

**CURRICULUM VITAE  
JAMES PAUL COLLINS**

**ADDRESS**

Arizona State University  
School of Life Sciences  
PO Box 874501  
Tempe, AZ 85287-4501

Voice: 480-965-4578  
FAX: 480-965-6899  
E-mail:jcollins@asu.edu

**EDUCATION**

<u>Institution</u>	<u>Degree</u>	<u>Year Granted</u>
Manhattan College	B.S.	1969
University of Michigan	M.S.	1971
University of Michigan	Ph.D.	1975

**AREAS OF SPECIALIZATION AND INTEREST**

Ecology and evolution of host-pathogen biology; causes of the global decline of amphibians; evolution of life history characters; intellectual history of ecology's development as a science; ecological ethics; adaptation to change in academic and research institutions

**PROFESSIONAL EMPLOYMENT**

<u>Employer</u>	<u>Title or Rank</u>	<u>Year</u>
Arizona State University	Assistant Professor	1975-80
Arizona State University	Associate Professor	1980-1990
Arizona State University	Professor	1990- present
National Science Foundation	Director, Population Biology and Physiological Ecology Program	1985-1986
Arizona State University	Chairman, Zoology Department	1989-1997
Arizona State University	Chairman, Biology Department	1997-2002
Arizona State University	Virginia M. Ullman Professor of Natural History and the Environment	2000- present
National Science Foundation	Assistant Director for Biological Sciences	2005- 2009

**AFFILIATED FACULTY MEMBERSHIP**

**ASU**

Barrett, The Honors College  
Center for the Study of Law, Science, and Technology  
Center for Biology and Society  
Center for Evolution and Medicine  
Consortium for Science and Policy Outcomes, Affiliated Scholar  
Global Institute of Sustainability, Senior Sustainability Scientist  
Global Drylands Center Faculty Affiliate  
Environmental Life Sciences Faculty  
School for the Future of Innovation in Society  
Institute for the Future of Innovation in Society, Fellow  
Lincoln Center for Applied Ethics

**HONORS**

Sigma Xi, The Scientific Research Honor Society (1976)  
Fellow, American Association for the Advancement of Science (1986)  
Irving S. Cooper Visiting Professor and Lecturer, Mayo Clinic/Scottsdale (1999)  
Pettingill Lecturer in Natural History, The University of Michigan Biological Station (2000)  
Virginia M. Ullman Professor of Natural History and the Environment (2000)  
Thomas Hall Memorial Lecturer, Washington University, St. Louis (2000)

Bonchek Fellow, Franklin and Marshall College, Bonchek Institute for Science and Public Policy (2002)  
Distinguished Faculty Award, College of Liberal Arts and Sciences, ASU (2003)  
Gary Krahenbuhl Difference Maker Award, College of Liberal Arts and Sciences, ASU (2005)  
Fellow, Association for Women in Science (2006)  
Perspectives of Science Leaders Address, American Society of Plant Biology (2007)  
Kaeser Visiting Scholar, University of Wisconsin, Madison (2009)  
Distinguished Lecturer in Life Science, Huck Institutes of the Life Sciences, Penn State University (2010)  
President's Science Symposium Address, Bowdoin College (2011)  
President, American Institute of Biological Sciences [AIBS] (2011)  
Phi Beta Kappa Lifo Amundson Lecture, University of South Dakota (2012)  
HHMI Distinguished Plenary Lecturer, Undergraduate Research Symposium, University of Delaware (2014)  
Sigma Xi Distinguished Lecturer (2018-2020)  
Henry S. Fitch Award for Excellence in Herpetology from the American Society of Ichthyologists and Herpetologists (2018)

## **PROFESSIONAL PARTICIPATION**

### **Membership in Professional Associations**

American Association for the Advancement of Science; American Institute of Biological Sciences; Ecological Society of America; Society for the Study of Evolution; American Society of Ichthyologists and Herpetologists; Scientific Research Honor Society (Sigma Xi); American Society of Naturalists; International Society for the History, Philosophy and Social Studies of Biology; Association for Women in Science; Marine Biological Laboratory Corporation

### **Advisory Board Memberships**

Board on Life Sciences, National Research Council, National Academy of Sciences (2014-present [Chairman])  
Committee on Gene Drive Research in Non-Human Organisms: Recommendations for Responsible Conduct, National Academy of Sciences (2015-2016 [co-Chair])  
Board of Directors, American Institute of Biological Sciences (2010, 2011 [Chairman], 2012-2015)  
Board of Directors, Association of American Colleges and Universities (2011-present; Vice Chair of Board, 2015; Chairman, 2016)  
Advisory Board, Association for Women in Science ADVANCE Resource and Coordination Network (2017 – present)  
Board of Directors, National Ecological Observatory Network (2011, 2012-2016 [Chairman])  
Board of Delegates, Oxford University Press (2008-present)  
Committee on Science, Engineering and Public Policy, American Association for the Advancement of Science (AAAS) (2013-2016)  
Advisory Board, Georgetown University's Environment Initiative (2013-present)  
Advisory Board, Biofrontiers Institute, University of Colorado-Boulder (2011-present)  
Advisory Board, IQ Biology—Interdisciplinary Quantitative Biology, University of Colorado-Boulder (2011-present)  
Advisory Board, National Geographic Society “FieldScope: Collaborative Mapping for Education” Project (2011-present)  
Science Advisory Board for Tropical Ecology Assessment and Monitoring (TEAM) Network, Conservation International (2007-present)  
Advisory Committee, Gordon Research Conference on Undergraduate Biology Education Research (2014—present)

Scientific Advisory Committee, History and Philosophy of Science, Marine Biological Laboratory (2009-2011)

Advisory Council to the National Institutes of Health National Center for Research Resources [NCRR] (2007-2009)

Advisory Committee to the Assistant Director of the National Science Foundation for Biological Sciences (1998- 2004; Chair 2002-2004)

Advisory Committee for Environmental Research and Education, Assistant Director of the National Science Foundation for Geological Sciences (2000-2004; Convenor 2000-2001).

Chairman, Board of Directors, Declining Amphibian Populations Task Force (2003-2006)

Chairman, U.S. National Science and Technology Council's Committee on Science Subcommittee on Biotechnology (2005-2009)

U.S. National Science and Technology Council's Committee on Homeland and National Security Subcommittee on Foreign Animal Disease Threats (2005-2009)

Co-Chair, U.S. National Science and Technology Council's Committee on Science Interagency Working Group on Plant Genomes (2005-2009)

U.S. National Science and Technology Council's Committee on Science Interagency Working Group on Scientific Collections (2005-2009)

U.S. National Science and Technology Council's Committee on Natural Resources Subcommittee for the U.S. Group on Earth Observations (2007-2009)

### **Service to Professional Organizations**

Member, Editorial Board, CBE-Life Sciences Education (2015-2017)

National Science Foundation, Search Committee Member for Director of Biological Sciences (2013-2014)

U.S. National Academy of Sciences National Research Council committee on *Thinking Evolutionarily: Making Biology Education Make Sense* (2011)

Principal NSF contact to US Group on Earth Observations [USGEO] (2006-2009)

Consultant to the Office of the Director of the National Science Foundation (2009-2010)

Co-Chair, Organizing Committee for the Amphibian Action Plan Summit, Conservation International, Washington, D.C. (2005)

Co-Chair, International Union for the Conservation of Nature, Species Survival Commission Amphibian Specialist Group (2005-2011; member 2012-2020)

Historical Records Committee, Ecological Society of America (1983-88)

George Mercer Award Committee, Ecological Society of America (1987-1988)

Young Investigator Awards Committee (Chairman), American Society of Naturalists (1987-1988)

### **Community Service**

The Arizona Arts, Sciences and Technology Academy: Founding Fellow; Board of Governors (2004-2005)

Southwest Center for Education and the Natural Environment: President (1994-95); Secretary (1993-94); Treasurer (1991-93); member, Board of Directors (1991-present)

Arizona State Parks Board Natural Areas Program Advisory Committee Vice Chair (2000-2004); Committee member (2000-2004)

Mesa (Arizona) Southwest Museum: member, search committee for director (2001)

### **Peer Review Activities**

Member, Board of Editors, *Evolution* [The Society for the Study of Evolution] (1995-1998)

Member, Board of Editors, *Ecology* and *Ecological Monographs* [Ecological Society of America] (1990-93)

Member, Frederick Ness Book Award for Understanding and Improving Liberal Education Committee, Association of American Colleges & Universities (2013-2014)

Member, National Science Foundation's Graduate Research Fellowship Program review panel (2013)

External reviewer for proposed MS and MA programs in Urban Ecology, Office of the Provost, Hofstra University (2011)

Member, External review team for the Department of Ecology and Evolution, State University of New York at Stony Brook (2005)

Member, External review team for the Department of Zoology, Oklahoma State University (2005)

Ad hoc Review Committee, Office of the President, Harvard University (2004)

External reviewer for the Department of Zoology, University of Oklahoma (2004)

Member/Chair, External review team for Department of Ecology, Evolution, and Natural Resources, Rutgers University (2003)

Member, National Science Foundation's Committee of Visitor's for oversight review of the Ecological Studies Cluster, Division of Environmental Biology (2002).

Member, External review team for Department of Zoology, Miami University/Ohio (2001)

Member, Protocol Evaluation Panel for Cultural Resources of the Grand Canyon, Grand Canyon Research and Monitoring Center and the Bureau of Reclamation (2000)

Member, National Science Foundation's Committee of Visitor's for oversight review of the Developmental Mechanisms Cluster, Division of Integrative Biology and Neuroscience (2000)

Member, National Science Foundation's Committee of Visitor's for oversight review of the Division of Environmental Biology (1999)

Member, External review team for Department of Biological Sciences, Florida State University (1999)

Member (Chairman) NSF Population Biology Program's "Population Biology Task Force" (1998)

Member, National Science Foundation's Site Visit Review Teams for Research Training Grants in Ecology (1997)

Member, National Science Foundation's Advisory Panel for Postdoctoral and Professional Development Awards in Science, Technology and Society Program [Research in History, Social Studies, and Philosophy of Science and Technology] (1991)

Member (Chairman), National Science Foundation's Committee of Visitor's for oversight review of the Ecological Studies Cluster (1992)

Member, National Science Foundation's Advisory Panel for Research Training Grants Program (1993, 1989)

Member, National Science Foundation's Site Visit Review Panel for Research Training Grant site in Ecological Economics (1990)

Member, Environmental Protection Agency's Advisory Panel for Environmental Monitoring and Assessment Program (EMAP) [Desert and Rangelands] (1989)

Member, National Science Foundation's Expert Panel in Systematic Biology to evaluate the use of morphometrics for research in evolutionary biology (1989)

Member, National Science Foundation's Site Visit Review Panel for Science and Technology Center in Mathematical Biology (1988)

Member, National Science Foundation's Advisory Panel for Research Experiences for Undergraduates Program (1988)

Member, National Science Foundation's Population Biology and Physiological Ecology Program Advisory Panel (1984-1985)

Review of grant proposals for Bureau of Reclamation, European Science Foundation, Natural Sciences and Engineering Research Council of Canada, National Science Foundation (Panels = Population Biology; Ecology; Systematics; Regulatory Biology; Division of International

Programs; History and Philosophy of Science), USDA Forest Service, US Geological Survey Amphibian Research and Monitoring Initiative.

Pre-publication review of manuscripts for American Naturalist, American Midland Naturalist, Animal Conservation, Behavioral Ecology, Biology and Philosophy, Biological Invasions, Biological Conservation, BioScience, Biotropica, Canadian Journal of Zoology, Copeia, Conservation Biology, Ecology, Ecology Letters, Ecological Monographs, Environmental Science and Technology, Evolution, Frontiers in Ecology and the Environment, Herpetologica, Herpetological Journal, Highlights for Children, Journal of Animal Ecology, Journal of Herpetology, Journal of the History of Biology, Journal of Responsible Innovation, Physiological Zoology, PLOS Biology, Proceedings of the National Academy of Sciences (USA), Proceedings of the Royal Society B Biological Sciences, Quarterly Review of Biology, Science, Systematic Biology, The National Academies (USA), Trends in Ecology and Evolution, Western North American Naturalist

### **COURSES TAUGHT**

**Undergraduate:** Fundamentals of Ecology; Introduction to Subtropical Marine Biology (field course in the Bahamas); Marine Biology; Evolution: Historical and Philosophical Perspectives; Organic Evolution; Introductory Biology; Life Sciences Career Paths.

**Undergraduate/Graduate:** Biometry; Professional Values in Science.

**Graduate:** Populations: Evolutionary Ecology; Quantitative Ecology; various seminars.

### **SERVICE**

#### **School of Life Sciences**

Faculty Leader; Ecology, Evolution, and Environmental Sciences	2003 - 2005; 2009-present
Executive Committee	
Search Committee, Manager of Undergraduate Programs	2003 - 2005; 2009-present
Bioethics Search Committee	2003
Search Committee (Chair), Ecology of Infectious Diseases	2003 - 2004; 2010
Planning Committee	2003 – 2004
Biology Education Search Committee	2013 – 2014
Philosophy of Biology Search Committee	2014 -- 2015

#### **Departmental Committees**

Search Committee for Wildlife Biologist	1975-1976, 1980-1981
Graduate Admissions Committee	1976-1977
Advisory Committee	1976-1978, 1982-83, 1986
Advisory Committee (Chairman)	1987-1988
Search Committee for Maytag Professorship	1976-1977, 1979-1980
Search Committee for Maytag Professorship (Chairman)	1984-1985
Ecology Seminar Committee (Co-chairman)	1976-80, 1984-85, 1987-88
Graduate Research Committee	1977-1978
Graduate Research (Chairman)	1979-81, 1984-85, 1986-90
Computer Services Representative	1977-1981
Ecology Search Committee	1977-1978, 1979-1980
Zoology Department Seminar Committee	1978-1979
Zoology Department Seminar Committee (Co-chairman)	1980-1981
Zoology Department Honors Committee	1978-1981
Ecology Area Sub-Committee (Chairman)	1979-1983, 1986-1990
Systematics Area Sub-Committee (Chairman)	1984-1985
Graduate Student Review Committee	1980-1981
Graduate Student Review Committee (Chairman)	1982-1983

Zoology Department Personnel Committee	1981-1982, 1984-1985
Physiological Ecologist Search Committee (Chairman)	1981-1982
Zoology Department Affirmative Action Committee	1982-1983
Graduate Programs Committee	1986-1990
Graduate Programs Director	1988-1990
Departmental Collections Advisory Committee	1987-1989
Evolutionary Geneticist Search Committee	1987-1988
<b>University Committees</b>	
Ad hoc Committee on Interdisciplinary Ecology Program	1979-1981
Ad hoc Committee on Undergraduate Humanities Program	1982
Committee on Graduate Program in Humanities	1982-1983
Committee on Humanities - Interdisciplinary Humanities Program	1984-1985
Search Committee for Chair, Zoology Department (Chair)	1984-1985
Ad hoc Committee for Animal Care Facilities Renovation	1986-1987
College of Liberal Arts and Sciences Research Awards Committee	1987-1988
Search Committee for Associate Dean, College of Liberal Arts and Sciences	1988-1989
Search Committee for Vice President for Research, Provost's Office	1991-1992
Life Sciences Task Force, ASU-West	1991-1992
ASU-East Planning Committee, Provost's Office	1992-1993
University Council on Health Professions Education, Arizona Board of Regents	1994-1995
Environmental Studies Committee (Chair), Provost's Office	1994-1995
Search Committee for Development Officers, College of Liberal Arts and Sciences	1993-94
Academic/Research Steering Committee for ASU Aquarium Project (Chairman), Provost's Office	1994-95
Ad hoc Committee on Health Professions Education, President's Office	1995
Biological Sciences Planning Committee, College of Liberal Arts and Sciences	1994-95
Faculty Advisory Committee for the Center for Environmental Studies	1998-2000
Strategic Planning Committee on Basic Biomedical Research (Chairman), Provost's Office	1998-2001
Strategic Planning Committee, College of Liberal Arts and Sciences	1997-2000
Faculty Advisory Board for the Center for Research on Science, Mathematics, Engineering, and Technology	1998
Search Committee for Associate Dean, Graduate College	2000
Ad hoc Strategic Planning Committee on Biosciences (Chairman), Provost's Office	2000-2001
University Design Team, President's Office	2003
Academic Council, President's Office	2003 - present
Task Force for a School of Global Health, President's Office	2004
President's Professors Awards Committee, President's Office	2005

School of Global Health Advisory Group, President's Office	2005 – 2007
External Advisory Council, ASU IGERT for Solar Utilization Network	2013 - present
Advisory board, Center for Biodiversity Outcomes	2014-2015

### **GRADUATE STUDENTS SUPERVISED**

- Allan S. Las. Male courtship persistence in the greenhouse whitefly, *Trialeurodes vaporariorum* Westwood (Homoptera: Aleyrodidae). M.S. degree 1978.
- Brian J. Dowe. The effect of time of oviposition and microenvironment on growth in a population of larval bullfrogs, *Rana catesbeiana*, in Arizona. M.S. degree 1979.
- Mark A. Franzblau. A field-experimental study of the effect of resource availability on territory size in the Rufous-sided Towhee (*Pipilo erythrophthalmus*). M.S. degree 1980.
- James E. Cheek. Effect of density and food on morphology of larval tiger salamanders, *Ambystoma tigrinum nebulosum*, in Arizona. M.S. degree 1982.
- Gary Meffe. Ecology of species replacement in the Sonoran topminnow (*Poeciliopsis occidentalis*) and the mosquitofish (*Gambusia affinis*) in Arizona. Ph.D. degree 1983 [co-Chair with W.L. Minckley].
- Joseph Holomuzki. Variation in microhabitat use and trophic patterns of larval salamanders (*Ambystoma tigrinum nebulosum*). Ph.D. degree 1986.
- Philip J. Fernandez. Variation in color pattern and pigment composition of the Arizona tiger salamander, *Ambystoma tigrinum nebulosum*. M.S. degree 1986.
- Lee H. Simons. Rodent dynamics in burned and unburned desert habitat with tests of the effects of fire. M.S. degree 1986.
- Philip Rosen. Life history and ecology of mud turtles (*Kinosternon*) in Arizona. M.S. degree 1987.
- Kim E. Zerba. Individual variation in diet of larval tiger salamanders (*Ambystoma tigrinum nebulosum*) in Arizona. Ph.D. degree 1988.
- Thomas Jones. The evolution of macrogeographic and microgeographic variation in the tiger salamander, *Ambystoma tigrinum* (Green). Ph.D. degree 1989 [co-Chair with W.L. Minckley].
- David Begun. Regulatory genes and evolution of intraspecific morphological variation in tiger salamanders. M.S. degree 1989.
- Howard Berna. Ecology and life history of the tiger salamander, *Ambystoma tigrinum nebulosum* Hallowell, on the Kaibab Plateau. M.S. degree 1990.
- Michael Sredl. Spatial and temporal factors affecting amphibian larval fitness. M.S. degree 1990.
- Linda Allison. Growth and morphological variation in the Arizona tiger salamander. M.S. degree 1991.
- Michael Loeb. Ecology and evolution of alternative larval phenotypes in the Arizona tiger salamander. M.S. degree 1991.
- George Ohlandt. Microgeographic variation in life history of *Ambystoma tigrinum nebulosum* in Arizona. M.S. degree 1992.
- Timothy J. Maret. Morphological variation and trophic relations in size structured populations. Ph.D. degree 1995.
- Paul Brunkow. The effect of intraspecific variation in body size on the population biology and community ecology of a top predator. Ph.D. degree 1996.
- Jonathan D. Snyder. Ecology, management, and intellectual history of native and introduced species. M.S. degree 1998.
- Robert Ziembra. Ecology and evolution of foraging behavior in cannibalistic populations. Ph.D. degree 1998.

