotions Committee (2008- 2010; 2016-2018 [chair])
- * Implementation Committee for Building Community at Trinity College:
 - Support and Compliance Subcommittee for Social Organizations (2013)
 - Electron Microscopy Advisory Committee (2013- present)
 - Life Sciences construction committees (2010- 13)
 - Faculty Conference Committee (2005-2008)
 - New Science Building Committee (2007- 2008)
- * Search Committee, **Dean of the Faculty** (2005-06)
- * Search Committee, **President of Trinity College** (2004-05)
- * Teaching and Research Cornerstone Committee (2004-05)
- * Howard Hughes Medical Institute Grant Committee (2003- 2011)
- * Global Education Advisory Committee (2003-present)
- * Committee on Academic Standards and Excellence (1999-2002; 2005-06)
- * Search Committee, Faculty Grants Officer (1999)
 - International Programs Advisory Committee (1998-99)
 - Task Force I, for revising the Area Studies curriculum (1997-98)
- * Dean of the Faculty's Committee of Eight (1996-97)
- * Committee on Re-Accreditation [Self-Study Steering Committee] (1995-96)
- * Search Committee, **Dean of the Faculty** (1995-96)
 - Extra-departmental faculty searches: Cognitive Psychobiology (1994); Analytical Chemistry (1995); Medical Anthropology (1998)
- * Strategic Planning Committee (1991-93)
- * Educational Policy Committee (1991-94)
- * Curriculum Committee (1990-91)
- * Neuroscience Coordinating Committee (1993 - present)
 - Math Advisory Committee (1990)
 - Electron Microscope Facility construction committee (1996-97)
 - Howard Hughes Medical Institute Grant Committee (1995)
 - Ad hoc* Committee on Earth Sciences (1993)
 - Coordinating Committee, Interdisciplinary Science Program (1990-92, 1997)
 - Ad hoc* Committee on the LSC Computer Facilities (1989-91)
 - Ad hoc* Committee on the science distribution requirement (1990-91)

Teaching and undergraduate research workshops***Co-organized and hosted:***

Project Kaleidoscope symposium, Undergraduate Neuroscience Education: From the Enchanted Loom to the World Wide Web, Trinity College, June, 2001.

Annual symposia of NEURON (North East Undergraduate Research Organization for Neuroscience), Trinity College, 1997, 1998, 1999; Wellesley College, 2000.

NECUSE-funded workshop to establish NEURON as a new organization, Trinity, 1996.

NECUSE-funded workshop "Neuroscience Methodologies: The Undergraduate Laboratory Experience." involving faculty from throughout the northeast, Trinity College, 1994.

NECUSE-funded summer symposium: "The Neuroscience Curriculum at Undergraduate Institutions," Trinity College, 1993.

Participated:

Annual NEURON symposium, Wellesley College, 2000, 2001.

"Funding Strategies for Scientists Who Combine Research and Teaching: Integration of

Research and Education.” Wellesley College (1996).
 “Teaching Critical Thinking in Science and Mathematics,” Trinity College (1996).
 Council on Undergraduate Research, April Dialogue at the NSF and National Academy of Sciences; Arlington Va. and Washington, DC (1995).
 Trinity Math Center, Data Analysis Workshop (1991).
 Math Across the Curriculum Symposium, Trinity College (1990).
 NECUSE conference on software for biological education, Smith College (1990).
 NECUSE workshop on the teaching of introductory biology, Wellesley College (1989)
 Writing Across the Curriculum Symposium, Trinity College (1989)

Facilities planning workshops

Project Kaleidoscope Workshop: Planning Facilities for Undergraduate Science & Mathematics. Meredith College, North Carolina (March 2006).

