CURRICULUM VITAE

Elizabeth Sherman

CONTACT:

E-mail: sherman@bennington.edu
Website: https://www.bennington.edu/academics/faculty/elizabeth-sherman
Cell phone: 802-681-5643

EDUCATION:

Ph.D., Zoology, High Distinction, University of Vermont, 1977

B.A., Biology, High Distinction, University of Rochester, 1972

PROFESSIONAL EMPLOYMENT:

Adjunct Professor of Biology, Community College of Vermont, Spring 2022

Professor of Biology, Prison Education Initiative, Great Meadow Correctional Facility, Comstock, NY, Fall, 2021

Professor of Biology *Emerita*, Bennington College 2020-present

Visiting Scientist, Department of Environment, Cayman Islands
Sabbatical leave 2010; summers & winters-present

Professor of Biology, Bennington College, 1978-2020

Scientist-in-residence, Long Trail School, private high school in Dorset, VT
Supported in part by grant from NSF (sabbatical, 1995-1996)

Curriculum Coordinator (Chair), Bennington College, Natural Science & Mathematics, 1984-1986; 1992-1994; 2003-2005

Postdoctoral Fellow, Cornell University, 1977-78
Neurobiology & Behavior

National Science Foundation Graduate Fellow, 1974-1977
Department of Zoology, University of Vermont

Graduate Teaching Fellow, University of Vermont, 1973-74
Department of Zoology

Graduate Teaching Assistant, Cornell University, 1972-73

Undergraduate Teaching Fellow, University of Rochester, 1971
Department of Biology

AWARDS/GRANTS/FELLOWSHIPS:

Accomplished Graduate Alumna Award. Career achievements in research and education. University of Vermont, 2021.

Math Science Partnerships Grant, Instructor. Grant awarded to Math and Science Partnership of the Southwest Vermont Curriculum Coordinators' Collaborative (SWVTCC), 2009-2014.

Problems in amphibian diversity: has pH served as a selective agent in the evolution of newts. Grant from American Wildlife Research Foundation, Inc. 2001

Developmental differences among newts (*Notophthalmus viridescens*) as a function of pond pH. Grant from American Wildlife Research Foundation, Inc. 2000

Integrating Science & Math in the Classroom V: Biodiversity: Organisms, Evolution, and Interdependence. Funded through National Science Foundation, Vermont Institute for Science, Math, & Technology. 1997

Scientist-in residence, grant to enable me to teach science in middle/ high school and collaborate with students and teachers. Supported by National Science Foundation, Vermont Institute for Science, Math, & Technology. 1995-1996

Intraspecific variation in osmoregulation among newt populations as a function of pond pH. National Science Foundation, VT.EPSCoR program. 1995-1996

Integrating Science & Math in the Classroom III- IV. Funded through National Science Foundation, Vermont Institute for Science, Math, & Technology. 1995-1996.

Integrating Science & Math in the Classroom I-II. Funded through Department of Education, Title II. 1993-1994

Grass Foundation Grant, 1992-1994

National Science Foundation Grant, 1988-1989
Vt. EPSCoR Program

Vermont Department of Education Title II Grant, 1986-1988
Principal Investigator, Southwest Vermont Supervisory Union,
Bennington, VT.

W.K. Kellogg National Leadership Fellowship, 1983-1986.

National Science Foundation Graduate Fellowship, 1974-1977
University of Vermont

Graduated with High Distinction in Biology, 1972
University of Rochester

Phi Beta Kappa Society, 1972
University of Rochester

Janet Howell Clark Prize for Science, 1972
University of Rochester

Chester A. Dewey Scholarship Prize for Biology, 1971
University of Rochester

COURSES TAUGHT:

Introductory Biology
Comparative Animal Physiology
Neurophysiology
Adaptation or Extinction: Animals and Climate Change
Environmental Physiology
Freshwater Biology and Chemistry
Animal Social Behavior
Human Evolution
Field Course in Coral Reef Biology (on Grand Cayman)
Diversity of Coral Reef Animals
Marine Biology
Anatomy and Physiology
Biology and Chemistry of Vermont Lakes, Ponds, and Streams
The Biology of the Sexes
Integrating Science & Math in the Classroom
Scale, Models and Simulations in Science & Mathematics
Numerous seminars on physiological and behavioral adaptations of animals
Human Nature(s)
Science and Anti-science in America
No Free Lunch: the Second Law of Thermodynamics
Human Biology

RESEARCH INTERESTS:

Diversity of coral reef animals
Environmental physiology of animals in freshwater and marine environments
Evolution and sociobiology

Science/math and citizenship
K-12 science education

PROFESSIONAL WORK IN K-12 SCHOOLS:

Math Science Partnerships Grant Instructor. Provide classes in content and inquiry to K-12 math science teachers. Math and Science Partnership of the Southwest Vermont Curriculum Coordinators' Collaborative (SWVTCC). 2009-2015.