James Jancovich. *Ambystoma tigrinum* virus: Identification, detection, transmission, characterization, and taxonomic position. M.S. degree 1999 [co-Chair with E. Davidson].

Thomas Ashbeck. Modeling introduced populations of bullfrogs, *Rana catesbeiana*. M.N.S. degree 2002.

Erik Harvey. Intraspecific interactions shape life history trajectories in the Arizona tiger salamander. Ph.D. degree 2002.

Carolyn Schroeder. Comparative analysis of amphibian extinction numbers since 1800 A.D. M.N.S. degree 2004.

Jesse Brunner. The evolution of parasite virulence: Transmission, trade-offs, and persistence in an iridovirus - salamander system. Ph.D. degree 2004.

Amy Greer. The impact of disease on the host-population dynamics in a salamander-virus system. Ph.D. degree 2007.

Danna Schock. Evolutionary ecology of the amphibian pathogen *Ambystoma tigrinum* virus (ATV). Ph.D. degree 2007.

Angela Picco. Amphibian commerce and the spread of infectious disease in wildlife. Ph.D. degree 2008.

Verma Miera. Host-pathogen ecology in a montane community of amphibians in Arizona. M.N.S. degree 2008.

Oliver Hyman. Ecology of chytridiomycosis in boreal chorus frogs (*Pseudacris maculata*). Ph.D. degree 2012.

Penny Langhammer. Chytridiomycosis in the direct-developing frogs of Puerto Rico. Ph.D. degree 2013.

Adrienne Zillmann. Host iron supply and dynamics of an emerging infectious disease: Can a micronutrient cause macro-level outcomes? M.S. degree 2013.

Christopher Dimond. Three perspectives on multilevel selection: An experimental, historical, and synthetic analysis of group selection. Ph.D. degree 2014.

Anne Clay. Seoul Grand Park, from 1984-2015: A historical analysis of the changing conservation and biodiversity priorities in South Korea. M. S. student [co-Chair with B. Minter]. M.S. degree 2015.

Evan Brus. The role of amphibian reservoirs and super-spreaders in chytridiomycosis. Ph.D. student

Nicholas Massimo. Project in development. Ph.D. student

Herbert Wildey. Project in development. Ph.D. student

Shinji Otsuru. Project in development. M.S.. student

Theora Tiffney (co-chair with Robert Cook-Deegan, School for the Future of Innovation in Society). Project in development. Ph.D. student

I am currently on 8 graduate committees. I have served on more than 100 graduate committees in Botany, Biology, Psychology, Zoology, Sociology, and the School of Life Sciences since 1975.

I have served as external examiner for dissertations at James Cook University (Queensland, Australia), Massachusetts Institute of Technology, Southern Illinois University, University of Western Australia, University of Queensland, and University of Zurich.

#### **POSTDOCTORAL ASSOCIATES SUPERVISED**

David Pfennig. Ph.D. = University of Texas, 1989. Maytag Postdoctoral Fellow, Arizona State University, Research project = "Evolution of alternative amphibian ontogenies" (1989-90). Current position: Zachary Taylor Smith Professor of Biology, University of North Carolina - Chapel Hill.



- Joseph Holomuzki. Ph.D. = Arizona State University, 1986. Research Opportunity Award project = "Trophic control of fishless lentic ecosystems by tiger salamander larvae" (1991, 1993). Current position: Professor of Biology, Ohio State University - Mansfield.
- Timothy Maret. Ph.D. = Arizona State University, 1995. Arizona State University Research project = "Effect of habitat alteration and introduced species on endangered/sensitive amphibian populations in Arizona." (1995-96). Current position: Professor of Biology, Shippensburg University, Pennsylvania.
- Paul Brunkow. Ph.D. = Arizona State University, 1996. Arizona State University Research project = "Effects of grazers on freshwater habitats." (1996-97). Current position: Associate Professor of Biology, Southern Illinois University - Edwardsville.
- Kevin Dann. Ph.D. = Rutgers University. Arizona State University Research project = "Nature, history, and the natural historical sciences." (1996- 98). Current position: Lecturer in History, University of Vermont.
- Andrew Storfer. Ph.D. = University of Kentucky. Maytag Postdoctoral Fellow, Arizona State University, Research project = "The importance of genetic variation in endangered species: correlations of microsatellite variation with morphological variation." (1997 - 1999). Current position: Eastlick Distinguished Professor, School of Biological Sciences, Washington State University - Pullman.
- Matthew Parris. Ph.D. = University of Missouri. Arizona State University Research project = "Disease ecology and its role in shaping life history." (1999 - 2000). Current position: Associate Professor of Biology, University of Memphis.
- Richard Retallick. Ph.D. = James Cook University, Queensland, Australia. Arizona State University Research project = Emerging wildlife diseases as a threat to amphibian biodiversity. (2003 - 2005). Current position: Zoologist, Natural Resources Group, GHD Professional Services Company, Victoria, Australia.
- Jesse Bruner. Ph.D. = Arizona State University, 2004. Arizona State University Research project = Evolution of virulence (2004 – 2005). Current position: Assistant Professor, Washington State University - Pullman.
- Gregory Ruthig. Ph.D. = University of Virginia, 2006. Arizona State University Research project = Community ecology of emerging wildlife disease. (2006 – 2008). Current position: Assistant Professor, North Central College, Illinois.

### **UNDERGRADUATE HONORS SUPERVISED**

- Suzanne E. Linda. Coloration and its function as crypsis in larval Arizona tiger salamanders (*Ambystoma tigrinum nebulosum*). Honors thesis, 1999.
- Kathryn L. Richards. The effect of a fungal pathogen, *Batrachochytrium dendrobatidis*, on lowland leopard frogs (*Rana yavapaiensis*). Honors thesis, 2004.
- Spenser Babb-Biernacki. Phenotypic plasticity and early life cycle development of the chytrid fungus *Batrachochytrium dendrobatidis*. Honors thesis, 2016.
- Laura Woodland. Analysis of Global Variance of the Thermal Maxima of an Amphibian Pathogen. Honors thesis, 2017.
- Paige Smith. A Tale of Two Canyons: Abiotic factors and the distribution of a pathogenic fungus in southeastern Arizona. Honors thesis, 2017.
- Christopher Anigwe. Dragonfly naiads as potential reservoir hosts for the infectious amphibian chytrid fungus, *Batrachochytrium dendrobatidis*. Honors thesis, 2018.
- Rachel Fadlovich. Occurrence of a pathogenic fungus in captive Arizona amphibians. Honors thesis, 2018.

### **INVITED SEMINARS AND LECTURES**

Northern Arizona University (1976, 1978, 1985)

Organizer and presentation at symposium on “Amphibian metamorphosis: Neoteny and metamorphosis in salamanders” at Ann. Meet. Amer. Soc. of Ichthyologists and Herpetologists (1976)

University of New Mexico (1978)

University of California, Irvine (1979)

University of California, Santa Barbara (1979)

Invited lecture at symposium on “The Inter-face of Life-History Evolution, Whole Organism Ontogeny and Quantitative Genetics” presented at Annual meeting, American Society of Zoologists (1981)

Invited lecture at Symposium on “Amphibian Population Biology” presented at Ann. Meet. Amer. Soc. of Ichthyologists and Herpetologists (1983)

Invited seminar/workshop on “Ecology and Evolution” presented at Summer Conference on History and Philosophy of Science, Dennison University (1983)

Invited lecture at symposium on “Reflections on Ecology and Evolutionary Biology” at Arizona State University (1985)

Invited participant in joint NSF/Congressional Office of Technology Assessment workshop on “Environmental Applications of Recombinant DNA organisms,” Washington, D.C. (1985)

Rutgers University (1985)

University of Colorado (1985)

University of Arizona (1986)

State University of New York, Stony Brook (1986)

University of Maryland (1986)

National Museum of Natural History [Smithsonian Institution] (1986)

Penn State University (1986)

University of Kentucky (1986)

Duke University (1986)

Invited participant to conference on “New Directions in Physiological Ecology”, Washington, D.C. (1986)

Invited participant in National Academy of Sciences/National Research Council workshop on “Biological effects of human population growth” (1986)

University of Utah (1986, 1987)

University of Georgia (1986, 1992)

University of North Dakota (1986)

University of Minnesota (1987)

Savannah River Ecology Laboratory (1983, 1988)

Invited lecture at symposium on “The Management of Amphibians, Reptiles, and Small Mammals in North America” sponsored by USDA Forest Service, Flagstaff, Arizona. (1988)

Invited participant in NSF sponsored workshop on "Morphometrics in Systematic Biology" at The University of Michigan (1988)

Invited lecture at symposium on “Environmental influences on the phenotypic expression of morphology and life-history traits,” presented at annual meeting of the American Society of Ichthyologists and Herpetologists (1989)

Invited participant in Environmental Protection Agency workshop for their Environmental Monitoring and Assessment Program (1989)

Arizona State University [Department of Mathematics] (1992)

Invited Lecture at symposium on “Evolution and ecology of ambystomatid salamanders,” presented at Ann. Meet. Amer. Soc. Ichthyologists and Herpetologists (1992)

Rocky Mountain Biological Laboratory (1993)

Arizona Game and Fish Department (1994)

Presentations at Dibner Institute for the History of Science and Technology seminars in the History of Biology at the Marine Biological Laboratory [MBL] or MIT:  
“Extinction,” MBL (1994)  
“Ecology and conservation biology: historical, philosophical, and scientific perspectives,” (1995)  
“Competing epistemologies in biology,” MBL (1996)  
“Making choices: organisms in the history of biology,” MBL (1997)  
“Why does history matter? Biology as an historical science.” MIT (1998)  
“Putting humans into ecology.” MBL (2000)  
“Human dimensions of ecology.” MBL (2003)

Invited lecture at symposium on “Amphibian metamorphosis: An integrative approach,” presented at Annual meeting, American Society of Zoologists (1995)  
University of Oklahoma (1996)  
New Mexico State University (1997)

Invited lecture at American Association for the Advancement of Science (AAAS) symposium on “Biology and law: What should we believe?” (1997)

Invited lecture at symposium on “Environmental, economic, and legal issues related to rangeland water developments,” Center for Law, Science, and Technology, Arizona State University (1997)  
Arizona State University [Department of Chemistry and Biochemistry] (1998)

Invited lecture at conference on “The naturalist tradition,” presented at Oregon State University  
Thomas Hart and Mary Jones Horning Endowment in the Humanities 1997-98 Lectures:  
“The arts and sciences: interactions and influences” (1998)

Organizer and presentation at NSF workshop on “Amphibian population dynamics: Is the threat of extinction increasing for amphibians?” National Science Foundation (1998)

Participant in NSF workshop on “Amphibian diseases and immunology.” San Diego Zoo (1998)

Participant in workshop on “Developing a modeling paradigm for spatially explicit urban ecology models” at the National Center for Ecological Analysis and Synthesis (1998)

Participant in NSF workshop on “Mechanisms of developmental disruption in amphibians.” San Diego Zoo (1998)  
Columbia University, Biosphere 2 Center (1998)

Participant in U.S. Fish and Wildlife Service and Society for Conservation Biology workshop on “Evaluating endangered species recovery plans,” Washington, D.C. (1998)

Irving S. Cooper Lecture, Mayo Clinic/Scottsdale (1999)  
Arizona State University - West [Department of Life Sciences] (2000)

Organizer and presentation at symposium at American Association for the Advancement of Science (AAAS) symposium on “Amphibian declines: untangling the complexity” (2000)

Invited lecture at Life Sciences Symposium on “Reorganization of life science instruction and research,” University of Wyoming (2000)  
Arizona State University [College of Architecture and Environmental Design] (2000)

Invited lecture at Partners in Amphibian and Reptile Conservation research symposium, presented at Ann. Meet. Amer. Soc. Ichthyologists and Herpetologists (2000)  
Pettingill Lecture in Natural History, The University of Michigan Biological Station (2000)  
Thomas S. Hall Lecture at Washington University, St. Louis (2000)  
University of Missouri, Columbia (2000)

Invited lecture at workshop on “Declining amphibian populations of California and Nevada: Causes and solutions,” Western Section of The Wildlife Society (2001)

Keynote address on “Planning for this century: The first Transect seminar” at Yale University [College of Architecture] (2001)

Participant in the Johnson Foundation Wingspread Conference Center workshop “Global decline of amphibian populations: An integrated analysis of multiple stressor effects” sponsored by the Society of Environmental Toxicology and Chemistry Foundation for Environmental Education (2001)

Invited address on “The great amphibian die-off: Why?” to The Council for the Advancement of Science Writing, a national association of science writers, editors, and broadcasters (2001)

Keynote address at The Southwest and Rocky Mountain (SWARM) region of the American Association for the Advancement of Science (AAAS) annual meeting (2001)

University of Memphis (2002)

Invited lecture on the role of pathogens in amphibian declines at symposium for the Research and Analysis Network for Neotropical Amphibians, San Jose, Costa Rica (2002)

Invited lecture at symposium on “Global amphibian declines: Is current research meeting conservation needs?” Annual meeting, Society for Conservation Biology, Canterbury, England (2002)

Invited lecture at 9<sup>th</sup> Altenberg Workshop in Theoretical Biology on The Viennese Roots of Theoretical Biology: The Vivarium Centenary. Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria. Abstract. (2002)

Franklin and Marshall College, Bonchek Institute for Science and Public Policy (2002)

University of Zurich, Switzerland (2003)

University of Fribourg, Switzerland (2003)

Co-organizer for NSF workshop on “The academy of the 21<sup>st</sup> century,” Arlington, VA (with Ann Kinzig) (2003)

Participant in NSF workshop on “History, Philosophy, and Social Studies of Science in the Public Realm” at Arizona State University (2003)

Co-organizer, Ecological Society of America workshop on “Developing a successful undergraduate research program: How do we know if we’re doing it right?” for NSF’s Undergraduate Mentoring in Environmental Biology programs (with Ali Whitmer) (2003)

Invited presentation at teaching workshop on “Biology and Society programs: Preparing students for biology in social context,” biannual meeting of the International Society for the History, Philosophy, and Social Studies of Science, Vienna, Austria. (2003)

Invited lecture at symposium on “Amphibian metamorphosis: 30 years of progress,” presented at annual meeting of the American Society of Ichthyologists and Herpetologists, Manaus, Brazil (2003)

Invited presentation on “Education and broader impacts” at New York Botanical Garden workshop on “Development of a national systematics infrastructure: A virtual instrument for the 21<sup>st</sup> century” (2003)

Invited presentation on “Perspectives on education and training: Creating a new generation of interdisciplinary researchers” at U.S. National Academies of Sciences Convocation on Facilitating Interdisciplinary Research (2004)

Invited presentation on “Forecasting changes in amphibian biodiversity: aiming at a moving target” at The Royal Society meeting on Beyond extinction rates: monitoring wild nature for the 2010 target (2004)

Invited presentation, Gordon Conference on “Science and technology policy: Who wins, who loses, who cares?” Big Sky, MT (2004)

Washington State University/University of Idaho (2004)

Arizona State University [Department of Physics and Astronomy] (2004)

Invited presentation, Southwest Consortium for Theoretical, Mathematical, and Computational Biology (2005)

Invited closing remarks, Western Regional Bioethics Conference, Tempe, AZ (2005)

Invited presenter/Faculty leader for Project Kaleidoscope: “Leadership in building an interdisciplinary learning environment,” U.S. Military Academy, West Point, NY (2005)

Invited participant in workshop on “What does it mean to be an educated member of the science, technology, engineering, and math workforce in the 21<sup>st</sup> century?” Syracuse University, President’s Office (2005)

Invited presentation, Conference on Environmental ethics, science and policy, Department of Philosophy, University of Utah (2005)

Invited presentation, Symposium on “Amphibian declines” 5<sup>th</sup> World Congress of Herpetology, Stellenbosch, South Africa (2005).