College funding efforts

Howard Hughes Medical Institute grant initiatives (1992, 1995, 2003, 2008)
 NSF AIRE grant initiative (1999) (Award for Integration of Research & Education)
 Luce Foundation professorship (1999)
 Beckman Foundation grant initiatives (annual, 2003 through 2019)
 Keck Foundation grant initiative (1996-97)
 NSF ARI Laboratory Renovation initiative (1996)
 Annual Fund Campaign, 1995 (campaign to fund Summer Research Assistantships)
 Trinity Explorations project (1994)
 Hoffman Foundation grant initiative (1993)

Community service

Co-organizer and College Liaison, Connecticut State Science Fair (1990)
 Judge for Connecticut Science Fair (1989, 1990, 1991, 1994, 1997, 2000)
 Participation in Classical Magnet Program, Hartford Public High School
 Judge, Association for Women Veterinarians, Distinguished Service Award (1994)
 Keynote speech and awards presentation, Connecticut Science Fair (1990)
 Assistance to CPEP Program, Quirk Middle School
 Sponsorship of high school student research: Crosby High School, Waterbury CT

Trinity College public presentations and panels

“History of Neuroscience at Trinity College”. Keynote address at the “25 Years of Neuroscience” celebration, April 2016.
 “Why Race is Not a Biological Concept” (2014).
 “Academic rigor and grade inflation: Where do we stand?” Center for Teaching and Learning, March 2012.
 “Natural selection and its implications.” Institute for the Study of Secularism in Society & Culture, Trinity College, *Program on Secularism and Models of Variation & Selection* (2010)
 “Charles Darwin’s *Origin of Species*: A Sesquicentennial Celebration.” Trinity College, 2009.
 “A World in a Grain of Sand: Student Biology Research at Trinity College and Why it Matters”. Inaugural Address, Thomas S. Johnson Distinguished Professorship, Oct 2008.
 Institute for the Study of Secularism in Society and Culture, Trinity College, *Program on The Secular Tradition and the Foundations of the Natural Sciences* (2006-07).
 Institute for the Study of Secularism in Society and Culture. Conference on *Secular Traditions in the Liberal Arts*. Institute for the Study of Secularism in Society and Culture; Lenox MA (May 2006).
 “Intelligent design and creationism.” Presentation to the Hartford Ethics and Philosophy Discussion Group (Nov. 2005)
 “Trinity’s One Millionth Volume: A Natural Selection.” Trinity College Library, Keynote Presentation to

- recognize Trinity's acquisition of its one millionth volume (Nov. 2004).
- "Ethical issues in research involving human subjects," panel discussion leader, Scientific Freedom and Responsibility Symposium (March 2002)
- "Caring for survivors of torture: restoring the dignity of the human spirit" panel discussion Truth, Justice & Reconciliation Lecture series, Human Rights Program (March 2002)
- "Development of an undergraduate Neuroscience program: issues, challenges, and strategies. "Project Kaleidoscope symposium, Undergraduate Neuroscience Education: From the Enchanted Loom to the World Wide Web, Trinity College; June 2001.
- "Theories of race." Panel discussion on "Race and Racism in Theory and in Practice" (Sept. 2000)
- "The role of liberal arts colleges in science education and scholarship." Symposium on "The Liberal Arts College in the 21st Century: Challenges and Responsibilities." (Feb., 1998)
- "Does race have a biological basis?" Trinity Symposium on "The Concept of Race" (1998)
- "The first diasporas: human origins and the peopling of the globe." Diaspora and Human Migration Lecture Series (1998)
- "Visions of deep time: why history matters." Symposium on "The Uses of History." Trinity College (Feb. 1998).
- "Biology, race, and human evolution" (1996).
- "A punctuated equilibrium model for viviparity" (1995).
- "Evolutionary origins of the mammary gland" (1993).
- "Giant cells of the rabbit placenta" (1991).
- "The role of research in science education" Connecticut Science Fair (1990).
- "Scars of human evolution" Faculty of Arts & Sciences Lecture Series (1990).