Vermont Science Initiative. Provide classes in content and inquiry to K-12 math science teachers. Statewide grant, 2009-2011.

Consultant, elementary, middle, and high school science education, 1979- present. Emphasis on science content and inquiry approach to science. Experience includes science curriculum development and implementation, model teaching, in-service workshop presentation, writing of grant applications, assessment. Supported by grants from the W. K. Kellogg Foundation, the Vermont Department of Education, and the National Science Foundation.

Science, Math, & Technology Assessment Design Team, Vermont Institute for Science, Math & Technology. Sponsored by National Science Foundation, 1995

Consultant and instructor, Vermont Institute for Science, Math, and Technology. Sponsored by National Science Foundation, 1993-1998

Founder and Director, Bennington College Science Student Internship Program, 1981-1998. Bennington College science students work in elementary school classrooms teaching science during January and February.

ADDITIONAL PROFESSIONAL EXPERIENCE:

Founder and Director, Bennington College Coral Reef Project, 2004-present

Amphibian diversity of Merck Forest. Supported by Merck Forest. 1998-2003.

Accreditation visiting team member for NEASC, College of the Holy Cross, 2000

Accreditation visiting team member for NCA, Oberlin College, 1998

Accreditation visiting team member for NEASC, Connecticut College, 1997

Accreditation visiting team member for Vt. Dept. of Ed., Antioch New England, 1997

Northeast United States Working Group: Declining Amphibian Population Task Force, 1993-2000.

Accreditation visiting team member for NEASC, College of the Atlantic, 1992

Consultant, Commission on Institutions of Higher Education, New England Association of Schools & Colleges, 1990. Serving as consultant on revision of Standards of Accreditation, and Visiting Team Member.

Commissioner, Commission on Institutions of Higher Education, New England Association of Schools & Colleges, 1982-1989. One of 16 commissioners determining accreditation status of colleges and universities in New England.

Bennington College July Program, 1983-1988
Medical physiology program for gifted high school students

Founder and Director, Bennington College Post-baccalaureate Pre-medical & Allied Health Sciences Program, 1979-1998

Manuscript reviewer: Herpetologica, Comparative Biochemistry & Physiology, Copeia, Crustaceana, Evolutionary Biology, PLoS, Scientific Reports, Evolutionary Biology

PUBLICATIONS (*indicates student co-author):

Sherman, E. 2021. When you spot a spotted newt, listen to its lessons. LakeLine 41:10-13.

Sherman, E. 2020. Sea urchins, parrotfish and coral reefs in Grand Cayman, BWI: exemplar or outlier? BioRxiv 2020.12.11.421867; doi: https://doi.org/10.1101/2020.12.11.421867

Blackwood, J.C., C. Okasaki*, A. Archer*, E.W. Matt*, E. Sherman, and K. Montovan. 2018. Modeling alternative stable states in Caribbean coral reefs. Nat. Resour. Model. 2018;00:e12157. https://doi.org/10.1111/nrm.12157

Sherman, E. 2015. Can sea urchins beat the heat? Sea urchins, thermal tolerance and climate change. PeerJ 3:e1006; DOI 10.7717/peerj.1006

Sherman, E. and K. Van Munster*. 2012. Pond pH, acid tolerance and water preference in newts of Vermont. Northeastern Naturalist 19:111-122.

Sherman, E. 2009. Science and anti-science in America: why it matters. Skeptical Inquirer 33: 32-35.

Sherman, E., K. Tock*, and C. Clarke*. 2009. Fluctuating asymmetry in *Ichthyophonus*-sp. infected newts, *Notophthalmus viridescens,* from Vermont. Applied Herpetol. 6: 369-378.

Sherman, E. 2008. Thermal biology of newts (*Notophthalmus viridescens*) chronically infected with a naturally occurring pathogen. J. Therm. Biol. 33: 27-31.

Sherman, E. and D. Levitis*. 2003. Heat hardening as a function of developmental stage in larval and juvenile *Bufo americanus* and *Xenopus laevis*. J. Therm. Biol. 28: 373-380.

Sherman, E. and A. Stephens*. 1998. Fever and metabolic rate in the toad *Bufo marinus*. J. Therm. Biol. 23: 49-52.

Sherman, E., L. Baldwin*, G. Fernandez*, and E. Deurell*. 1991. Fever and thermal tolerance in the toad *Bufo marinus*. J. Therm. Biol. 16:297-301.