Invited co-organizer, Symposium on “Current research in the host-pathogen biology of amphibians and chytrids,” XI Congress of Mycology at the International Union of Microbial Societies (2005)

Invited presentation, National Council of University Research Administrators, Region 6 (2005)

Invited keynote speaker, Undergraduate Research Symposium, Arizona State University (2006)

Invited presentations, Quality Education for Minorities Network Workshops (2005, 2006)

Invited briefings and presentations in 2006 on issues related to Biology Directorate programs at NSF: National Science Board; Biological Ecological Sciences Coalition/The Coalition on Funding Agricultural Research Missions; Bill and Melinda Gates Foundation; House of Representatives Science Committee staff members; U.S. House of Representatives Science, State, Justice, and Commerce Authorization Subcommittee staff members; Senator Daniel Inouye’s staff members; The White House Office of Science and Technology Policy Director Dr. Jack Marburger and staff members; Office of Management and Budget staff members; Heads of International Research Organizations; Gordon and Betty Moore Foundation Scientific Advisory Board; Ecological Society of America Executive Committee

Invited participant, Sustainability Roundtable, National Academy of Sciences (2006)

Invited keynote address, Society for Molecular Biology and Evolution (2006)

Invited keynote speaker, Organization for Tropical Studies Assembly of Delegates Meeting and Symposium on “Future directions in tropical research.” (2006)

Invited presentation at workshop on “Scientific assessments as upstarts in ecology: ethical considerations for ecologists.” Annual Meeting, Ecological Society of America. (2006)

Co-organizer for workshop on “Ecological ethics: examining the neglected ethical context of ecological decision-making.” Annual Meeting, Ecological Society of America. (with Ben Minter) (2006)

Invited participant, “An ecologists’ community discussion of funding agency initiatives.” Annual Meeting, Ecological Society of America. (2006)

Introductory remarks, USDA workshop on “Long Term Agricultural Research – Education and Extension network.” (2006)

Invited remarks, National Research Council Board on Life Sciences Committee on Defining and Advancing the Conceptual Basis of Biological Sciences in the 21<sup>st</sup> Century.” (2006)

Invited presentation, United Nations University Institute of Advanced Studies and UNESCO international conference on “Globalization: Challenges and opportunities for science and technology,” Yokohama, Japan. (2006)

Invited remarks, Long Term Ecological Research All Scientists Meeting, Estes Park, CO (2006)

Invited presentation, Workshop to design an amphibian monitoring program for the Tropical Ecology Assessment and Monitoring Network (TEAM), Conservation International, Washington, DC (2006)

Institute of Ecosystem Studies (2006)

Invited presentation, “What is integrative biology at the start of the 21<sup>st</sup> century?” Annual meeting, Society for Integrative and Comparative Biology (2007)

Invited remarks, Integrating Plant Genomics Research Activities: From National to Regional to Global; NSF/CREES Microbial Genome Sequencing Program Workshop. Plant & Animal Genome XV, San Diego, CA (2007)

Invited briefings and presentations in 2007 on issues related to Biology Directorate programs at NSF: National Science Board; H. John Heinz III Center for Science, Economics and the Environment; American Society for Microbiologists; House of Representatives Committee on Science and Technology staff members; Biological Ecological Sciences Coalition/The Coalition on Funding Agricultural Research Missions; Chinese Academy of Sciences, Institute of Zoology, Beijing; Chinese Academy of Sciences, Institute of Plant Sciences, Beijing; National Science Foundation – China, Beijing; Inner Mongolia Grassland Ecosystem Research Station, Chinese Academy of Sciences, Xilinhot; Chinese Academy of Sciences, Institute of Zoology, Kunming; Shanghai Institutes for Biological Sciences, Shanghai; National Science and Technology Council Committee on Science; Defenders of Wildlife and associated NGOs; Heads of International Research Organizations; Society for Industrial and Applied Mathematics: University of Cape Town; Kirstenbosch National Botanical Garden, Cape Town, South Africa

Invited presentation, Federation of American Societies for Experimental Biology 2007, “Biology into the 21<sup>st</sup> century: Where to from here?” (2007)

Ohio University, Athens, OH (2007)

Invited Plenary address, “Ecology in the 21<sup>st</sup> century: Where to from here?” Eco Summit, Beijing, China (2007)

Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, Xishuangbanna, China (2007)

Chinese Academy of Sciences, Institute of Botany, Kunming, China (2007)

Missouri Botanical Garden (2007)

Invited workshop participant, “Understanding and incorporating climate impacts into integrated assessment models.” Joint Global Change Research Institute (2007)

Perspectives of Science Leaders address at the annual meeting of the American Society of Plant Biology: “Plant biology into the 21<sup>st</sup> century: where to from here?” (2007)

Invited presentation, “Using genomics to transform research in Herpetology.” Society for the Study of Amphibians and Reptiles 50<sup>th</sup> Year Symposium on Herpetology in the Age of Genomics. (2007)

Invited presentation at Ecological Society of America Special Session on “What is NEON becoming.” (2007)

Invited workshop participant, “Future challenges in theoretical biology.” Santa Fe Institute (2007)

Invited presentation, National Research Council Committee on Life and Physical Sciences, “Perspective from BIO: Intersection of the life and physical sciences.” (2007)

Invited presentation at workshop on Ecological Theory, “The role of theory in ecology—science perspective,” University of Connecticut, Storrs. (2007)

Invited presentation at conference on Amphibian Declines & Chytridiomycosis: Translating Science Into Urgent Action, “A modern extinction event: the science, ethics, and policy implications of global amphibian declines.” (2007)

Invited presentation, Council of Graduate Schools’ Fifth Biennial Meeting of Professional Science Master’s Program Leaders, “Perspective from NSF: The Professional Science Master’s Degree.” (2007)

Invited briefings and presentations in 2008 on issues related to Biology Directorate programs at NSF: National Science Board; National Association of Marine Laboratories; Maize Genetics Executive Committee; National Coalition for Food and Agriculture Research Executive Committee; House of Representatives Committee on Science and Technology staff

members; American Institute of Biological Sciences Executive Committee and Board; National Research Council Board on Life Sciences; Federation of American Societies for Experimental Biology Executive Committee; Joint Executive Committee for American Society of Naturalists, Society for the Study of Evolution, Society of Systematic Biologists; National Science and Technology Council Committee on Science; Heads of International Research Organizations; American Society for Cell Biology Public Policy Committee; The White House Office of Management and Budget Examiner; The White House Office of Science and Technology Policy

University of California, San Diego (2008)

Concluding remarks, The National Plant Genome Initiative. Interagency Working Group on the Plant Genome Program Workshop. Plant & Animal Genome XVI, San Diego, CA (2008)

Invited presentation, Council of Environmental Deans and Directors Biannual meeting, “Environmental research and education activities at NSF” (2008)

Invited speaker, Swedish Embassy program on “Understanding the brain through neuroinformatics” (2008)

University of Maryland (2008)

Invited plenary address, “Global change is life in transition,” Annual Meeting North American Benthological Society (2008)

Invited plenary addresses, “One biology, one science:” (2008) at  
Annual Meeting American Society of Microbiologists;  
Annual Meeting Society for Developmental Biology;  
International Conference on Arabidopsis Research;  
Annual Meeting The American Society for Cell Biology

Invited presentation: “The view of NEON from NSF,” Annual Meeting Ecological Society of America (2008)

Speaker, Head of Delegation, “Interdisciplinary climate change research at NSF,” NSF-NSF/China workshop on climate change, Shanghai, China (2008)

Speaker, Head of Delegation, “Interdisciplinary climate change research at NSF,” NSF-Chinese Academy of Sciences workshop on climate change, Xianjiang University, Urumqi, Xinjiang Province, China (2008)

Invited plenary address: “One biology, one science: A vision for 21<sup>st</sup> century biology,” The 2008 US National Academies Biology Summit on “The role of the life sciences in transforming America’s future” (2008)

Chair, “The Global Loss of Amphibians.” Session on Biodiversity in a rapidly changing world. 9<sup>th</sup> National Conference on Science, Policy and the Environment. National Council for Science and the Environment, Washington, DC. (2008)

Invited briefings and presentations in 2009 on issues related to Biology Directorate programs at NSF: National Science Board; National Science Board Committee on Education; International Conference on Global Challenges for Environmental Research Funders; Office of Management and Budget, Executive Office of the President of the U.S.; AAAS/Science magazine Roundtable discussion on improving undergraduate biology education; U.S. House of Representatives Committee on Appropriations professional staff; National Ecological Observatory Network, Inc. Annual Members’ Meeting and Board of Directors Meeting

University of Washington (2009)

Darwin’s Birthday invited address: “Ten million places at the table: Translating biodiversity issues from science to policy,” National Academy of Sciences Symposium (Twenty-first century ecosystems: Systemic risk and the public good) on the Science and Policy for Managing the Living World Two Centuries after Darwin (2009)

Kaesler Visiting Scholar Lecture, University of Wisconsin, Madison (2009)

University of Missouri, Columbia (2009)  
Keynote Speaker. National Science Foundation, Earth Month (2009)  
Florida Institute for Human and Machine Cognition Evening Lecture Series (2009) [available at (<http://www.youtube.com/watch?v=aEAg6cc0mE0>)]  
Association of Zoos and Aquariums, Directors' Washington Policy Conference (2009)  
Smithsonian Institution National Museum of Natural History (2009)  
Mount Desert Island Biological Laboratory (2009)  
Hubbard Brook Research Foundation Annual Meeting (2009)  
Plenary address: "Does the biology we teach reflect the biology we do? A view for the 21<sup>st</sup> century." American Association for the Advancement of Science conference (Vision and change in undergraduate biology education) on "Transforming undergraduate education in biology: Mobilizing the community for change." (2009)  
Keynote Speaker, Zoological Society of London, UK: Amphibian Mini-Summit (2009)  
National Institute for Standards and Technology (2009)  
Invited presentation, "National Plant Genome Initiative," 12<sup>th</sup> Annual Meeting Plant Genome Research Program (2009)  
Invited address, "30 years and counting for LTER: Innovating in the midst of excellence," Long Term Ecological Research All Scientists Meeting, Estes Park, CO (2009)  
Invited testimony on "Investing in high risk, high reward research" before the U.S. House of Representatives Committee on Science and Technology Subcommittee on Research and Science Education, Washington, DC (2009)  
Invited presentation, "Biological sciences in the 21<sup>st</sup> century. Science and engineering without borders," NSF EPSCoR (Experimental Program to Stimulate Competitive Research) 21<sup>st</sup> National Conference (2009)  
Invited address, "Environmental sciences in the 21<sup>st</sup> century. Looking back and looking forward," 25<sup>th</sup> Anniversary Celebration of the Board on Life Sciences" National Academy of Sciences, National Research Council. (2009)  
Invited presentation, "Moving forward with large biology initiatives: The human connectome project," National Academy of Sciences, Institute of Medicine, Forum on Neuroscience and Nervous System Disorders, Board on Health Sciences Policy (2009)  
Invited presentation, "Amphibian chytrid fungal disease and global amphibian decline," Workshop on "Genomics-based research for understanding extinction with conservation applications" San Diego Zoo's Institute for Conservation Research (2009)  
Distinguished Lecturer in Life Science, Huck Institutes of the Life Sciences, Penn State University (2010)  
Invited address, Association of Zoos and Aquariums, Mid-Year Conference (2010)  
Invited address, University of Oklahoma (2010)  
Keynote speaker, US Fish & Wildlife Service Southwest Region conference on "Climate change and the conservation of native amphibians and reptiles" (2010)  
Harvard University (2010)  
University of Tennessee, Knoxville (2010)  
Invited participant, Workshop on "The University of the 21st Century," Wissenschaftskolleg zu Berlin/Institute for Advanced Study (2010)  
Invited testimony on "21<sup>st</sup> Century Biology" before the U.S. House of Representatives Committee on Science and Technology Subcommittee on Research and Science Education, Washington, DC (2010)  
Invited presentation, "Teaching the process of discovery in a rapidly changing world," Symposium on "BIO 2020: Developing the next generation. Transforming science education for future research biologists" Howard Hughes Medical Institute (2010)



Reed College (2010)  
Invited speaker, National Science Foundation Advisory Committee for Environmental Research and Education (2010)  
University of Michigan, Ann Arbor (2010)  
Plenary address, "Leadership in a time of science and engineering without borders." Keck Foundation/PKAL (Project Kaleidoscope) National Colloquium on "Transformative Change in STEM Education: Leadership for Advancing Undergraduate Interdisciplinary Learning" (2010)  
Yale University (2011)  
Invited speaker, Independent Colleges Office Liaison Meeting, Washington, DC (2011)  
Invited speaker, Symposium on "Science on FIRE: Facilitating Interdisciplinary Research and Education," University of Colorado-Boulder (2011)  
Plenary speaker, Tropical Ecology Assessment and Monitoring (TEAM) network annual meeting, Dar es Salaam, Tanzania (2011)  
Invited speaker, panel on "Taking the Earth's pulse: Scientific networks and the challenges of collecting environmental data," American Society for Environmental History, Phoenix, AZ (2011)  
Keynote speaker, Forum on "Research in Biology education: Where do we go from here?" Institute for Research on Mathematics and Science Education, Michigan State University, held in Chicago, IL. (2011)  
Invited speaker at 25<sup>th</sup> Altenberg Workshop in Theoretical Biology on "The Meaning of 'theory' in biology." Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria. Abstract. (2011)  
Introductory and Concluding Remarks, American Institute of Biological Sciences and National Evolutionary Synthesis Center symposium on Human Evolution: "Changing humans in a changing environment," National Association of Biology Teachers, Anaheim, CA (2011)  
President's Science Symposium Address, Bowdoin College (2011)  
Invited speaker, Cornerstones of Science Lectures, Curtis Memorial Library, Brunswick, Maine (2011)  
Invited speaker, American Association for the Advancement of Science symposium on "Interdisciplinary Collaboration: Insights from Practice and Theory," Vancouver, Canada (2012)  
Keynote speaker, Association of American Colleges and Universities Education and Assessment Conference: "Learning and discovery in an era of change." New Orleans, LA (2012)  
Invited speaker, Workshop on "Potentially Transformative Research: Social and Ethical Implications," National Science Foundation, Arlington, VA (2012)  
Phi Beta Kappa Lifo Amundson Lecture, University of South Dakota (2012)  
Keynote speaker, 26th Annual BioQUEST Curriculum Consortium Summer Workshop on "Making a Difference with Data," Goucher College, Baltimore, MD (2012)  
Keynote speaker, "Introductory Biology Project Summer Conference," American Association for the Advancement of Science, Washington, DC (2012)  
Invited speaker: "Why Do We Want Science to be Revolutionary, and Should We?" Marine Biological Laboratory History and Philosophy of Science Discussion, Woods Hole, MA (2012)  
St. Olaf College (2012)  
Keynote speaker, Howard Hughes Medical Institute Program Directors and Professors Meeting (2012)  
Keynote speaker, NSF/HHMI/NIH Partnerships in Undergraduate Life Science Education (PULSE) Fellows Inaugural Meeting, Howard Hughes Medical Institute (2012)

Featured speaker, State University of New York (SUNY) Research Council, The Research Foundation for SUNY, SUNY Global Center, New York City (2012)

Invited speaker, National Center for Ecological Analysis and Synthesis, Workshop on “Fungal pathogens and disease-induced extinction: Are fungal diseases different?” (2013)

Georgetown University (2013)

Keynote speaker, Vision and Change in Biology Undergraduate Education: Chronicling Change, Inspiring the Future (2013), American Association for the Advancement of Science, Washington, DC

Keynote speaker, Third Biennial Western Regional IDeA Scientific Conference, Honolulu, HI (2013)

Invited participant, National Academy of Sciences, Board on Life Sciences, Scoping meeting on “Enabling Architecture for the Next Generation of Life Sciences Research” (2013)

Keynote speaker, American Institute of Biological Sciences Council, Meeting on Leadership in Biology, Washington, DC (2013)

Invited Commentator, History of Science Society Annual Meeting, Boston, MA, Session on “Organisms in Changing Environments: Concepts and Contexts of Adaptability in 20<sup>th</sup> Century Plant Sciences” (2013)

Invited Commentator, History of Science Society Annual Meeting, Boston, MA, Session on “Boxed Environments—Glassware and the Rise of Ecological Thinking” (2013)

Invited participant, discussion leader, Workshops on “Creating a Research Agenda for the Ecological Implications of Synthetic Biology,” Boston, MA and Emeryville, CA (2014)

Plenary Address, Summit on the Future of Geoscience Undergraduate Education, University of Texas, Austin, Texas (2014) posted at:  
[<http://mediasite.jsg.utexas.edu/UTMediasite/Catalog/Full/a90bb9c3c9144c899a7fb354a62007fa21>]

Keynote speaker, American Institute of Biological Sciences STEM Faculty Leadership Development Synthesis Meeting, Howard Hughes Medical Institute (2014)

Plenary Address, 2014 HHMI Professors Orientation, Howard Hughes Medical Institute (2014).

HHMI Distinguished Plenary Lecturer, Undergraduate Research Symposium, University of Delaware (2014)

Invited participant, Biomedical Research Reform Forum. Howard Hughes Medical Institute (2014)

Invited participant, Workshop on Research Agendas in the Societal Aspects of Synthetic Biology. Consortium for Science Policy Outcomes, Arizona State University (2014)

Invited participant, Workshop on Directed Genetic Modification Technologies: An Opportunity for Science-Based Regulatory Reform. Center for Law, Science & Innovation, Arizona State University (2015)

Invited participant. Featured session on Inclusive Excellence and the Frontiers of Science: Educating STEM Graduates to Create Solutions for the Future. Centennial Symposium on “America’s global future: Are college students prepared?” Association of American Colleges & Universities (2015)

Vanderbilt University (2015)

University of Arizona, Keynote Address, EarthWeek 2015 (2015)

Invited participant. Workshop on New Genomic Solutions for Conservation Problems. The Long Now Foundation/Revive & Restore (2015)

Keynote address, Gordon Research Conference on Undergraduate Biology Education Research, “Life Sciences and the Future of Higher Education.” Bates College, ME (2015)

Invited organizer and Keynote address, Opening Plenary Session on “Ecology’s Relevance to Earth’s Future.” Centennial Meeting of the Ecological Society of America (2015)

Inaugural Speaker, Seminar Series on Evidence-Based Teaching in STEM: “STEM and the Future of Higher Education.” Arizona State University, Tempe (2015)

Keynote Address, Plenary Symposium on the LEAP (Liberal Education and America’s Promise) challenge and the equity imperative, “On the frontiers of innovation: How ASU is striving to scale elements of the LEAP challenge.” Association of American Colleges and Universities, Washington, DC (2016)

Keynote Address, Forum for Presidents and Foundation Leaders: Making the LEAP to Digital, Association of American Colleges and Universities, Washington, DC (2016)

Keynote Address, “Gene drives in our future: Challenges of and opportunities for using a self-sustaining technology in pest and vector management.” Organisation for Economic Co-operation and Development (OECD) Cooperative Research Program on Biological Resources in Agriculture, North Carolina State University, Raleigh, NC (2016)

Keynote Address, “Gene drives in our future. Altering Nature with Gene Drives: We can. But should we?” College of Liberal Arts and Sciences and School of Life Sciences Dean of Science Lecture, Arizona State University (2016) Presentation available at: <https://clas.asu.edu/deansciencelecture>

Invited briefings and presentations in 2016 on issues related to National Academies of Sciences, Engineering, and Medicine (NAS) report on “Gene drives on the horizon”: Office of Science and Technology Policy, Executive Office of the President; National Institutes of Health and Foundation for the NIH; US House of Representatives Committee on Science, Space, and Technology; Office of Representative William Foster (Congressman Foster attended); Public Briefing (with Webcast) at the NAS

Invited participant, Workshop on Responsible Research and Innovation Practice. ASU School for the Future of Innovation in Society (2017)

Keynote Address, “Altering nature by gene editing: We can, but should we?” Editing Nature Summit, Yale University, New Haven (2017). Presentation available at: <https://www.editingnature.org/keynote-address>

Keynote Address, “Thoughts on a new political, cultural, and economic environment: Priorities for science education.” Science Education Advisory Board, Howard Hughes Medical Institute (2017)

Invited speaker, “Host-pathogen interactions and gene drives.” JASONs 2017 Summer Study Briefing on CRISPR-based gene drive (2017), MITRE Corporation, General Atomics Campus, San Diego, CA

Invited speaker, “Biosecurity biosafety, and environmental risk.” Workshop on ethical issues surrounding the use of CRISPR technology. University of California/Berkeley (2017)

Invited participant, Gordon Research Conference for Undergraduate Biology Education Research on “Improving diversity, equity, and learning in biology education.” Stonehill College, MA (2017)

Invited participant, “Unpacking a movement: Lessons learned from Vision & Change.” Boston, MA (2017)

Keynote Address, “Amphibians in the 21st century: The challenge of integrating discovery and loss, conservation and husbandry.” Raymond D. Semlitsch Symposium at the Joint Meeting of the Herpetologists League, Society for the Study of Amphibians and Reptiles, and American Society of Ichthyologists and Herpetologists Symposium on the Science, Management, and Policy of Amphibian Conservation. Austin, TX (2017)

Invited speaker, “What’s next after the National Academies of Sciences Report on Gene Drives?” Arizona Biosecurity Workshop, Arizona State University (2017)

Invited speaker, Pathogens and Global Health/Imperial College Gene Drive discussion. Imperial College, London (2018)

James Madison University (2018)

Invited participant, "Historical research on model organisms in biology" workshop. Cold Spring Harbor Laboratory, NY (2018)

### **GRANTS, CONTRACTS, AND ENDOWMENTS**

U.S.D.A. Forest Service Contract RM 1606: Species inventory of the amphibians, reptiles, and birds of the chaparral vegetation of Battle Flat, Arizona, \$10,000. (1978-1980)

National Science Foundation grant #DEB 79 04791: Environment, morphology, and life history characters in *Ambystoma tigrinum nebulosum*, \$17,996. (1979-1981)

National Science Foundation grant #DEB 81 09380: Evolution of morphological variation in the tiger salamander, *Ambystoma tigrinum*, \$98,847. (1981-1984)

U.S. Fish and Wildlife Service, Office of Endangered Species: Status report for the Sonoran Tiger Salamander (*Ambystoma tigrinum stebbinsi* in Arizona, \$1,500. (1984)

National Science Foundation grant #BSR 84 07930: Evolution of morphological variation within and between populations of the tiger salamander, *Ambystoma tigrinum*, \$162,000. (1984-1988)

Arizona Game and Fish Department contract: An analysis of the evolutionary relationships of *Ambystoma tigrinum stebbinsi* using mitochondrial DNA, \$1,500. (1988)

BIOSCAN Corporation grant establishing laboratory as beta test site for OPTIMAS image analysis software, \$5,000. (1988).