PUBLICATIONS

Edited volumes

- Blackburn, D.G. (1996), editor. *Methods in Neuroscience: The Undergraduate Laboratory Experience*. Trinity College Press, Hartford, CT. 150 pp.
- Blackburn, D.G., A. Mess, and U. Zeller (2003), editors: *Evolutionary Transformations of Fetal Membranes and Reproductive Strategies*. Journal of Experimental Zoology, volume 299.
- Blackburn, D.G. and M.K. Richardson (2009), editors. *Trends in Evolution of Amniote Embryos*. Journal of Experimental Zoology B. Molecular and Developmental Evolution, vol. 312.
- Starck, J.M. and D.G. Blackburn (2015), editors. Fetal Nutritional Adaptations. Special issue of the *Journal of Morphology*, published online at [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-4687/homepage/VirtualIssuesPage.html](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-4687/homepage/VirtualIssuesPage.html)

Peer- reviewed research publications

(* indicates a Trinity research student)

- 1982 Blackburn, D.G. Evolutionary origins of viviparity in the Reptilia. I. Sauria. Amphibia - Reptilia 3: 185-205.
- 1983 Vitt, L.J. and D.G. Blackburn. Reproduction in the lizard *Mabuya heathi* (Scincidae): a commentary on viviparity in New World *Mabuya*. Canadian Journal of Zoology 61: 2798-2806.

- 1984 Blackburn, D.G. From whale toes to snake eyes: comments on the reversibility of evolution. *Systematic Zoology* 33: 241-245.
- “ Blackburn, D.G., L.J. Vitt, and C.A. Beuchat. Eutherian-like reproductive specializations in a viviparous reptile. *Proceedings of the National Academy of Science* 81: 4860-4863.
- 1985 Blackburn, D.G. Evolutionary origins of viviparity in the Reptilia. II. Serpentes, Amphisbaenia, and Ichthyosauria. *Amphibia - Reptilia* 5: 259-291.
- “ Blackburn, D.G., H.E. Evans, and L.J. Vitt. The evolution of fetal nutritional adaptations. In: *Vertebrate Morphology* (H.-R. Duncker and G. Fleischer, eds.). *Fortschritte der Zoologie* 30: 437-439. Gustav Fischer, Stuttgart.
- “ Hayssen, V. and D.G. Blackburn. alpha-Lactalbumin and the origins of lactation. *Evolution* 39: 1147-1149.
- 1986 Blackburn, D.G. and H.E. Evans. Why are there no viviparous birds? *American Naturalist* 128: 165-190.
- 1988 Blackburn, D.G., J.M. Taylor, and H.A. Padykula. Trophoblast concept as applied to therian mammals. *Journal of Morphology* 196: 127-136.
- “ Stewart, J.R. and D.G. Blackburn. Reptile placentation: structural diversity and terminology. *Copeia* 1988: 839-852.
- 1989 Blackburn, D.G., V. Hayssen, and C.J. Murphy. The origins of lactation and the evolution of milk: a review with new hypotheses. *Mammal Review* 19: 1-26.
- “ Blackburn, D.G., K.G. Osteen, W.P. Winfrey, and L.H. Hoffman. Obplacental giant cells of the domestic rabbit: development, morphology, and immunolocalization of intermediate filaments. *Journal of Morphology* 220: 185-203.
- 1990 Stewart, J.R., D.G. Blackburn, D.C. Baxter, and L.H. Hoffman. Nutritional provision to the embryos in a predominantly lecithotrophic placental reptile, *Thamnophis ordinoides* (Squamata: Colubridae). *Physiological Zoology* 63: 722-734.
- 1991 Blackburn, D.G. Evolutionary origins of the mammary gland. *Mammal Review* 21: 81-96.
- “ Vitt, L.J. and D.G. Blackburn. Ecology and life history of the viviparous lizard *Mabuya bistriata* (Scincidae) in the Brazilian Amazon. *Copeia* 1991: 916-927.
- 1992 Blackburn, D.G. Convergent evolution of viviparity, matrotrophy, and specializations for fetal nutrition in reptiles and other vertebrates. *American Zoologist* 32: 313-321.
- “ Blackburn, D.G. and L.J. Vitt. Reproduction in viviparous South American lizards of the genus *Mabuya*. In: *Reproductive Biology of South American Vertebrates: Aquatic and Terrestrial*, pp. 150-164 (W. Hamlett, ed.). Springer-Verlag, New York.
- “ * Yekta, N. and D.G. Blackburn. Sexual dimorphism in mass and protein content of the forelimb