Sherman, E. and S. Stadlen*. 1986. The effect of dehydration on rehydration and metabolic rate in a lunged and lungless salamander. Comp. Biochem. Physiol. 85A: 483-487.

Sherman, E. and A. Eichrodt*. 1982. The effect of temperature on osmotic responses of the hermit crab *Pagurus longicarpus* Say. Comp. Biochem. Physiol. 73A: 261-265.

Sherman, E. 1980. Cardiovascular responses of the toad *Bufo marinus* to thermal stress and water deprivation. Comp. Biochem. Physiol. 66A: 643-650.

Sherman, E. 1980. Ontogenetic change in thermal tolerance of the toad *Bufo woodhousii fowleri*. Comp. Biochem. Physiol. 65A: 227-230.

Sherman, E. 1977. A cardiovascular mechanism maintaining skin hydration in the toad *Bufo marinus*. Am. Zool. 17: 903.

Sherman, E. M. Novotny, and J. M. Camhi. 1977. A modified walking rhythm employed during righting behavior in the cockroach *Gromphadorhina portentosa*. J. Comp. Physiol. 113: 303-316.

Sherman, E. 1976. Effects of thermal and water stress on heart rate in Bufo americanus and B. marinus. Herp. Rev. 7:93.

SELECTED PRESENTATIONS:

In celebration of serendipity. UVM Biology Graduation, May 2021.

Herbivory and coral reef health: do sea urchins upend the parrotfish paradigm? University of Vermont, February, 2019.

Coral reefs and climate change. Green Mountain Academy for Lifelong Learning, VT. February, 2018.

Next Generation Science Standards: what's the big idea? Keynote speech, Chittenden South Supervisory Union, VT. August, 2014.

What is natural? Merck Forest and Farmland, VT., June 2013.

Doing science in school. Keynote address, Rutland (VT) Southwest Supervisory Union. August 2012.

Why Evolution Matters. Green Mountain Academy for Lifelong Learning, Manchester, VT. August 2012.

Science and anti-science in America. Osher Lifelong Learning Institute, University of Vermont, Rutland, VT, May 2011.

What's love got to do with it: the biology of human mate choice. Northshire Bookstore, Manchester, VT, March 2011.

What's the big idea: using technology in the K-12 science classroom. Keynote address, Math Science Partnership Summit, Rutland, VT, October, 2010

Doing science on planet earth. Keynote address, Science Summit, Manchester Elementary and Middle School, Manchester, VT, January 2010

What are the chances: a celebration of earth's atoms. Merck Forest and Farmland, VT., June 2009.

Why Darwin matters. Northshire Bookstore, Manchester, VT., March 2009.

Fear of flying: why science matters. Convocation address, Bennington College, Bennington, VT. Sept. 2, 2008.

A life of reading. Keynote address, School Year Opening, Bennington-Rutland Supervisory Union School Teachers, August, 2008.

Science and anti-science in America: belief and knowing. Keynote address: plenary session, 31st Annual Conference of the New England Association of Environmental Biologists. Mount Snow, VT, March 15, 2007.

Physiological differences among newts from ponds of different pH, (with student K. Stoop). Joint Meeting of Ichthyologists and Herpetologists.
New Orleans, July, 2006.

The practice of science and art. Art, Artists, & Teaching, J. Paul Getty Trust & Bennington College, Bennington, VT, June 2002.

Has pH served as an agent of natural selection in the evolution of newts? Northeast Natural History Conference VII,
New York State Museum, Albany, NY, April, 2002.

Adaptations of newts to ponds of different pH. Johnson State College, Current Topics in Biology Series, April, 2002.

What's so hot about fever anyway? fever as adaptation. Colorado College, Department of Biology Seminar, Colorado Springs, January, 1999.

The enterprise of science. Keynote address, Vermont Institute for Science, Math & Technology, Summer Institute, sponsored by National Science Foundation, July, 1995.

Animal life of ponds. Bennington County Conservation District. August, 1994.

The biology of sex. Burr & Burton Academy, Biology Seminar Series. Manchester, VT. June, 1994.

Barbie doll biology: can Barbie do math? Presented to the Vermont Institute of Science, Math, and Technology. Sponsored by the National Science Foundation. Colchester, VT. October, 1993.

The biology of gender. Sponsored by the Women's Issues Study Group, Bennington College, VT. October, 1992.

The contingent nature of scientific knowledge. The Freedom Forum,
Media Studies Center, Science and the Media, Columbia University, NY. March, 1992.

Scaling the heights with dinosaurs. The importance of scale in science.
Annual meeting of the National Science Teachers Association, Boston, March, 1992.

Some like it hot! A predictive model of the Law of Conservation of Energy. Vermont Blueprints for Change II, May 1991.