National Science Foundation grant #BSR 89 19901: Intraspecific variation and evolutionary innovation. \$140,000 (1989-1993). Research Experience for Undergraduates Award Supplement to grant #BSR 89 19901: \$5,000 (1991-92).

Ullman Foundation endowment: "Ullman Professorship in Ecology," Department of Zoology, \$500,000. (1990 - present) [with W.L. Minckley].

National Science Foundation Research Opportunity Award Supplement to grant #BSR 89 19901: Intraspecific variation and evolutionary innovation. \$13,845 (1991-1992).

Ullman Foundation endowment: "Ullman Chair in the Natural Historical Sciences," College of Liberal Arts and Sciences, \$1,000,000. (1992 - present) [with C. Redman].

Howard Hughes Medical Institute: Arizona State University biology education program. \$1,500,000, direct costs (1992-1997) [Program Director (JPC); proposal written with 6 collaborators].

Arizona Game and Fish Department Heritage Fund Program grant #I92014: Status survey of three species of endangered/sensitive amphibians in Arizona. \$14,543 (1992-94).

National Institutes of Health grant # 1T34GM08491-01: MARC (Minority Access to Research Careers) program for Native Americans at ASU. \$835,000, direct costs (1993-1998) [co-PI with Therese Markow, co-Program Director].

National Science Foundation grant #DEB 93 17340: UMEB (Undergraduate Mentoring in Environmental Biology) Research Experience for Undergraduates in ecology. \$251,000 (1993-98) [proposal written with 5 collaborators].

Howard Hughes Medical Institute grant # 71195-514602: Advancing biology education at Arizona State University. \$1,000,000, direct costs (1994-1998) [Program Director (JPC); proposal written with 3 collaborators].

National Science Foundation grant #SBR 95 01683: Workshop on Biology and Law: Adjudicating competing scientific claims in a democracy. \$29,087 (1994-95) [with Jane Maienschein and Daniel Strouse]. Award Supplement to grant #SBR 95 01683: \$11,890 (1995-96).

Arizona Game and Fish Department Heritage Fund Program grant #95053: Effect of habitat alteration and introduced species on endangered/sensitive amphibian populations in Arizona. \$31,365, direct costs (1995-97) [with T. Maret].

Bureau of Reclamation contract/endowment: Central Arizona Project Repository endowment. \$6,200,000 (1995- present) [with M. Barton, W.L. Minckley, and C. Redman].

National Science Foundation grant #SBR 95 30941: Nature, history, and the natural historical sciences: Graduate student training grant. \$249,540, direct + indirect costs (1996-98) [with John Beatty, University of Minnesota, and Gregg Mitman, University of Oklahoma]. Award supplement to grant #SBR 95 30941: \$11,725 (1997-98).

Department of the Army contract #DABT63-96-P-0966: Endangered species management planning at Fort Huachuca: Managing the Huachuca Tiger Salamander (*Ambystoma tigrinum stebbinsi*) on Fort Huachuca. \$5,000 (1996).

Arizona Game and Fish Department Heritage Fund Program grant #I96046: Population genetics of Huachuca salamanders. \$28,749, direct costs (1996-98) [with Robert Ziemba].

Arizona Game and Fish Department Heritage Fund Program grant #I96018: Effects of grazers on freshwater habitats. \$28,733, direct costs (1996-98) [with Paul Brunkow].

U.S. Fish and Wildlife Service grant: Effects of stocking density and size variability on survival and growth of *Gila elegans*. \$11,340 (1996) [with Paul Brunkow].

W.M. Keck Foundation grant: The W.M. Keck Bioimaging Laboratory: An interdisciplinary facility for studying cells interacting with their environment. \$750,000, direct costs (1996-99) [with Douglas Chandler].

Declining Amphibian Populations Task Force grant: Development of tools for detection of the lethal virus of *A. tigrinum stebbinsi*. \$1200 (1997) [with E. Davidson and J. Jancovich].

Del E. Webb Foundation endowment: "Del E. Webb Chair in Molecular Genetics," College of Liberal Arts and Sciences, \$2,000,000. (1997 - present) [with D. Chandler, G. Krahenbuhl].

National Geographic Society: "A model for the role of viruses in amphibian decline." \$5,368 (1998-2000) [with E. Davidson].

National Science Foundation grant #IBN-9807967: Workshop on "Amphibian population dynamics: Is the threat of extinction increasing for amphibians?" \$25,000 (1998-99) [with A. Storfer and E. Davidson].

Department of the Army contract #W61RSF-8310-N001: An assessment of genetic status of tiger salamanders on the Fort Huachuca Military Reservation. \$28,184 (1998-99) [with A. Storfer].

U.S. Fish and Wildlife Service grant #201818M125: Sonora tiger salamander recovery plan. \$12,000 (1998-00).

Howard Hughes Medical Institute grant # 71199-514603: An integrative biology education program at Arizona State University. \$1,400,000 direct costs (1998-2003) [Program Director (JPC); proposal written with 5 collaborators].

National Science Foundation grant #DEB 9816645: Disease ecology and its role in shaping life history. \$220,000, direct + indirect costs (1999-02) [with E. Davidson and A. Storfer]. Research Experience for Undergraduates Award Supplements to grant #DEB 9816645: \$5,000 (1999-00), \$5,000 (2000-01), \$5,000 (2001-02).

Dibner Institute for the History of Science and Technology (MIT) grants supporting annual Dibner Seminars in the History of Biology [with J. Beatty and J. Maienschein]:

- "Why does history matter? Biology as an historical science." \$20,000 (1998)
- "Why Ernst Haeckel?" \$20,000 (1999)
- "Putting humans into Ecology" \$20,000 (2000)
- "From Embryology to Evo-Devo" \$20,000 (2001)
- "The business of life: Life science and industry in the 20<sup>th</sup> century" \$20,000 (2002)
- "Human dimensions of ecology" \$20,000 (2003)
- "Perspectives on molecular evolution" \$15,000 (2004)
- "Cosmic evolution and astrobiology" \$15,000 (2005)

“History of oceanography” \$15,000 (2006)  
“What’s the value of the history of science for science” \$15,000 (2007)  
Arizona State University grants supporting annual Marine Biological Laboratory-ASU Seminars in the History of Biology [with J. Beatty and J. Maienschein]:  
“Embryos in historical context” \$20,000 (2008)  
“Theory in the life sciences” \$20,000 (2009)  
“From Linnaeus to the Encyclopedia of Life: Tracking diversity in the natural world” \$20,000 (2010)  
“History of cell biology” \$20,000 (2011)  
“Visualization in biology” \$20,000 (2012)  
“History of Sustainability” \$25,000 (2013)  
“History of Zoo and Aquarium Conservation” \$25,000 (2014)  
“Perspectives on Stephen Jay Gould” \$25,000 (2015)  
“Why Marine Studies?” \$25,000 (2016)  
“A Century of Engineering Life: Cells and Organisms” \$25,000 (2017)  
“A Century of Engineering Life: Populations and Ecosystems” \$25,000 (2018)  
“Regeneration” \$25,000 (2019)  
National Science Foundation grant #IBN 9977063: IRCEB (Integrated Research Challenges in Environmental Biology) Host-pathogen biology and the global decline of amphibians. \$2,975,822 (1999-03) [Project Director (JPC); proposal written with 23 collaborators].  
National Science Foundation grant #DEB 9975321: UMEB (Undergraduate Mentoring in Environmental Biology): Diverse approaches to environmental research. \$215,983 (1999-03) [proposal written with 5 collaborators]. Award Supplement for a national model assessment program \$40,000 (2002-03).  
National Science Foundation grant #DGE 0086465: GK-12 (Graduate Teaching Fellows in K -12 education): Down to earth science - graduate teaching fellows in K-12 education. \$1,397,825 (2001-04) [proposal written with 21 collaborators]  
Arizona Game and Fish Department Heritage Fund Program grant #I03006: Host-pathogen community ecology in frogs. \$30,806 direct costs [with Verma Miera and Elizabeth Davidson] (2002-04).  
National Science Foundation grant: FSML: Promoting biological research on the Colorado Plateau with the Merriam-Powell Research Station. \$250,000 (2002-05) [proposal written with 5 collaborators].  
National Science Foundation Doctoral Dissertation Improvement Grant (DDIG): The evolution of parasitic virulence: experimental tests using a lethal salamander virus. \$11,589 (2003-05) [proposal prepared by Jesse Brunner, doctoral candidate].  
National Science Foundation grant #DBI 0305279: UMEB (Undergraduate Mentoring in Environmental Biology): Educating a new generation of environmental professionals. \$69,405 (2003-04) [proposal written with 5 collaborators].  
National Science Foundation grant #DBI 0301435: A capillary DNA sequencer and denaturing HPLC for molecular genetics, ecogenomics, and experimental bioinformatics. \$375,162 (2003 - 2004) [with T. Dowling, S. Bingham, R. Blankenship, M. Wojciechowski, and B. Jacobs].  
National Science Foundation grant: Pan-American Advanced Studies Institutes Program (PASI): Advanced training in amphibian population decline research. \$90,600 (2004-05) [proposal written with 4 collaborators, Bruce Young, PD].  
Leland Fikes Foundation grant. An international program for studying global amphibian declines. \$100,000 (2005-06) [proposal written with Tim Halliday and James Murphy on behalf of the Declining Amphibian Populations Task Force].

U.S. Geological Survey grant #LMS0142. Amphibian research and monitoring initiatives seed grants. \$10,000 (2005-06) [proposal written with Tim Halliday on behalf of the Declining Amphibian Populations Task Force].

Conservation International Foundation. Small grants for global conservation of amphibian diversity within hotspots. \$200,000 (2005-08) [proposal written with Tim Halliday on behalf of the Declining Amphibian Populations Task Force].

Arizona Game and Fish Department Heritage Fund Program grant #To be determined: Amphibian disease and pathogen pollution. \$63,959 direct costs [with Angela Picco] (2005-07).

Peabody Family Endowment: "Madeline Peabody Memorial Graduate Fellowship," School of life sciences, \$32,500 (2005 - present).

Arizona Game and Fish Department contract: Developing a molecular protocol for testing frogs with chytrid fungus. \$14,000. (2005).

National Science Foundation grant #DEB 0213851: IRCEB (Integrated Research Challenges in Environmental Biology) Emerging wildlife diseases: Threats to amphibian biodiversity. \$3,000,000 (2002 - 2010) [Project Director (JPC); proposal written with 26 collaborators]. Research Opportunity Award Supplement \$22,425 (2003-04); Research Experience for Undergraduates Award Supplement \$6,500 (2005-06); Research Supplement \$175,982 (2005-06).

National Science Foundation grant. Intergovernmental Personnel Act for J. Collins. \$1,000,156. (2005-2009)

National Science Foundation grant #0527937: Social Dimensions of Engineering, Science, and Technology (SDEST) program: Ecological ethics: constructing a professional ethics for ecologists and biodiversity managers. \$67,000. (2005-07) [with B. Minter].

Howard Hughes Medical Institute. Students becoming scientists in the world: A network for education and research in the biosciences in Arizona. \$1,800,000 direct costs (2006-2011) [with R. Rutowski (program director), J. Maienschein, M. Jacobs, M. Proctor].

Arizona Game and Fish Department Heritage Fund Program grant. Aquatic environment and the persistence of the frog killing fungus, *Batrachochytrium dendrobatidis*. \$81,280. (2009 – 2011) [with O. Hyman].

Environmental Protection Agency Science to Achieve Results (STAR) Graduate Fellowship: Impacts of Climate Change and Emerging Infectious Disease on Amphibians. \$111,000 (2010-2013) [proposal prepared by Penny Langhammer, doctoral candidate].

National Science Foundation grant # SES-1127611: Establishing an STS Informatics Infrastructure and Training Program. \$98,000. (2011-2012) [with J. Maienschein, C. Norton, H. Miller, and M. Laubichler].

National Science Foundation Doctoral Dissertation Improvement Grant (DDIG) # DEB 1209178: Iron availability and dynamics of an emerging infectious disease: Can a micronutrient cause macro-level outcomes? \$15,000 (2012-14) [proposal prepared by Adrienne Zillmann, doctoral candidate].

National Science Foundation grant # SES-1243575: Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE): A Digital HPS Infrastructure for Understanding Biodiversity. \$599,999 (2012-2014) [with J. Maienschein, D. Riegler, H. Miller, N. Wilson, and M. Laubichler].

National Science Foundation grant # SES 1430514: Past, Present and Future of Conservation in Zoological Institutions. \$236,199 (2014-2017), \$6,000 supplemental award (2016) [with B. Minter and J. Maienschein].

Arizona Game and Fish Department Heritage Fund Program grant #I17006. "The History of a Lethal Pathogen in Arizona Ranid Frogs. \$14,014. (2017 – 2019) [with N. Massimo].

**PAPERS PRESENTED AT MEETINGS - PUBLISHED ABSTRACTS** (last 20 yrs.)

- Maret, T.J. and J.P. Collins. 1994.  
Ontogeny, habitat, and niche overlap between cannibal and typical phenotypes in larvae of the Arizona tiger salamander, *Ambystoma tigrinum nebulosum*. Proc. Amer. Soc. Ichthyologists and Herpetologists. Abstract.
- Allison, L.J. and J.P. Collins. 1994.  
Population structure causes hormone variation in a facultatively metamorphosing salamander. Society for the Study of Amphibians and Reptiles/Herpetologists League. Abstract.
- Collins, J.P. 1994.  
Programs at Arizona State University for faculty members and students at community colleges in the Maricopa County Community College District. Annual Meeting of Undergraduate Program Directors, Howard Hughes Medical Institute.
- Collins, J.P., P.E. Brunkow, T.J. Maret, and R.E. Ziemba. 1995.  
Hybridization and amphibian conservation: the distinctive biology and current status of an isolated subspecies of salamander, *Ambystoma tigrinum stebbinsi*, along the borderlands of Arizona and Sonora. Annual meeting of the southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Maret, T.J., Collins, J.P., P.E. Brunkow, and R.E. Ziemba. 1995.  
The effect of habitat alteration on mountain treefrogs: a model of how permanent ponds can provide a refuge for predators. Annual meeting of the southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Allison, L.J. and J.P. Collins. 1995.  
Population structure affects hormone changes in a facultatively metamorphosing salamander. Annual meeting, American Society of Zoologists. Abstract.
- Collins, J.P. 1995.  
Enriching the undergraduate experience through research opportunities in biology. Expanding Minority Opportunities: First Annual National Conference. Abstract.
- Brunkow, P.E. and J.P. Collins. 1995.  
Effects of individual variability in body size on growth and development of larval tiger salamanders (*Ambystoma tigrinum nebulosum*). Annual meeting, Ecological Society of America. Abstract: Supplement to Bull. Ecol. Soc. Amer. 76:33.
- Holomuzki, J.R., P.E. Brunkow, R.E. Ziemba, and J.P. Collins. 1995.  
Salamander impacts on pond trophic structure: the role of habitat complexity and macroinvertebrates. Proc. Amer. Soc. Ichthyologists and Herpetologists. Abstract.
- Allison, L.J. and J.P. Collins. 1995.  
Life history differences between adult morphs of *Ambystoma tigrinum nebulosum* in Arizona. Annual meeting, American Society of Zoologists. Abstract.
- Collins, J.P. 1995.  
Ecological control of intraspecific variation. Annual meeting, American Society of Zoologists. Abstract.
- Snyder, J., T. Maret, and J.P. Collins. 1996.  
Exotic species and the distribution of native amphibians in the San Rafael Valley, AZ. Annual meeting of the southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Maret, T.J. and J.P. Collins. 1996.  
Effect of population size structure on individual behavior and morphology of salamander larvae. Animal Behavior Society. Abstract.
- Ziemba, R.E. and J.P. Collins. 1996.



- Conspecific interactions, habitat complexity, and size-specific feeding rates in larval tiger salamanders. Proc. Amer. Soc. Ichthyologists and Herpetologists. Abstract.
- Collins, J.P. 1997.  
Conserving salamanders in arid lands: Balancing science, law, and policy. Annual Meeting, American Association for the Advancement of Science. Abstract.
- Jancovich, J.K., E.W. Davidson, J.F. Morado, B.L. Jacobs, and J.P. Collins. 1997.  
Virus associated epizootics of the endangered tiger salamander, *Ambystoma tigrinum stebbinsi* Lowe. Proc. Amer. Soc. Ichthyologists and Herpetologists. Abstract.
- Brunkow, P.E. and J.P. Collins. 1997.  
Effects of variability in size of a top predator on a temporary pond community. Annual meeting, Ecological Society of America. Abstract: Supplement to Bull. Ecol. Soc. Amer. 78:38.
- Ziamba, R.E. and J.P. Collins. 1997.  
Individual behavior and population size structure. Annual meeting, Ecological Society of America. Abstract: Supplement to Bull. Ecol. Soc. Amer. 78:47.
- Seddon, J.A., P.E. Brunkow, E.W. Davidson and J.P. Collins. 1997.  
Behavioral fever in salamanders (*Ambystoma tigrinum nebulosum*): The establishment and effect on survival. Annual meeting, Ecological Society of America. Abstract: Supplement to Bull. Ecol. Soc. Amer. 78:56.
- Collins, J.P. 1997.  
Adjudicating nature: science, law, and policy in a southern Arizona grassland. Symposium on environmental, economic, and legal issues related to rangeland water developments. Center for Law, Science, and Technology, Arizona State University.
- Allison, L.J. and J.P. Collins. 1998.  
Sex steroids decrease propensity to metamorphose in a facultatively metamorphosing salamander. Annual meeting, Society for Integrative and Comparative Biology. Abstract.
- Jancovich, J.K., E.W. Davidson, J.F. Morado, B.L. Jacobs, and J.P. Collins. 1998.  
Isolation of a lethal virus from the endangered tiger salamander, *Ambystoma tigrinum stebbinsi* Lowe. Annual meeting of the southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Snyder, J., T. Maret, and J.P. Collins. 1998.  
Species' interactions and drying frequency determine extinction and colonization rates in the Huachuca tiger salamander, introduced fish, and introduced bullfrogs in the San Rafael Valley, AZ. Annual meeting of the southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Linder, D.E., J.P. Collins, R.S. Jones, and G.S. Krahenbuhl. 1998.  
Faculty work reconsidered: an integrative model. Sixth American Association for Higher Education Conference on Faculty Roles and Rewards.
- Ziamba, R.E. and J.P. Collins. 1998.  
A model of optimal behavioral responses to cannibalism in tiger salamanders. Annual meeting, Ecological Society of America. Abstract: Supplement to Bull. Ecol. Soc. Amer.
- Collins, J.P., E.W. Davidson, and A. Storfer. 1999. Disease and its role in shaping life history. Symposium on Current Research on the Herpetofauna of the Sonoran Desert.
- Storfer, A., J. P. Collins, and J. Warren. 1999. Genetics and endangered species: How different is different? Symposium on Current Research on the Herpetofauna of the Sonoran Desert.
- Storfer, A., J. P. Collins, and J. Warren. 1999. Genetics and endangered species: How different is different? Society for Conservation Biology.