- muscles of the northern leopard frog, *Rana pipiens*. Canadian Journal of Zoology 70: 670-674.
- 1993 Blackburn, D.G. Standardized criteria for the recognition of reproductive modes in squamate reptiles. Herpetologica 49: 118-132.
- “ Blackburn, D.G. Histology of the late-stage placentae of the matrotrophic skink *Chalcides chalcides* (Lacertilia: Scincidae). Journal of Morphology 216: 179-195.
- “ Blackburn, D.G. Chorioallantoic placentation in squamate reptiles: structure, function, development, and evolution. Journal of Experimental Zoology 266: 414-430.
- “ Blackburn, D.G. Lactation: historical patterns and potential for manipulation. Journal of Dairy Science 76: 3195-3212.
- 1994 Blackburn, D.G., and C.W. Schneider. Old wine in a new bottle: evolution by another name. Journal of Theoretical Biology 171: 233-237.
- “ Blackburn, D.G. Discrepant usage of the term “ovoviviparity” in the herpetological literature. Herpetological Journal 4: 65-72.
- “ Blackburn, D.G. Standardized criteria for the recognition of developmental nutritional patterns in squamate reptiles. Copeia 1994: 925-935.
- 1995 * Lynch, L. and D.G. Blackburn. Effects of testosterone administration and gonadectomy on nuptial pad morphology in overwintering male leopard frogs, *Rana pipiens*. Amphibia-Reptilia 16: 113-121.
- “ Blackburn, D.G. Saltationist and punctuated equilibrium models for the evolution of viviparity and placentation. Journal of Theoretical Biology 174: 199-216.
- “ Blackburn, D.G. Paleontology meets the creationist challenge. Creation/ Evolution: Reports of the National Center for Science Education 15: 26-38. *Refereed review*.
- “ Blackburn, D.G., *R.S. Darrell, *K.T. Lonergan, *R.P. Mancini, and *C.A. Sidor. Differential androgen sensitivity of sexually dimorphic forelimb muscles of male leopard frogs, *Rana pipiens*: test of a model system. Amphibia-Reptilia 16: 351-356.
- 1997 Blackburn, D.G., and I.P. Callard. Morphogenesis of the placental membranes in the viviparous, placentotrophic lizard *Chalcides chalcides* (Squamata: Scincidae). Journal of Morphology 231: 35-55.
- “ * Epstein, M.S. and D.G. Blackburn. Histology and histochemistry of androgen-stimulated nuptial pads in the leopard frog, *Rana pipiens*, with notes on nuptial gland evolution. Canadian Journal of Zoology 75: 472-477.
- 1998 Blackburn, D.G. Reconstructing the evolution of viviparity and placentation. Journal of Theoretical Biology 192: 183-190.

- “ Blackburn, D.G., S. Kleis-San Francisco, and I. P. Callard. Histology of abortive egg sites in the uterus of a viviparous, placentotrophic lizard, the skink *Chalcides chalcides*. *Journal of Morphology* 235: 97-108.
- “ Blackburn, D.G. and * V.A. Bernardo. Sexual dimorphism and testosterone responsiveness in hypaxial muscles of the leopard frog, *Rana pipiens*. *Amphibia - Reptilia* 19: 269-279.
- “ Blackburn, D.G. Structure, function, and evolution of the oviducts of squamate reptiles, with special reference to viviparity and placentation. *Journal of Experimental Zoology* 282: 560-617.
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