- Storfer, A., J. P. Collins, and J. Warren. 1999. Molecular genetic status of Sonora tiger salamander, *Ambystoma tigrinum stebbinsi*, and evidence of possible introgression. American Society of Ichthyologists and Herpetologists.
- Jancovich, J., E.W. Davidson, B.L. Jacobs, and J.P. Collins. 1999. Characterization of novel iridoviruses associated with the decline of North American salamander populations. XIth International Congress of Virology.
- Collins, J.P. 2000. Host-pathogen biology and the global decline of amphibians: NSF's role. Annual meeting of the Southwestern United States working group of the Declining Amphibian Populations Task Force.
- Collins, J.P. 2000. Amphibian Declines: Untangling the complexity. Annual Meeting, American Association for the Advancement of Science. Abstract.
- Storfer, A. and J.P. Collins. 2000. The Complexity of Amphibian Declines: A Case Study. Annual Meeting, American Association for the Advancement of Science. Abstract.
- Collins, J.P. 2000. Host-pathogen biology and amphibian declines. American Society of Ichthyologists and Herpetologists. Abstract.
- Harvey, E. and J.P. Collins. 2000. Conspecific environment and life history variation in *Ambystoma tigrinum nebulosum*. American Society of Ichthyologists and Herpetologists. Abstract.
- Jancovich, J.K., E.W. Davidson, J.P. Collins and B.L. Jacobs. 2000. Molecular biology of North American ranaviruses. XIIIth International Poxvirus and Iridovirus Symposium. Abstract.
- Davidson, E.W., A. Pessier, J. Longcore, M. Parris, J. Jancovich, J. Brunner, D. Schock, and J.P. Collins. 2000. Chytridiomycosis in Arizona (USA) tiger salamanders. National Heritage Trust (Australia) conference on amphibian diseases. Abstract.
- Collins, J.P., J.K. Jancovich, E.W. Davidson, V.G. Chinchar. 2000. The current status of salamander ranaviruses in Western North America. National Heritage Trust (Australia) conference on amphibian diseases. Abstract.
- Collins, J.P., E. Davidson, J. Longcore, A. Pessier, M. Parris, J. Jancovich, J. Brunner, and D. Schock. 2001. Viral and fungal pathogens in tiger salamanders in the western U.S.A. and southern Canada. Western Section of The Wildlife Society. Abstract.
- Schock, D.M., T.K. Bollinger, and J.P. Collins. 2001. The ecology of a viral disease in wild tiger salamander (*Ambystoma tigrinum diaboli*) populations in Saskatchewan, Canada: A working verbal model. Joint annual meetings Herpetologists' League and Society for the Study of Amphibians and Reptiles. Abstract.
- Brunner, J., D. Schock, J.P. Collins, and E. Davidson. 2001. Differential susceptibility of larval and metamorphosed tiger salamanders to a lethal virus. Joint annual meetings Herpetologists' League and Society for the Study of Amphibians and Reptiles.
- Jancovich, J.K., E.W. Davidson, J.P. Collins, N. Parameswaren, and B.L. Jacobs. 2001. Molecular biology of ranaviruses isolated from Arizona salamanders. 20<sup>th</sup> Annual Meeting American Society for Virology. Abstract.
- Davidson, E.W., J.K. Jancovich, and J.P. Collins. 2001. Iridovirus disease in salamanders. American Fisheries Society.
- Miera, V., E.W. Davidson, J.P. Collins. 2002. Cutaneous chytridiomycosis in the Western Chorus Frog. Symposium on Current Research of the Herpetofauna of the Sonoran Desert II.
- Collins, J.P. 2002. Multidisciplinary research into amphibian population declines: The IRCEB (Integrated Research Challenges in Environmental Biology) model. Symposium for the Research and Analysis Network for Neotropical Amphibians. Costa Rica.
- Collins, J.P. 2002. Emerging wildlife diseases and amphibian biodiversity. Annual meeting, Society for Conservation Biology. Abstract.

- Brunner, J.L., D.M. Schock, J.P. Collins, and E.W. Davidson. 2002. Persistence of a lethal ranavirus in a seasonally abundant salamander host. Annual meeting, Ecological Society of America. Abstract.
- Schock, D.M. and J.P. Collins. 2002. Experimental evidence of local adaptation in a salamander-virus system. Annual meeting, Ecological Society of America. Abstract.
- Harvey, E.R. and J.P. Collins. 2002. Intraspecific interactions shape life history trajectories. Annual meeting, Ecological Society of America. Abstract.
- Jancovich, J.K., Mao, J., Chinchar, V.G., Davidson, E.W., Collins, J.P., and Jacobs, B.L. 2002. Genomic sequence of *Ambystoma tigrinum* virus (ATV), the first full genomic sequence of a member of the genus *Ranavirus*. XIIth International Congress of Virology, Paris. Abstract.
- Jancovich, J.K. E.W. Davidson, N. Parameswaran, J.P. Collins, and B.L. Jacobs. 2002. Sequence analysis and taxonomic positioning of iridoviruses associated with tiger salamander die-offs in North America. XIIth International Congress of Virology, Paris. Abstract.
- Mao, J., J.K. Jancovich, T. Nalls, A. Byrd, E.W. Davidson, J.P. Collins, B.L. Jacobs, and V.G. Chinchar. 2002. Complete genomic sequence of a ranavirus linked to salamander die-offs in western North America. 5th International Symposium on Viruses of Lower Vertebrates, Seattle. Abstract.
- Collins, J.P. 2002. Interdisciplinary research outside and within the university. 9<sup>th</sup> Altenberg Workshop in Theoretical Biology on The Viennese Roots of Theoretical Biology: The Vivarium Centenary. Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria. Abstract.
- Collins, J.P. and E.W. Davidson. 2003. Emerging wildlife diseases: Threats to amphibian biodiversity. Annual meeting of the Southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Brunner, J.L., D.M. Schock, J. Jancovich, E.W. Davidson, and J.P. Collins. 2003. The ecology of a tiger salamander ranavirus. Annual meeting of the Southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Jancovich, J., E.W. Davidson, N. Parameswaran, J.P. Collins, and B.L. Jacobs. 2003. Variation in ranavirus strains in western North America. Annual meeting of the Southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Schock, D.M., J.L. Brunner, J.P. Collins, and T.K. Bollinger. 2003. Population-level differences in susceptibility to lethal ranaviruses in two Canadian tiger salamander populations. Annual meeting of the Southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Miera, V., E.W. Davidson, and J.P. Collins. 2003. Susceptibility of salamanders and frogs to chytrid infections. Annual meeting of the Southwestern United States working group of the Declining Amphibian Populations Task Force. Abstract.
- Collins, J.P. 2003. Evolutionary ecology of a model salamander-virus system. Annual meeting of the Research and Analysis Network for Neotropical Amphibians, Rio de Janeiro, Brazil. Abstract.
- Brunner, J.L. and J.P. Collins. 2003. The importance of a complex life history in the long-term persistence of a lethal virus in seasonally abundant salamander populations. Ecological Society of America, Savannah, GA. Abstract.
- Schock, D.M., J.L. Brunner, J.P. Collins, and T.K. Bollinger. 2003. Population-level differences in susceptibility to infectious diseases: an amphibian-virus case study. Wildlife Disease Association, Saskatoon, Canada. Abstract.
- Collins, J.P. 2003. Human dimensions of ecology. Biannual meeting of the International Society for the History, Philosophy, and Social Studies of Biology, Vienna, Austria. Abstract.

- Collins, J.P. 2003. From metamorphosis to eco-devo. Annual meeting of the American Society of Ichthyologists and Herpetologists, Manaus, Brazil. Abstract.
- Collins, J.P., J.L. Brunner, J. Jancovich, and D.M. Schock. 2003. Evolutionary ecology of a model salamander-virus system. Annual meeting of the American Society of Ichthyologists and Herpetologists, Manaus, Brazil. Abstract.
- Miera, V., E. Davidson, and J. Collins. 2003. Susceptibility of frogs and salamanders to chytrid infections. Wildlife Disease Association. Abstract
- Deacon, J.E., J. Collins, and P. Minckley. 2003. W.L. Minckley: Scholar, mentor, friend. Annual meeting, Desert Fishes Council. Abstract.
- Greer, A.L., S. Fox, R. Torres-Cervantes, E.W. Davidson, and J.P. Collins. 2004. Evidence for a ranavirus pathogen in the endangered frog, *Atelognathus patagonicus*, in Patagonia, Argentina. Annual meeting of the Research and Analysis Network for Neotropical Amphibians, San Juan, Puerto Rico. Abstract.
- Jancovich, J.K., E. W. Davidson, N. Parameswaran, J. Mao, V.G. Chinchar, J. P. Collins, B. L. Jacobs, and A. Storfer. 2004. Emergence of an amphibian disease due to human-enhanced spread. Annual meeting of the Research and Analysis Network for Neotropical Amphibians, San Juan, Puerto Rico. Abstract.
- Fox, S., R. Torres-Cervantes, and J. Collins. 2004. La conservación de una rana amenazada (*Atelognathus patagonicus*) en la Patagonia, Argentina: Efectos de la depredación de un pez exótico, una infección patológica, y su interacción. Annual meeting of the Research and Analysis Network for Neotropical Amphibians, San Juan, Puerto Rico. Abstract.
- Jancovich, J.K., M. Bremont, J.W. Touchman, S. Kumar, G. Valente, A. Storfer, E.W. Davidson, J.P. Collins, and B.L. Jacobs. 2004. Genomic sequence of epizootic haematopoietic necrosis virus (EHNV): An evolutionary link between frog and salamander ranaviruses? XI International Pox and Iridovirus Symposium, Oxford, England. Abstract.
- Allison, L.J., J.P. Collins, and R. Averill-Murray. 2004. Proportion area occupied: Using historical data for an endangered tiger salamander to design an effective monitoring strategy. Ecological Society of America, Portland, OR. Abstract.
- Schock, D.M., T.K. Bollinger, and J.P. Collins. 2004. Large-scale differences in disease susceptibility in an amphibian-virus system. Ecological Society of America, Portland, OR. Abstract.
- Brunner, J. and J.P. Collins. 2004. Replication rates, virulence, and virus by host interactions in tiger salamander ranaviruses. Ecological Society of America, Portland, OR. Abstract.
- Collins, J.P. and T. Halliday. 2004. Forecasting changes in amphibian biodiversity: aiming at a moving target. The Royal Society, London, Scientific Discussion meeting (Beyond extinction rates: monitoring wild nature for the 2010 target). Abstract.
- Schock, D.M., T.K. Bollinger, and J.P. Collins. 2004. Large-scale differences in disease susceptibility among populations of tiger salamanders in Saskatchewan and Manitoba. 9<sup>th</sup> Annual Meeting of The Canadian Amphibian & Reptile Conservation Network. Edmonton, AB. Abstract.
- Schock, D.M., V.G. Chinchar, T.K. Bollinger, and J.P. Collins J.P. 2004. Saskatchewan ranaviruses cause mortality and sub-lethal infections in multiple amphibian species. 9<sup>th</sup> Annual Meeting of The Canadian Amphibian & Reptile Conservation Network. Edmonton, AB. Abstract.
- Collins, J.P. 2005. The chytrid fungus, *Batrachotrium dendrobatidis*, as a cause of amphibian declines. XI Congress of Mycology at the International Union of Microbial Societies (2005). Abstract.
- Collins, J.P. 2005. Ranaviruses as emerging disease threats to amphibian populations. 5<sup>th</sup> World Congress of Herpetology, Stellenbosch, South Africa (2005). Abstract.

- Fox, S.F., A.L. Greer, R. Torres-Cervantes, and J.P. Collins. 2005. First case of ranavirus-associated morbidity and mortality in natural populations of a South American amphibian: occurrence and effects. Annual Meeting Southwestern Association of Naturalists. Abstract.
- Bolker, B., F. de Castro, A. Storfer, E. Harvey, and J.P. Collins. 2005. Modeling interactions between cannibalism and disease in tiger salamanders. Ecological Society of America. Montreal, Canada. Abstract.
- Miera, V., R. Retallick, J.P. Collins, and E. Davidson. 2005. Host-pathogen ecology of an amphibian community on the Mogollon Rim. Symposium on Current Research of the Herpetofauna of the Sonoran Desert III. Abstract.
- Schock, D., V.G. Chinchir, T. Bollinger, and J.P. Collins. 2005. Amphibian ranaviruses cause morbidity and mortality in multiple species. Symposium on Current Research of the Herpetofauna of the Sonoran Desert III. Abstract.
- Collins, J.P. and B. Sullivan. 2005. Jack Fouquette and Arizona herpetology. Symposium on Current Research of the Herpetofauna of the Sonoran Desert III.
- Collins, J.P. 2005. Integrated research challenges in environmental biology: An international collaborative research project. National Council of University Research Administrators, Region 6.
- Collins, J.P. 2006. Biology as a bridge to the future. Society for Molecular Biology and Evolution.
- Collins, J.P., J. Brunner, A. Greer, V. Miera, A. Picco, R. Retallick, D. Schock. 2006. A comparison of the biology of emerging infectious diseases caused by chytrid fungus (*Batrachochytrium dendrobatidis*) and ranaviruses in tropical and temperate habitats. Annual meeting of the American Society of Ichthyologists and Herpetologists, Abstract.
- Fox, S.F., R. Torres-Cervantes, A.T. Storfer, G. Parra, A.L. Greer, J.P. Collins. 2006. Ranavirus and *Batrachochytrium dendrobatidis* in endangered and diseased populations of the frog *Atelognathus patagonicus* in northern Patagonia, Argentina. Annual meeting of the American Society of Ichthyologists and Herpetologists, Abstract.
- Lips, K.R., F. Brem, R. Brenes, J.D. Reeve, R.A. Alford, J.Voyles, C. Carey, L. Livo, A. Pessier, and J.P. Collins. 2006. Emerging infectious disease and the loss of biodiversity in a Neotropical amphibian community. Annual meeting of the American Society of Ichthyologists and Herpetologists, Abstract.
- Picco A.M. and J.P. Collins. 2006. Human-mediated spread of amphibian pathogens through the tiger salamander bait trade. Annual meeting of the Ecological Society of America, Memphis, TN. Abstract.
- Greer, A.L. and J.P. Collins. 2006. Spatial and temporal variation in *Ambystoma tigrinum* virus (ATV) infection prevalence in a persisting *Ambystoma tigrinum* population on the Kaibab Plateau, AZ. Annual meeting of the Ecological Society of America, Memphis, TN. Abstract.
- Collins, J.P. and B. Minter. 2006. Ecological ethics and scientific assessments. Annual Meeting, Ecological Society of America, Memphis, TN. Abstract.
- Collins, J.P. 2006. Students becoming scientists in the world: Integrating research and education for sustainable development. United Nations University Institute of Advanced Studies and UNESCO conference on "Globalization: Challenges and opportunities for science and technology," Yokohama, Japan. Abstract.
- Picco A.M. and J.P. Collins. 2006. Transport and emergence of infectious diseases through commerce: the bait trade as a model system. EcoHealth ONE Conference, Madison, WI. Poster.
- Collins, J.P. 2006. The LTER network: Past, present...and future. Long Term Ecological Research Network All Scientists Meeting, Estes Park, CO.

- Schock, D.M., T.K. Bollinger, V.G. Chinchar, J.K. Jancovich, and J.P. Collins. 2007. Experimental evidence that amphibian ranaviruses are multi-host pathogens. Annual meeting of the California-Nevada Amphibian Populations Task Force. Abstract.
- Picco, A.M. and J.P. Collins. 2007. Amphibian pathogen movement through the bait trade in North America. Annual meeting of the California-Nevada Amphibian Populations Task Force. Abstract.
- Hoffmann, M., J. Chanson, D. Church, J.P. Collins, N. Cox, C. Gascon, J. Mendelson, R. Moore, S.N. Stuart, B. Young and K. Zippel. 2007. Actions and priorities for conserving the world's amphibians. Annual meeting, Society for Conservation Biology. Abstract.
- Collins, J.P. 2007. Ecology in the 21<sup>st</sup> century: Where to from here? Eco Summit, Beijing, China. Abstract.
- Collins, J.P. 2007. Using genomics to transform research in Herpetology. Annual Meeting, Society for the Study of Amphibians and Reptiles. Abstract.
- Greer, A.L. and J.P. Collins. 2007. Testing a key assumption of host-pathogen theory: Density dependent disease transmission. Annual meeting of the Ecological Society of America, San Jose, CA. Abstract.
- Picco, A.M. and J.P. Collins. 2007. Commercial movement of amphibian pathogens within the bait trade. Annual meeting of the Ecological Society of America, San Jose, CA. Abstract.
- Collins, J.P. 2007. NSF vision for NEON. Annual meeting of the Ecological Society of America, San Jose, CA.
- Collins, J., E. Blood, C.L. Dybas. 2007. U.S. Group on Earth Observations. American Geophysical Union Town Hall, San Francisco, CA.
- Schock, D.M., D.G. Allaire, S. Carrière, J.P. Collins, R.J. Gau, G. Guthrie, N.C. Larter, R. Popko, G. Ruthig, D.P. Tate, A. Veitch. 2007. Amphibians of the Dehcho and Sahtu Regions of the Northwest Territories, Canada. Annual meeting Committee on the Status of Endangered Wildlife in Canada. (Poster)
- Picco, A.M. and J.P. Collins. 2008. Management for controlling the spread of amphibian diseases through trade. Annual meeting of the California-Nevada Amphibian Populations Task Force. Abstract.
- Collins, J.P. 2008. The view of NEON from NSF. Annual meeting of the Ecological Society of America, Milwaukee, WI.
- Collins, J. P. 2008. Concluding remarks, Symposium on "Amphibian conservation: Moving from global to regional." Sixth World Congress of Herpetology, Manaus, Brazil.
- Collins, J.P. 2008. Cyber-enabled research observatories: New horizons in Earth observation. GEO-V: Fifth Plenary of the Group on Earth Observations, Bucharest, Romania.
- Collins, J. 2008. Global amphibian declines: Where we are and where to from here. 9<sup>th</sup> National Conference on Science, Policy and the Environment. National Council for Science and the Environment, Washington, DC.
- Collins, J.P. and J. St. John. 2009. The National Plant Genome Initiative: Third Five Year Plan (2009-2013). Plant & Animal Genome XVII, San Diego, CA. Abstract.
- Collins, J.P. 2009. Biology in the 21<sup>st</sup> Century: Microbial Genome Sequencing Program. Plant & Animal Genome XVII, San Diego, CA.
- Minteer, B.A. and J.P. Collins. 2009. Managed relocation. Conservation, ecological ethics and planetary change. Annual meeting of the Ecological Society of America, Albuquerque, NM.
- Collins, J.P. 2009. Reassembling the pieces: Biological systems and systems biology. Symposium on understanding complexity in biological sciences. History of Science Society, Phoenix, AZ.
- Hyman, O. and J.P. Collins. 2010. Negative influence of phosphorus on prevalence of the frog killing pathogen, *Batrachochytrium dendrobatidis*. Annual meeting of the American Society of Ichthyologists and Herpetologists, Providence, RI. Abstract.

- Zillmann, A.M., O.J. Hyman, J.P. Collins, and V.H. Smith. 2011. Does iron play a role in the dynamics of an emerging infectious disease? Annual meeting of the Society for Integrative and Comparative Biology, Salt Lake City, UT. Poster.
- Hyman, O.J. and J.P. Collins. 2011. *Batrachochytrium dendrobatidis* in Arizona: Detection by water filtration and the influence of water chemistry on Bd dynamics. Annual meeting of the California/Nevada Amphibian Population Task Force 2011 Meeting, Yosemite National Park, CA. Abstract.
- Collins, J.P. 2011. Opening new horizons for large scale biology: The National Ecological Observatory Network or NEON. American Society for Environmental History, Phoenix, AZ (2011).
- Hyman, O.J. and J.P. Collins. 2011. *Batrachochytrium dendrobatidis* in boreal chorus frogs: Life stage and seasonal variation in the prevalence of an endemic pathogen. Annual meeting of the Ecological Society of America, Austin, TX. Poster, Abstract.
- Hyman, O.J. and J.P. Collins. 2011. Life stage and seasonal variation in the prevalence of *Batrachochytrium dendrobatidis* in Boreal Chorus Frogs. Current Research on Herpetofauna of the Sonoran Desert V. Abstract.
- Hyman, O.J. and J.P. Collins. 2011. A role for environment in the loss of chytrid (Bd) infections in Arizona chorus frogs. Wildlife Society, Hawaii. Poster, Abstract.
- Collins, J.P. 2012. The implications of transformations in scientific practice. Annual meeting of the American Association for the Advancement of Science, Vancouver, Canada. Abstract.
- Collins, J.P. and B.A. Minter. 2012. Ecological ethics and invasive species in a time of global change. 7<sup>th</sup> World Congress of Herpetology, Vancouver, Canada. Abstract.
- Langhammer, P.F., P.A. Burrowes, A.B. Bryant, K.R. Lips, and J.P. Collins. 2012. Chytridiomycosis in a direct-developing frog: Ontogenetic susceptibility, pathogen transmission, and population-level impacts of the chytrid fungus in *Eleutherodactylus coqui*. 7<sup>th</sup> World Congress of Herpetology, Vancouver, Canada. Abstract.
- Langhammer, P.F., P.A. Burrowes, K.R. Lips, and J.P. Collins. 2013. Population-level impacts of endemic disease on direct-developing frogs of the Caribbean. 26<sup>th</sup> International Congress for Conservation Biology, Baltimore, MD. Abstract.
- Collins, J., T. Kuiken, and K. Oye. 2014. Creating a research agenda for the ecological implications of synthetic biology. Synthetic Biology, Engineering, Evolution and Design 2014 Conference, Manhattan Beach, CA. Abstract
- Kuiken, T., Oye, K., and J. Collins. 2014. Shaping ecological risk research for synthetic biology. Society of Environmental Toxicology and Chemistry (SETAC) North America, Vancouver, BC, Canada. Abstract.
- Collins, J.P. 2014. Emerging infectious diseases, synthetic biology, and two faces of extinction. First International and Interdisciplinary Workshop on Ecology, Evolution and Dynamics of Dengue and Other Related Diseases, Tempe, AZ. Abstract.
- Collins, J.P. 2015. Ecology in a changing world. Opening Plenary, Centennial Meeting of the Ecological Society of America, Baltimore, MD. Abstract.
- Higgs, S., Collins, J.P., Heitman, E., Achee, N.L., Delborne, J.A., and Kuicken, T. 2016. Gene Drives on the horizon: Advancing science, navigating uncertainty and aligning research with public values. American Society of Tropical Medicine and Hygiene, Atlanta, GA. Abstract.
- Farrell, A., J.P. Collins, A.L. Greer, and H.R. Thieme. 2017. Do fatal infectious diseases eradicate host species? Epidemic perspective. Joint Mathematics Meeting, Atlanta, GA. Abstract.
- Farrell, A., J.P. Collins, A.L. Greer, and H.R. Thieme. 2017. Prey-predator-parasite: an ecosystem model with fragile persistence. Preliminary report. Joint Mathematics Meeting, Atlanta, GA. Abstract.

Collins, J.P. 2017. Gene drives on the horizon: Gene drives—what are they, how do they work, why are they important? Program on “Science, ethics, and engagement in the governance of gene drives.” Annual meeting of the American Association for the Advancement of Science, Boston, MA. Abstract.

### **PODCASTS**

Collins, J.P. and J. Travis. 2016. Gene drive technology: Where is the future? BioScience Talks, American Institute of Biological Sciences available at: <http://bioscienceaibs.libsyn.com/gene-drive-technology-where-is-the-future-bonus-episode#comments>

### **PUBLICATIONS**

#### **Books**

Collins, J.P. and M.L. Crump. 2009. Extinction in Our Times. Global Amphibian Decline. Oxford University Press, Oxford: xxiii + 273 pp.

#### **Edited Volumes**

Collins, J.P., J. Maienschein, and J. Beatty, eds. 1986. Reflections on Ecology and Evolutionary Biology. Special issue of Journal of the History of Biology, v. 19(2), with Introduction: "Between ecology and evolutionary biology" by JPC, JM, and JB, pp. 169-180.

Gascon, C., J.P. Collins, R.D. Moore, D.R. Church, J.E. McCay, J.R. Mendelson III, eds. 2007. Amphibian conservation action plan. IUCN/SSC Amphibian Specialist Group. Gland, Switzerland and Cambridge, UK. 64 pp: with “Foreword” by JPC, CG, and JRM, p. 2. and “Executive Summary” by CG, JPC, RDM, DRC, JM, and JRM. [Available on the Amphibian Specialist Group homepage ([www.amphibians.org](http://www.amphibians.org))].

Bird, S.J., B.A. Minter, and J.P. Collins. 2008. Ecological Ethics. Special issue of Science and Engineering Ethics 14 (4): 473-592, with Introduction: “Editor’s overview: The emergence of ecological ethics” by BAM, JPC, and SJB, pp. 473-481.

Collins, J. P. and E. Heitman co-chairs and co-authors with 14 other committee members and co-authors. 2016. National Academies of Sciences, Engineering, and Medicine. Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values. 230 pp. The National Academies Press. doi: 10.17226/23405.

Minter, B.A., J. Maienschein, and J.P. Collins, eds. 2018. The Ark and Beyond. The Evolution of Zoo and Aquarium Conservation. University of Chicago Press, Chicago: xiv + 454 pp. Introduction: “Zoo and aquarium conservation: Past, present, future” by BAM, JM, and JPC: pp. 1-12.

#### **Expert Testimony**

Collins, J. P. 2009. “Investing in high-risk, high-reward research.” Hearing before the Subcommittee on Research and Science Education, Committee on Science and Technology, U.S. House of Representatives, One Hundred Eleventh Congress, First Session, October 8, 2009. Serial No. 111-55: pp. 21-33. U.S. Government Printing Office, Washington, D.C., published 2010 and available at:

[http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111\\_house\\_hearings&docid=f:52484.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_house_hearings&docid=f:52484.pdf)

Collins, J. P. 2010. “21<sup>st</sup> century biology.” Hearing before the Subcommittee on Research and Science Education, Committee on Science and Technology, U.S. House of Representatives, June 29, 2010. U.S. Government Printing Office, Washington, D.C., pp. 13-20; written testimony available at <http://www.gpo.gov/fdsys/pkg/CHRG-111hrg57601/html/CHRG-111hrg57601.htm>; oral testimony at:

[http://science.house.gov/publications/hearings\\_markups\\_details.aspx?NewsID=2865](http://science.house.gov/publications/hearings_markups_details.aspx?NewsID=2865).

Collins, J. P. 2015. “NSF’s Oversight of the NEON Project and other Major Research Facilities Developed Under Cooperative Agreements.” Hearing before House (U.S. House of Representatives) Committee on Science, Space, and Technology, Subcommittees on



Research and Technology and Oversight, February 3, 2015; written testimony at: <http://science.house.gov/sites/republicans.science.house.gov/files/documents/HHRG-114-SY21-WState-JCollins-20150203.pdf>; hearing archived at: <http://science.house.gov/hearing/subcommittee-oversight-and-subcommittee-research-and-technology-joint-hearing-nsf-s>

Collins, J. P. 2015. "NEON Warning Signs: Examining the Management of the National Ecological Observatory Network." Joint Subcommittee hearing House (U.S. House of Representatives) Committee on Science, Space, and Technology, Subcommittees on Research and Technology and Oversight, September 18, 2015; written testimony at: <http://democrats.science.house.gov/sites/democrats.science.house.gov/files/documents/9.18.15>; hearing archived at: <http://democrats.science.house.gov/hearing/neon-warning-signs-examining-management-national-ecological-observatory-network>

#### **Refereed Journal Articles (peer-reviewed)**

- Collins, J.P. 1971. Ecological observations on a little known South American anole, *Tropidodactylus onca*. *Breviora* no. 370:1-6.
- Wilbur, H.M., and J.P. Collins. 1973. Ecological aspects of amphibian metamorphosis. *Science* 182:1305-1314.
- Wilbur, H.M., D.W. Tinkle, and J.P. Collins. 1974. Environmental certainty, trophic level, and resource availability in life history evolution. *American Naturalist* 108: 805-817.
- Collins, J.P., R. Berkelhamer, and M. Mesler. 1977. Notes on the natural history of the mangrove, *Pelliciera rhizophorae* (Theaceae). *Brenesia* nos. 10/11:17-31.
- Collins, J.P., and M.A. Lewis. 1979. Overwintering tadpoles and multiple breeding in the *Rana pipiens* complex in Arizona. *Southwestern Naturalist* 24:371-373.
- Collins, J.P. and H.M. Wilbur. 1979. Breeding habits and habitats of the amphibians of the E. S. George Reserve, Michigan, with notes on the local distribution of fishes. *Occasional Papers Museum Zoology University Michigan* no. 686:1-34.
- Collins, J.P. 1979. Sexually mature larvae of the salamanders *Ambystoma rosaceum* and *A. tigrinum velasci* from Chihuahua, Mexico: taxonomic and ecologic notes. *Journal of Herpetology* 13:351-354.
- Collins, J.P. 1979. Intrapopulation variation in the body size at metamorphosis and the timing of metamorphosis in the bullfrog, *Rana catesbeiana*. *Ecology* 60:738-749.
- Collins, J.P., J.B. Mitton, and B.A. Pierce. 1980. *Ambystoma tigrinum*: A multi-species conglomerate? *Copeia* 1980 (4):938-941.
- Franzblau, M.A. and J.P. Collins. 1980. Test of a hypothesis of territory regulation in an insectivorous bird by experimentally increasing prey abundance. *Oecologia* 46:164-170.
- Collins, J.P. 1981. Distribution, habitats, and life history variation in the tiger salamander, *Ambystoma tigrinum*, in east-central and southeast Arizona. *Copeia* 1981(3):666-675.
- Collins, J.P., C. Young, J. Howell, and W.L. Minckley. 1981. Impact of flooding in a Sonoran Desert stream, including elimination of an endangered fish population (*Poeciliopsis o. occidentalis*, Poeciliidae). *Southwestern Naturalist* 26:415-423.
- Collins, J.P. and J.E. Cheek. 1983. Effect of food and density on development of typical and cannibalistic salamander larvae in *Ambystoma tigrinum nebulosum*. *American Zoologist* 23:77-84.
- Holomuzki, J.R. and J.P. Collins. 1983. Diel movement of larvae of the tiger salamander, *Ambystoma tigrinum nebulosum*. *Journal of Herpetology* 17(3): 276-278.
- Collins, J.P. and J.R. Holomuzki. 1984. Intraspecific variation in diet within and between trophic morphs in larval tiger salamanders (*Ambystoma tigrinum nebulosum*). *Canadian Journal of Zoology* 62:168-174.

- Collins, J.P. 1986. Evolutionary Ecology and the use of natural selection in ecological theory. *Journal of the History of Biology* 19:257-288.
- Jones, T.R., J.P. Collins, T.D. Kocher, and J.B. Mitton. 1988. Systematic status and distribution of *Ambystoma tigrinum stebbinsi* Lowe. *Copeia* 1988(3):621-635.
- Fernandez, P.J. and J.P. Collins. 1988. Effect of environment and ontogeny on color pattern variation in Arizona tiger salamanders (*Ambystoma tigrinum nebulosum* Hallowell). *Copeia* 1988(4):930-940.
- Pfennig, D.W., M.L.G. Loeb, and J.P. Collins. 1991. Pathogens as a factor limiting the spread of cannibalism in tiger salamanders. *Oecologia* 88:161-166.
- Sredl, M.J. and J.P. Collins. 1991. The effect of ontogeny on interspecific interactions in larval amphibians. *Ecology* 72:2232-2239.
- Zerba, K.E. and J.P. Collins. 1992. Spatial heterogeneity and individual variation in diet of an aquatic top predator. *Ecology* 73:268-279.
- Begun, D.J. and J. P. Collins. 1992. Biochemical plasticity in the Arizona tiger salamander (*Ambystoma tigrinum nebulosum*). *Journal of Heredity* 83:224-227.
- Sredl, M.J. and J.P. Collins. 1992. The interaction of predation, competition, and habitat complexity in structuring an amphibian community. *Copeia* 1992(3): 607-614.
- Reilly, S.M., G.V. Lauder, and J.P. Collins. 1992. Performance consequences of trophic polymorphism: feeding behavior in typical and cannibal phenotypes of *Ambystoma tigrinum*. *Copeia* 1992(3):672-679.
- Jones, R.J. and J.P. Collins. 1992. Analysis of a hybrid zone between subspecies of the tiger salamander (*Ambystoma tigrinum*) in central New Mexico. *Journal of Evolutionary Biology* 5:375-402.
- Pfennig, D.W. and J.P. Collins. 1993. Kinship affects morphogenesis in cannibalistic salamanders. *Nature* 362:836-838.
- Collins, J.P., K.E. Zerba, and M.J. Sredl. 1993. Shaping intraspecific variation: development, ecology and the evolution of morphology and life history variation in tiger salamanders. *Genetica* 89:167-183.
- Loeb, M.L.G., J.P. Collins, and T.J. Maret. 1994. The role of prey in controlling expression of a trophic polymorphism in *Ambystoma tigrinum nebulosum*. *Functional Ecology* 8:151-158.
- Pfennig, D.W., P.W. Sherman, and J.P. Collins. 1994. Kin recognition and cannibalism in polyphenic salamanders. *Behavioral Ecology* 5:225-232.
- Allison, L.J., P.E. Brunkow, and J.P. Collins. 1994. Opportunistic breeding after summer rains by Arizona tiger salamanders. *Great Basin Naturalist* 54:376-379.
- Holomuzki, J.R., J.P. Collins, and P.E. Brunkow. 1994. Trophic control of fishless ponds by tiger salamander larvae. *Oikos* 71:55-64.
- Maret, T.J. and J.P. Collins. 1994. Individual responses to population size structure: the role of size variation in controlling expression of a trophic polyphenism. *Oecologia* 100:279-285.
- Jones T.R., E.J. Routman, D. Begun, and J.P. Collins. 1995. Ancestry of an isolated subspecies of salamander, *Ambystoma tigrinum stebbinsi* Lowe: the evolutionary significance of hybridization. *Molecular Phylogenetics and Evolution* 4:194-202.
- Maret, T.J. and J.P. Collins. 1996. Effect of prey vulnerability on population size structure of a gape-limited predator. *Ecology* 77:320-324.
- Brunkow, P.B. and J.P. Collins. 1996. Effects of individual variation in size on growth and development of larval salamanders. *Ecology* 77:1483-1492.
- Maret, T.J. and J.P. Collins. 1997. Ecological origin of morphological diversity: A study of alternative trophic phenotypes in larval salamanders. *Evolution* 51:898-905.

- Jancovich, J.K., E.W. Davidson, J.F. Morado, B.L. Jacobs, and J.P. Collins. 1997. Isolation of a lethal virus from the endangered tiger salamander, *Ambystoma tigrinum stebbinsi*. *Diseases of Aquatic Organisms* 31:161-167.
- Maienschein, J., J.P. Collins, and D. Strouse, 1998. Biology and law: Challenges of adjudicating competing claims in a democracy. *Jurimetrics* 38:151-181.
- Brunkow, P.E. and J.P. Collins. 1998. Group size affects patterns of aggression in larval salamanders. *Behavioral Ecology* 9:508-514.
- Pfennig, D.W., J.P. Collins, and R.E. Ziemba. 1999. A test of alternative hypotheses for kin recognition in cannibalistic salamanders. *Behavioral Ecology* 10:436-443.
- Ziemba, R.E. and J.P. Collins. 1999. Development of size structure in tiger salamanders: the role of intraspecific interference. *Oecologia* 120:524-529.
- Ziemba, R.E., M.T. Myers, and J.P. Collins. 2000. Foraging under the risk of cannibalism leads to divergence in body size among tiger salamanders. *Oecologia* 124:225-231.
- Collins, J.P., A.P. Kinzig, N.B. Grimm, W.F. Fagan, D. Hope, J. Wu, and E.T. Borer. 2000. A new urban ecology. *American Scientist* 88: 416-425.
- Jancovich, J.K., E.W. Davidson, A. Seiler, B.L. Jacobs, and J.P. Collins. 2001. Transmission of the *Ambystoma tigrinum* virus to alternative hosts. *Diseases of Aquatic Organisms* 46:159-163.
- Collins, J.P. 2002. May you live in interesting times: Using multidisciplinary and interdisciplinary programs to cope with change in the life sciences. *BioScience* 52:75-83.
- Collins, J.P. and A. Storfer. 2003. Global amphibian declines: sorting the hypotheses. *Diversity and Distributions* 9:89-98.
- Collins, J.P. 2003. What can we learn from community genetics? *Ecology* 84:574-577.
- Davidson, E.W., M. Parris, J.P. Collins, J.E. Longcore, A. Pessier, J. Brunner. 2003. Pathogenicity and host transmission of chytridiomycosis in tiger salamanders (*Ambystoma tigrinum*). *Copeia*: 2003(3):601-607.
- Jancovich, J.K., J. Mao, V.G. Chinchar, C. Wyatt, S.T. Case, S. Kumar, G. Valente, S. Subramanian, E.W. Davidson, J.P. Collins, and B.L. Jacobs. 2003. Genomic sequence of a ranavirus (family Iridoviridae) associated with salamander mortalities in North America. *Virology* 316:90-103.
- Collins, J.P. 2004. Where have all the frogs gone? *Natural History* 113:44-49.
- Brunner, J.L., D.M. Schock, E.W. Davidson, and J.P. Collins. 2004. Intraspecific reservoirs: complex life history and the persistence of a lethal ranavirus. *Ecology*: 85:560-566.
- Collins, J.P., J.L. Brunner, J. Jancovich, and D.M. Schock. 2004. A model host-pathogen system for studying infectious disease dynamics in amphibians: tiger salamanders (*Ambystoma tigrinum*) and *Ambystoma tigrinum* virus. *Herpetological Journal* 14: 195- 200.
- Storfer, A.S., S.G. Mech, M.W. Reudink, R.E. Ziemba, J. Warren, and J.P. Collins. 2004. Evidence for introgression in the endangered Sonora tiger salamander, *Ambystoma tigrinum stebbinsi*. (Lowe). *Copeia* 2004(4):783-796.
- Parris, M.J., A. Davis, and J.P. Collins. 2004. Single-host pathogen effects on mortality and behavioral responses to predators in salamanders (Urodela: Ambystomatidae). *Can. J. Zool.* 82:1477-1483.
- Jancovich, J.K., E.W. Davidson, N. Parameswaran, J. Mao, V.G. Chinchar, J.P. Collins, B.L. Jacobs, and A. Storfer. 2005. Evidence for emergence of an amphibian iridoviral disease because of human-enhanced spread. *Molecular Ecology* 14:213-224.
- Collins, J.P. and T. Halliday. 2005. Forecasting changes in amphibian biodiversity: aiming at a moving target. *Philosophical Transactions B, Roy. Soc., London* 360:309-314.
- Minteer, B.A. and J.P. Collins. 2005. Why we need an "ecological ethics." *Frontiers in Ecology and the Environment* 3:332-337.

- Rachowicz, L.J., J-M Hero, R.A. Alford, J.W. Taylor, J.A.T. Morgan, V.T. Vredenburg, J.P. Collins, and C.J. Briggs. 2005. The novel and endemic pathogen hypotheses: Competing explanations for the origin of emerging diseases of wildlife. *Conservation Biology* 19:1441-1448.
- Brunner, J.L., K. Richards, and J.P. Collins. 2005. Dose and host characteristics influence virulence of ranavirus infections. *Oecologia* 144:399-406.
- Parris, M.J., A. Storfer, J.P. Collins, and E.W. Davidson. 2005. Life history responses to pathogens in tiger salamander (*Ambystoma tigrinum*) larvae. *J. Herpetology* 39: 366-372.
- Minteer, B.A. and J.P. Collins. 2005. Ecological ethics: Building a new tool kit for ecologists and biodiversity managers. *Conservation Biology* 19:1803-1812.
- Minteer, B.A. and J.P. Collins. 2006. Letter: Response to Reminger, E.M., V.C. Bleich, and E.J. Goldstein, Bighorn sheep, mountain lions, and the ethics of conservation. *Conservation Biology* 20:1341.
- Maret, T.J., J.D. Snyder, J.D., and J.P. Collins. 2006. Altered drying regime controls distribution of endangered salamanders and introduced predators. *Biological Conservation* 127:129-138.
- Lips, K.R., F. Brem, R. Brenes, J.D. Reeve, R.A. Alford, J. Voyles, C. Carey, A. Pessier, L. Livo, and J.P. Collins. 2006. Emerging infectious disease and the loss of biodiversity in a Neotropical amphibian community. *Proceedings of the National Academy of Sciences USA* 103:3165-3170 + Online supplementary material.
- Mendelson III, J.R., K.R. Lips, R.W. Gagliardo, G.B. Rabb, J.P. Collins et al. (50 authors total) 2006. Confronting amphibian declines and extinctions. *Science* 313:48 + 13 pp. online supplemental material.
- Mendelson III, J.R., K.R. Lips, J.E. Diffendorfer, R.W. Gagliardo, G.B. Rabb, J.P. Collins et al. (17 authors total). 2006. Letters: Response to Pounds, J.A. et al. Responding to amphibian loss. *Science* 314:1541-1542.
- Retallick, R.W.R., V. Miera, K.L. Richards, K.J. Field, J.P. Collins. 2006. A non-lethal technique for detecting the chytrid fungus *Batrachochytrium dendrobatidis* on tadpoles. *Diseases of Aquatic Organisms* 72:77-85.
- Fox, S.F., A.L. Greer, R. Torres-Cervantes, and J.P. Collins. 2006. First case of ranavirus-associated morbidity and mortality in natural populations of a South American frog, *Atelognathus patagonicus*. *Diseases of Aquatic Organisms* 72:87-92.
- Picco, A.M., J.L. Brunner, and J.P. Collins. 2007. Susceptibility of the endangered California tiger salamander, *Ambystoma californiense*, to ranavirus infection. *J. Wildlife Diseases* 43:286-290.
- Greer, A.L. and J.P. Collins. 2007. Sensitivity of a diagnostic test for amphibian Ranavirus varies with sampling protocol. *J. Wildlife Diseases* 43:525-532.
- Picco, A.M. and J.P. Collins. 2007. Fungal and viral pathogen occurrence in Costa Rican amphibians. *Journal of Herpetology* 41:746-749.
- Storfer A., M.E. Alfaro, B.J. Ridenhour, J.K. Jancovich, S.G. Mech, M.J. Parris, and J.P. Collins. 2007. Phylogenetic concordance analysis shows an emerging pathogen is novel and endemic. *Ecology Letters* 10:1075-1083.
- Brunner, J.L., D.M. Schock, J.P. Collins. 2007. Transmission dynamics of the amphibian ranavirus *Ambystoma tigrinum* virus. *Diseases of Aquatic Organisms*: 77:87-95.
- Bolker, B.M., F. de Castro, A. Storfer, S. Mech, E. Harvey, and J.P. Collins. 2008. Disease as a selective force precluding widespread cannibalism: A case study of an iridovirus of tiger salamanders, *Ambystoma tigrinum*. *Evolutionary Ecology Research* 10:105-128.
- Schock, D.M., T.K. Bollinger, V.G. Chinchar, J.K. Jancovich, and J.P. Collins. 2008. Experimental evidence of amphibian ranaviruses as multi-host pathogens. *Copeia*

- 2008(1):133-143.
- Colón, W., P. Chitnis, J.P. Collins, J. Hicks, T. Chan, and J.S. Tornow. 2008. Chemical Biology at the US National Science Foundation. *Nature Chemical Biology* 4:511-514.
- Greer, A.L., C.J. Briggs, and J.P. Collins. 2008. Testing a key assumption of host-pathogen theory: density and disease transmission. *Oikos* 117:1667-1673.
- Picco, A.M. and J.P. Collins. 2008. Amphibian commerce as a likely source of pathogen pollution. *Conservation Biology* 22:1582-1589.
- Greer, A.L. and J.P. Collins. 2008. Habitat fragmentation as a result of biotic and abiotic factors controls pathogen transmission throughout a host population. *J. Animal Ecology* 77: 364-369.
- Minteer, B.A. and J.P. Collins. 2008. From environmental to ecological ethics: Toward a practical ethics for ecologists and conservationists. *Science and Engineering Ethics* 14:483-501.
- Greer, A.L., J.L. Brunner, and J.P. Collins. 2009. Spatial and temporal patterns of *Ambystoma tigrinum* Virus (ATV) prevalence in tiger salamanders *Ambystoma tigrinum nebulosum*. *Diseases of Aquatic Organisms* 85:1-6.
- Brunner, J. and J.P. Collins. 2009. Testing assumptions of the trade-off theory of the evolution of parasite virulence. *Evolutionary Ecology Research* 11:1169-1188.
- Greer, A.L., D.M. Schock, J.L. Brunner, R.A. Johnson, A.M. Picco, S.D. Cashins, R.A. Alford, L.F. Skerratt, and J.P. Collins. 2009. Guidelines for the safe use of disposable gloves with amphibian larvae in the light of pathogens and possible toxic effects. *Herpetological Review* 40:145-147.
- Schock, D. M., T. K. Bollinger, and J. P. Collins. 2009. (Published 2010). Mortality rates differ among amphibian populations exposed to three strains of a lethal ranavirus. *EcoHealth* 6:438-448.
- Minteer, B.A. and J.P. Collins. 2010. Move it or lose it? The ecological ethics of relocating species under climate change. *Ecological Applications* 20:1801-1804.
- Schock D.M., G.R. Ruthig, J.P. Collins, S.J. Kutz, S.J. Carrière, R.J. Gau, A.M. Veitch, N.C. Larter, D.P. Tate, G. Guthrie, D.G. Allaire, R.A. Popko. 2010. Amphibian chytrid fungus and ranaviruses in the Northwest Territories, Canada. *Diseases of Aquatic Organisms*: 92:231-240.
- Collins, J.P. 2010. Amphibian decline and extinction: What we know and what we need to learn. *Diseases of Aquatic Organisms*: 92:93-99.
- Picco, A.M., A.P. Karam, and J.P. Collins. 2010. Pathogen host switching in commercial trade with management recommendations. *EcoHealth* 7:252-256.
- Krakauer, D.C., J.P. Collins, D. Erwin, J.C. Flack, W. Fontana, M.D. Laubichler, S.J. Prohaska, G.B. West, and P.F. Stadler. 2011. The challenges and scope of theoretical biology. *J. Theoretical Biology* 276:269-276.
- Hyman, O.J. and J.P. Collins. 2012. Evaluation of a filtration based method for detecting *Batrachochytrium dendrobatidis* in natural bodies of water. *Diseases of Aquatic Organisms* 97:185-195.
- Gascon, C., J.P. Collins, D.R. Church, R.D. Moore, F. Andreone, P. Bishop, S. Das Biju, F. Bolaños, X. Feng, S. Haitao, M. Lampo, Z. Li, S. Lötters, Y. Matamoros, M. Meegaskumbura, S. Molur, P. Nanjappa Mitchell, J. Mora, J. Garcia Moreno, L. Pipeng, J. Reardon, A. Rial, C. Molina Rodriguez, S. Ron, J. J. L. Rowley, J. C. Señaris, D. Silvano, P. H. Valdujo, and V. K. Verdade. 2012. Scaling a global plan into regional strategies for amphibian conservation. *Alytes* 29:14-26.
- Minteer, B.A. and J.P. Collins. 2012. Species conservation, rapid environmental change, and ecological ethics. *Nature Education Knowledge* 3(6):14

<http://www.nature.com/scitable/knowledge/library/species-conservation-rapid-environmental-change-and-ecological-67648942>).

- Collins, J.P. 2013. History, novelty, and emergence of an infectious amphibian disease. *Proceedings of the National Academy of Sciences USA* 110:9193-9194.
- Schmidt, B.R., M. Kéry, S. Ursenbacher, O.J. Hyman, J.P. Collins. 2013. Site occupancy models in the analysis of environmental DNA presence/absence surveys: A case study of an emerging amphibian pathogen. *Methods in Ecology and Evolution* 4:646-653.
- Minteer, B.A. and J.P. Collins. 2013. Ecological ethics in captivity: Balancing values and responsibilities in zoo and aquarium research under rapid global change. *Institute for Laboratory Animal Research Journal, National Research Council USA* 54:41-51.
- Langhammer, P.F., K.R. Lips, P.A. Burrowes, T. Tunstall, C.M. Palmer, and J.P. Collins. 2013. A fungal pathogen of amphibians, *Batrachochytrium dendrobatidis*, attenuates in pathogenicity with *in vitro* passages. *PLoS ONE* 8(10): e77630. doi:10.1371/journal.pone.0077630
- Winston, J.M., B.A. Minteer, and J.P. Collins. 2014. Old wine, new bottles? Using history to inform the assisted colonization debate. *Oryx* 48:186-194.
- Minteer, B.A., J.P. Collins, K.E. Love, and R. Puschendorf. 2014. Avoiding (re)extinction. *Science* 344:260-261.
- Minteer, B.A., J.P. Collins, and R. Puschendorf. 2014. Letters: Response to Rocha et al., Responding to “Avoiding (re)extinction.” *Science* 344:816.
- Collins, J.P. 2014. Leadership and change in twenty-first century higher education. *BioScience* 64:561-562.
- Oye, K.A., K. Esvelt, E. Appleton, F. Catteruccia, G. Church, T. Kuiken S. Bar-Yam Lightfoot, J. McNamara, A. Smidler, and J.P. Collins. 2014. Regulating gene drives. *Science* 345:626-630.
- Voyles, J., A.M. Kilpatrick, J.P. Collins, M.C. Fisher, W.F. Frick, H. McCallum, C.K.R. Willis, D. Blehert, K.A. Murray, R. Puschendorf, E.B. Rosenblum, B.M. Bolker, T.L. Cheng, K.E. Langwig, D.L. Linder, M. Toothman, M.Q. Wilber, C.J. Briggs. 2014. Beyond too little, too late: Managing emerging infectious diseases requires international action. *EcoHealth*: 4pp. DOI: 10.1007/s10393-014-0980-5.
- Langhammer, P.F., P.A. Burrowes, K.R. Lips, A.B. Bryant, J.P. Collins. 2014. Susceptibility to the amphibian chytrid fungus varies with ontogeny in the direct-developing frog *Eleutherodactylus coqui*. *Journal of Wildlife Diseases* 50:438-446.
- Potter, S., S.G. Stafford, J.L. Travis, J.P. Collins, S.T.A. Pickett, C.B. Fenster, E.S. Nagy, and M. Poston. 2015. Opportunities abound: A call for leadership in the life sciences. *BioScience* 65:14-20.
- Langwig, K. E., J. Voyles, M. Q. Wilber, W. F. Frick, K. A. Murray, B. M. Bolker, J. P. Collins, T. L. Cheng, M. C. Fisher, J. R. Hoyt, D. L. Lindner, H. I. McCallum, R. Puschendorf, E. B. Rosenblum, M. Toothman, C. K. R. Willis, C. J. Briggs, A. M. Kilpatrick. 2015. Context dependent conservation responses to emerging wildlife diseases. *Frontiers in Ecology and the Environment* 13:195-202.
- Dolan, E. and J. P. Collins. 2015. We must teach more effectively—here are four ways to get started. *Molecular Biology of the Cell* 26:2151-2155.
- James, T. Y., Toledo, L. F., Rödder, D., Leite, D. S., Belasen, A. M., Betancourt-Román, C. M., Jenkinson, T. S., Lambertini, C., Longo, A. V., Ruggeri, J., Collins, J. P., Burrowes, P. A., Lips, K. R., Zamudio, and J. E. Longcore. 2015. Disentangling host, pathogen, and environmental determinants of a recently emerged wildlife disease: lessons from the first 15 years of amphibian chytridiomycosis research. *Ecology and Evolution*: DOI: 10.1002/ece3.1672.

- Hyman, O. J. and J. P. Collins. 2015. Batrachochytrium dendrobatidis dynamics in an isolated Northern Leopard Frog (*Lithobates pipiens*) population in Arizona. *Herpetological Review* 46: 535-537.
- Wu, T., C. Perrings, A. Kinzig, J.P. Collins, B.A. Minteer, and P. Daszak, 2016. Economic growth, urbanization, globalization, and the risks of emerging infectious diseases in China: A review. *Ambio* 1-12. doi:10.1007/s13280-016-0809-2
- Kaebnick, G. K., E. Heitman, J. P. Collins, J. A. Delborne, W. Landis, K. Sawyer, L. A. Taneyhill, and D. E. Winickoff. 2016. Reasonable precaution and the governance of emerging technologies. *Science* 354:710-711.
- Kuzma, J., F. Gould, Z. Brown, J. Collins, J. Delborne, E. Frow, K. Esvelt, D. Guston, K. Oye, and A. Stauffer. 2017. A Roadmap for gene drives: Using institutional analysis and development to frame research needs and governance in a systems context. *Journal of Responsible Innovation*: 1-27. <https://doi.org/10.1080/23299460.2017.1410344>
- Relyea, R. A., P. R. Stephens, L. N. Barrow, A. R. Blaustein, P. W. Bradley, J. C. Buck, A. Chang, J. P. Collins, B. Crother, J. Earl, S. S. Gervasi, J. T. Hoverman, O. Hyman, E. M. Lemmon, T. M. Luhring, M. Michelson, C. Murray, S. Price, R. D. Semlitsch, A. Sih, A. B. Stoler, N. VandenBroek, A. Warwick, G. Wengert, J. I. Hammond. 2018. Phylogenetic patterns of trait and trait plasticity evolution: Insights from amphibian embryos. *Evolution*: 72:1-16.
- Collins, J. P. 2018. Change is key to frog survival. *Science* 359:1458-1459.
- Farrell, A. P., J. P. Collins, A. L. Greer, H. R. Thieme. 2018. Times from infection to disease-induced death and their influence on final population sizes after epidemic outbreaks. *Bulletin of Mathematical Biology*. 80:1- 25pp. (DOI) 10.1007/s11538-018-0446-y.
- Farrell, A. P., J. P. Collins, A. L. Greer, H. R. Thieme. 2018. Do fatal infectious diseases eradicate host species? *Journal of Mathematical Biology*. 76:1-65pp. (DOI) 10.1007/s00285-018-1249-3.

### Chapters in Books or Symposium Volumes

- Sipe, E.S., J.P. Collins, A.E. Dittert, and R.C. Goodwin. 1980. The preservation and study of prehistoric coral and coral artifacts: a case study from St. Kitts, West Indies: pp. 246-263. **In:** S.M. Lewenstein, ed. *Proceedings: Eighth International Congress for the Study of the Pre-Columbian Cultures of the Lesser Antilles*. Arizona State University Anthropological Research Paper no. 22:1-624.
- Brown, D.E., W.L. Minckley, and J.P. Collins. 1982 (published 1983). Historical background of Southwestern ecological studies: pp. 17-23 + literature cited. **In:** D.E. Brown, ed. *Biotic Communities of the American Southwest - United States and Mexico*. *Desert Plants* 4(1-4):1-342.
- Collins, J.P. 1988. Interindividual comparisons: pp. 242-243. **In:** M.E. Feder, A.F. Bennett, W.W. Burggren, R.B. Huey, eds. *New Directions in Ecological Physiology*. Cambridge University Press, Cambridge:1-364.
- Collins, J.P., T.R. Jones, and H.J. Berna. 1988. Conserving genetically-distinctive populations: the case of the Huachuca tiger salamander (*Ambystoma tigrinum stebbinsi* Lowe): 45-53. **In:** R.C. Szaro, K.C. Severson, and D.R. Patton, eds. *Management of amphibians, reptiles, and small mammals in North America*. USDA Forest Service GTR-RM-166, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO: 1-458.
- Collins, J.P., K.E. Zerba, and M.J. Sredl. 1994. Shaping intraspecific variation: development, ecology and the evolution of morphology and life history variation in tiger salamanders: pp. 169-185. **In:** T. A. Markow, ed. *Developmental instability: its origins and evolutionary implications*. Kluwer, Dordrecht:1-440. [Published originally as Collins et al. (1993) - see above.]

- Brown, D.E., W.L. Minckley, and J.P. Collins. 1994. Historical background of Southwestern ecological studies: pp. 17-23 + literature cited. **In:** D.E. Brown, ed. *Biotic Communities: Southwestern United States and Northwestern Mexico*. University of Utah Press, Salt Lake City: 1-342. [originally published as Brown et al. (1982), see above.]
- Collins, J.P. 1998. Adjudicating nature: science, law, and policy in a southern Arizona grassland, pp. 226-234. **In:** J. Feller and D. Strouse, eds. Proceedings for the symposium on "Environmental, economic, and legal issues related to rangeland water developments." Center for the Study of Law, Science, and Technology, Arizona State University.
- Collins, J.P. 1998. Commentary, pp. 619-622. **In:** J. Feller and D. Strouse, eds. Proceedings for the symposium on "Environmental, economic, and legal issues related to rangeland water developments." Center for the Study of Law, Science, and Technology, Arizona State University.
- Collins, J.P. 2000. Evolutionary Ecology and the use of natural selection in ecological theory, pp. 288-303. **In:** D.R. Keller and F.B. Golley, eds. *The philosophy of ecology: From science to synthesis*. University of Georgia Press, Athens. [originally published as Collins (1986), see above.]
- Collins, J.P., J. Brunner, V. Miera, M. Parris, D. Schock, and A. Storfer. 2003. Ecology and evolution of infectious disease: pp. 137-151. **In:** R.D. Semlitsch, ed. *Amphibian conservation*. Smithsonian Institution Press, Washington, D.C.
- Carey, C., D.F. Bradford, J.L. Brunner, J.P. Collins, E.W. Davidson, J.E. Longcore, M. Ouellet, A.P. Pessier, and D.M. Schock. 2003. Biotic factors in amphibian population declines. pp. 153 - 208. **In:** G.L. Linder, S.K. Krest, and D.W. Sparling, eds. *Amphibian decline: An integrated analysis of multiple stressor effects*. Society of Environmental Toxicology and Chemistry (SETAC), Pensacola, Florida.
- Collins, J.P., N. Cohen, E.W. Davidson, J.E. Longcore and A. Storfer. 2005. Meeting the challenge of amphibian declines with an interdisciplinary research program. pp. 23 - 27. **In:** Lannoo, M.J., ed. *Amphibian declines: The conservation status of United States species*. University of California Press, Berkeley, California.
- Collins, J.P., J.S. Tornow, and J.P. Roskoski. 2006. Students becoming scientists in the world: Integrating research and education for sustainable development. **In:** UNU/UNESCO International Conference, Yokohama, Japan. 1-9 pp. (available at: [http://archive.unu.edu/globalization/2006/files/Collins\\_UNESCO\\_paper.pdf](http://archive.unu.edu/globalization/2006/files/Collins_UNESCO_paper.pdf)).
- Daszak, P., K. Lips, R. Alford, C. Carey, J.P. Collins, A. Cunningham, R. Harris and S. Ron. 2007. Infectious diseases. pp. 21-25. **In:** C. Gascon, J.P. Collins, R.D. Moore, D.R. Church, J.E. McCay, J.R. Mendelson III, eds. *Amphibian conservation action plan*. IUCN/SSC Amphibian Specialist Group. Gland, Switzerland and Cambridge, UK. 64 pp.
- Collins, J.P., S. Gilbert, M.D. Laubichler, and G.B. Müller. 2007. Modeling in EvoDevo: How to integrate development, evolution, and ecology. pp. 355-378. **In:** M. Laubichler and G. Müller, eds. *Modeling biology: Structures, behaviors, evolution*. The Vienna Series in Theoretical Biology, MIT Press, Cambridge.
- Bement, A. Jr., J. Collins, J. Wing, R. Buckius, J. Moyers, D Lightfoot, D. Atkins, K. Erb, and K. Olsen. 2007. NSF's observing systems: platforms for large-scale environmental research. pp. 88-91. **In:** GEO (Group on Earth Observations) Secretariat, eds. *The full picture*. Tudor Rose, Geneva, Switzerland. [A pdf of the book "The full picture" is on the international GEO/GEOSS web site: [http://earthobservations.org/documents/the\\_full\\_picture.pdf](http://earthobservations.org/documents/the_full_picture.pdf)].
- Gascon, C. and J.P. Collins. 2008. Preface. p. xi. **In:** S.N. Stuart, M. Hoffmann, J.S. Chanson, N.A. Cox, R.J. Berridge, P. Ramani, and B.E. Young, eds. *Threatened Amphibians of the World*. Lynx Edicions, Barcelona, Spain; IUCN, Gland Switzerland; and Conservational International, Arlington, Virginia, USA.



- Hoffman, M., D. Church, J.P. Collins, N. Cox, C. Gascon, J.H. Mendelson III, R.D. Moore, S.N. Stuart, and K.C. Zippel. 2008. Amphibian Conservation – responding to the global decline of amphibians. pp. 114-124. **In:** S.N. Stuart, M. Hoffmann, J.S. Chanson, N.A. Cox, R.J. Berridge, P. Ramani, and B.E. Young, eds. *Threatened Amphibians of the World*. Lynx Edicions, Barcelona, Spain; IUCN, Gland Switzerland; and Conservation International, Arlington, Virginia, USA.
- Minteer, B.A. and J.P. Collins. 2008. Ecological ethics: Building a new tool kit for ecologists and biodiversity managers. **In:** Armstrong and R. G. Botzler, eds. *The animal ethics reader*. Routledge. [originally published as Minteer and Collins (2005), see above.]
- Collins, J.P. 2011. Foreword. pp. ix-x. **In:** S. Scheiner and M. Willig, eds. *The theory of ecology*. University of Chicago Press, Chicago.
- Collins, J.P. 2011. Changes in biology and biology’s evolving role in science education. pp. 25-31. **In:** S. Pettitt-Riley, ed. *Proceedings from a colloquium on “Research in Biology Education: Where do we go from here?”* Michigan State University Institute for Research on Mathematics and Science Education. As of November 3, 2011 available at: <http://irmse.msu.edu/2011/09/20/research-in-biology-education-where-do-we-go-from-here-april-28-29-2011/>.
- Minteer, B.A. and J.P. Collins. 2012. A practical ethics for ecologists and biodiversity managers. pp. 140-160. **In:** B.A. Minteer, ed. *Refounding environmental ethics. Pragmatism, principle, and practice*. Temple University Press, Philadelphia.
- Minteer, B.A. and J.P. Collins. 2014. *Ecosystems unbound: Ethical questions for an interventionist ecology*. pp. 456-469. **In:** R. Sandler, ed., *Ethics and Emerging Technologies*. Palgrave Macmillan, UK.
- Collins, J. P. 2018, in press. Gene drives in our future: Challenges of and opportunities for using a self-sustaining technology in pest and vector management. **In:** Gould, F., et al. *Environmental release of engineered pests: Building an international governance framework*. Proceedings of the OECD Cooperative Research Program Conference on Biological Resources in Agriculture.
- Editorials, Essays, Commentaries, and Letters**
- Holomuzki, J.R. and J.P. Collins. 1992. Role of larval tiger salamanders on the community dynamics of fishless ponds. Abstract reprinted in *Froglog* (Newsletter of the Declining Amphibian Populations Taskforce) 1992(3):4.
- Collins, J.P. 1997. The tigers of Arizona. *Bajada: National Biological Service, Cooperative Park Studies Unit, The University of Arizona* 5(3):5.
- Naiman, R.J. and J.P. Collins. 1998. Resolution of respect [an obituary]. Shelby G. (sic) Gerking 1918-1998. *Bull. Ecol. Soc. Amer.* 79:188.
- Collins, J.P., E. Davidson, and A. Storfer. 1999. Disease ecology and its role in shaping life history. Abstract reprinted in *Sonoran Herpetologist* 12:75-76.
- Collins, J.P., J. Deacon, T. Dowling, P. Marsh. 2002. Wendell Lee Minckley 1935 - 2001. [an obituary]. *Copeia* 2002 (1):258-262.
- Collins, J.P. 2003. Pathogens and amphibian declines. *Froglog* 2003(55):1-2.
- Pfirman, S.L., J.P. Collins, S. Lowes, and A.F. Michaels. 2005. Collaborative efforts: promoting interdisciplinary scholars. *The Chronicle of Higher Education*; Section, *The Chronicle Review* 51 (issue 23, February 11<sup>th</sup>):B15-B16. [The Project Kaleidoscope website has an expanded version of this article written for a focal audience of university administrators under the title “To thrive and prosper: Hiring, supporting, and tenuring interdisciplinary scholars” [http://www.pkal.org/documents/Pfirman\\_et-al\\_To-thrive-and-prosper.pdf](http://www.pkal.org/documents/Pfirman_et-al_To-thrive-and-prosper.pdf).]
- Collins, J.P. 2006. Transitioning the Declining Amphibian Populations Task Force. *FrogLog* 2006 (75): 1-3.

- Collins, J.P. 2007. 21<sup>st</sup> century physiology: Organisms as integrated systems. *The Physiologist*: 241, 245-246.
- Collins, J.P. 2011. Editorial: Science and engineering unlimited by borders. *BioScience* 61:3.
- Collins, J.P., C. Gascon, R.D. Moore, and J.P. Lewis. 2011. Editorial. *Froglog* 95:4. Available at: [http://www.amphibians.org/ASG/Publications\\_files/Froglog95.pdf](http://www.amphibians.org/ASG/Publications_files/Froglog95.pdf).
- Collins, J.P. 2011. Editorial. *FrogLog* 97:2. Available at: <http://issuu.com/amphibiansdotorg/docs/froglog97>.
- Collins, J.P. 2011. Editorial: A forum for integrating the life sciences. *BioScience* 61:935.
- Collins, J.P. 2012. ASLO 2012 Awards Citation: G. Evelyn Hutchinson Award to James J. Elser. *Limnology and Oceanography Bulletin* 21:60-61.
- Stafford, S., J.P. Collins, J. Travis. 2012. AIBS releases new strategic plan. *BioScience* 62: 859-861.
- Collins, J.P. 2015. Tempo of evolutionary change in ecological systems. Commentary on the special section: Concepts and Contexts of Adaptability and Plasticity in 20th-Century Plant Science. *Studies in History and Philosophy of Biological and Biomedical Sciences* 50:80-82.
- Kingsland, S. and J.P. Collins. 2015. Ecologists at the crossroads. *Bulletin of the Ecological Society of America* 96(4):688-692.
- Collins, J.P. 2016. How to develop this cutting-edge genetic research responsibly. Gene-drive technology is incredibly promising. But we need to proceed carefully. *Slate*, posted July 21, 2016: [http://www.slate.com/articles/technology/future\\_tense/2016/07/gene\\_drive\\_technology\\_is\\_promising\\_but\\_we\\_need\\_to\\_use\\_it\\_responsibly.html](http://www.slate.com/articles/technology/future_tense/2016/07/gene_drive_technology_is_promising_but_we_need_to_use_it_responsibly.html)
- Heitman, E., K. Sawyer, J.P. Collins. 2016. Guest Editorial. Gene drives on the horizon: issues for biosafety. *Applied Biosafety*: 21:173-176.

### **Book Reviews**

- Collins, J.P. 1989. Intraspecific variation and ecological processes. Review of: Adam Łomnicki. 1988. *Population Ecology of Individuals*. Monographs in population biology. Volume 25. Princeton University Press, Princeton, New Jersey: x + 223 pp. *Ecology* 70:1961-1962.
- Collins, J.P. 1999. Understanding how ecology got here. Review of: Stephen Bocking. 1997. *Ecologists and Environmental Politics: A History of Contemporary Ecology*. Yale University Press, New Haven, Connecticut: xiv + 271 pp. *Ecology* 80:1091-1092.
- Collins, J.P. 2001. Let the great world spin forever down the ringing grooves of change. Review of: John H. Lawton. 2000. *Community Ecology in a Changing World*. Excellence in Ecology 11. Ecology Institute, Oldendorf/Luhe, Germany. xxvii + 227 pp. *Ecology* 82: 908-909.
- Collins, J.P. 2001. Review of: Toby A. Appel. 2000. *Shaping Biology: The National Science Foundation and American Biological Research, 1945-1975*. Baltimore: The Johns Hopkins University Press, Baltimore: xii + 393 pp. *Journal of the History of Biology* 34:415-418.
- Collins, J.P. 2006. Studying nature's jigsaw puzzle. Review of: Ilkka Hanski. 2005. *The Shrinking World: Ecological Consequences of Habitat Loss*. Excellence in Ecology 14. Ecology Institute, Oldendorf/Luhe, Germany. xxvii + 307 pp. *Ecology* 87: 1867-1868.
- Collins, J.P. 2010. Sailing on an ocean of 0s and 1s. Review of: Tony Hey, Steward Tansley, and Kristin Tolle, eds. 2009. *The Fourth Paradigm: Data-Intensive Scientific Discovery*. Microsoft Research, Redmond, WA. 286 pp. paper; PDF at <http://research.microsoft.com/en-us/collaboration/fourthparadigm/>. *Science* 327:1455-1456.

### **Reports**

- Collins, J.P. 1982. Birds, reptiles, and amphibians of the Interior Chaparral, Battle Flat, Arizona. Final report, USDA Forest Service, Cooperative Agreement #16-863-CA:79 pp.

- Collins, J.P. and T.R. Jones. 1987. Report on the Sonora tiger salamander, *Ambystoma tigrinum stebbinsi* Lowe. Final report, Endangered Species Division, U.S. Fish and Wildlife Service, contract order #20181-0746-83:68 pp.
- Collins, J.P. 1988. Evolutionary relationships of *Ambystoma tigrinum stebbinsi* to other Southwestern *A. tigrinum* based on mitochondrial DNA. Final report, Nongame Species Division, Arizona Game and Fish Department:38 pp.
- Collins, J.P., D.H. Knight, I.C. Burke, R.G. Cates, C.B. Field, R.J. Frederick, A.J. Friedland, P.L. Meserve, M.A. Palmer, B.L. Peckarsky. 1992. Final report to the National Science Foundation, Division of Biotic Systems and Resources reviewing the Ecological Studies Cluster for FY 1990 - 1991:18 pp.
- Collins, J.P. 1994. A status survey of three species of endangered/sensitive amphibians in Arizona. Final report, Arizona Game and Fish Department Heritage Fund - IIPAM (Identification, Inventory, Acquisition, Protection and Management of Sensitive Habitat):21 pp.
- Maienschein, J., J. Collins, and D. Strouse. 1997. Biology and law: Challenges of adjudicating competing claims in a democracy. Final report prepared for the National Science Foundation, Division of Social, Behavioral, and Economic Research: 37 pp.
- Sowka, Patricia A., P.E. Brunkow, and J.P. Collins. 1997. Effects of stocking density and size variability on growth and survival of cage-cultured bonytail chub (*Gila elegans*). Final report, U.S. Fish and Wildlife Service, contract #2234-6-0100:31 pp.
- Collins, J.P. and J. Snyder. 1998. Endangered species management planning at Fort Huachuca: Managing the Huachuca Tiger Salamander (*Ambystoma tigrinum stebbinsi*) on Fort Huachuca. Final report, Department of the Army contract #DABT63-96-P-0966:39 pp.
- Ziemba, R.E., A.T. Storfer, J. Warren, and J.P. Collins. 1998. Genetic variation among populations of the Sonora tiger salamander (*Ambystoma tigrinum stebbinsi* Lowe). Final report, Arizona Game and Fish Department Heritage Fund - IIPAM (Identification, Inventory, Acquisition, Protection and Management of Sensitive Habitat):31 pp.
- Maret, T.J. and J.P. Collins. 1998. Effect of habitat alteration and introduced species on endangered/sensitive amphibian populations in Arizona. Final report, Arizona Game and Fish Department Heritage Fund - IIPAM (Identification, Inventory, Acquisition, Protection and Management of Sensitive Habitat):53 pp.
- Jancovich, J., E.W. Davidson and J.P. Collins. 1998. Development of tools for detection of the lethal virus of *Ambystoma tigrinum stebbinsi*. Final report, Declining Amphibian Populations Task Force:5 pp.
- Storfer, A., J.P. Collins, and J. Snyder. 1999. Molecular genetic status of tiger salamanders on the Fort Huachuca Military Reserve. Report in partial fulfillment, Department of the Army contract #DABT 63-99-P-0087.
- Krishtalka, L. and 11 co-authors including J.P. Collins. 1999. Final report to the National Science Foundation, Directorate for Biological Sciences reviewing the Division of Environmental Biology FY 1996 - 1998: 18 pp.
- Jancovich, J., E.W. Davidson and J.P. Collins. 2000. Model for the role of viruses in amphibian decline. Final report, National Geographic Society: 10 pp.
- Doelle, William and 16 co-authors, including J.P. Collins. 2000. Cultural resource program assessment. Final report for the Cultural Program of the Grand Canyon Monitoring and Research Center: 53 pp.
- McGinnis, W. and 6 co-authors including J.P. Collins. 2000. Final report to the National Science Foundation, Division of Integrative Biology and Neuroscience reviewing the Developmental Mechanisms Cluster for FY 1997 - 1999: 15 pp.
- Brunkow, P.E., J.P. Collins, and J.K. Jancovich. 2000. Effects of grazers on freshwater habitats: interaction between salamanders and terrestrial grazers. Final report, Arizona Game and

- Fish Department Heritage Fund - IIPAM (Identification, Inventory, Acquisition, Protection and Management of Sensitive Habitat):54 pp.
- Collins, J.P. and 14 co-authors 2001. Frontiers in population biology. Final report prepared for the National Science Foundation, Population Biology Program: 8 pp.
- Allison, T. and 10 co-authors, including J.P. Collins. 2002. Final report to the National Science Foundation, Division of Environmental Biology reviewing the Ecological Studies Cluster for FY 1999 - 2001:28 pp.
- Storfer, A., J.P. Collins, J. Snyder, S.G. Mech, M.W. Reidink, S.C. Maloney, and J. Ernst. 2002. Genetic evidence for hybridization among tiger salamanders on the Fort Huachuca Military Reserve. Final report prepared for Department of the Army contract #W61RSF-8310-N001: 19 pp.
- Collins, J.P., J. Snyder, and the Participation Team. 2002. Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*) recovery plan. U.S. Fish and Wildlife Service: 67 pp.
- Pfirman, S, and the AC-ERE (22 co-authors including J.P. Collins). 2003. Complex environmental systems. Synthesis for earth, life, and society in the 21<sup>st</sup> century. A report summarizing a 10-year outlook in environmental research and education for the National Science Foundation: 68 pp.
- Collins, J.P., V. Miera, E.W. Davidson, and R.W.R. Retallick. 2005. Host-pathogen community ecology in frogs. Arizona Game and Fish Department contract: 82 pp.
- Retallick, R.W.R., V. Miera, K.L. Richards, K.J. Field, and J.P. Collins. 2005. A non-lethal technique for detecting the chytrid fungus *Batrachochytrium dendrobatidis* on tadpoles. Arizona Game and Fish Department contract.
- Picco, A.M. and J.P. Collins. 2008. Amphibian disease and pathogen pollution. Arizona Game and Fish Department contract: 72 pp.
- Collins, J.P. and O.J. Hyman. 2012. Aquatic environment and the persistence of the frog killing fungus, *Batrachochytrium dendrobatidis*. Arizona Game and Fish Department contract: 103 pp.