

Jacqueline Grant, Ph.D.

Assistant Professor of Biology

Director, Garth and Jerri Frehner
Museum of Natural History

A. Education

B. Professional Experience



Jacqueline Grant

Southern Utah University
351 W. University Blvd.
Cedar City, UT 84720

435-865-8549
jacqualinegrant@suu.edu

Cornell University / Ph.D.

AUGUST 1997 - JANUARY 2004, ITHACA, NY 14850

Neurobiology and Behavior (Chemical Ecology, Population Genetics, Behavior)

Cornell University / M.S.

AUGUST 1995 - AUGUST 1997, ITHACA, NY 14850

Animal Science (Nutritional Toxicology)

Texas A&M University / B.S.

AUGUST 1986 - AUGUST 1990, COLLEGE STATION, TX 77840

Biochemistry

Southern Utah University / Assistant Professor of Biology, Department of Biology

351 W. University Blvd.

AUGUST 2012 - PRESENT, CEDAR CITY, UT 84720

Southern Utah University / Director, Garth and Jerri Frehner Museum of Natural History, College of Science and Engineering

JANUARY 2012 - PRESENT, CEDAR CITY, UT

Southern Utah University / Adjunct Professor of Biology, Department of Biology

AUGUST 2011 - MAY 2012, CEDAR CITY, UT

The Pennsylvania State University / Senior Lecturer of Wildlife and Fisheries Science, School of Forest Resources (now Department of Ecosystem Science and Management)

AUGUST 2008 - AUGUST 2011, STATE COLLEGE, PA

The Pennsylvania State University / Graduate Faculty

AUGUST 2008 - AUGUST 2011, STATE COLLEGE, PA

**B. Professional
Experience**
continued

Michigan Technological University /Assistant Professor, School
of Forest Resources and Environmental Science
AUGUST 2006 - AUGUST 2008, HOUGHTON, MI

Michigan Technological University /Graduate Faculty
AUGUST 2006 - AUGUST 2010, HOUGHTON, MI

Colorado State University /David H. Smith Conservation
Research Fellow, Natural Resource Ecology Laboratory
AUGUST 2004 - AUGUST 2006, FORT COLLINS, CO

**C. Pertinent
Teaching Experience**

Courses taught at Southern Utah University:

BIOL 2500 Environmental Biology / Southern Utah University
FALL 2014, General Education

Course investigates diverse ecosystems found in southern Utah. Ecosystems will be used to learn about cycling of matter/energy, patterns, scale, proportion, the link between structure/function, cause/effect, and evidence of stability and change. Students will gather data about ecosystems, describe possible problems, the causation and possible solutions. Recommended for Education Majors K-12 A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

BIOL 2500 Environmental Biology: Semester in the Parks /
Southern Utah University
FALL 2016, General Education

This course was a special offering of Environmental Biology set in Bryce Canyon National Park. The focus of the semester was on biodiversity of the national parks in southern Utah, Nevada, and Arizona, with an emphasis on sustainability.

BIOL 3060 Genetics / Southern Utah University
SPRING 2015, FALL 2015 & 2016, Service Learning Integration

Transmission and expression of genetic information, organisms, and populations. Topics include basic transmission and molecular genetics, regulation of gene expression, developmental genetics, genetics of cancer, the immune response and behavior, and population genetics and evolution. Three hours of lecture per week. A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

**C. Pertinent
Teaching Experience
*continued***

BIOL 3065 Genetics Laboratory / Southern Utah University

SPRING 2015, FALL 2015 & 2016

Lab to accompany BIOL 3060 Genetics. One three-hour meeting per week. A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

BIOL 3390 Mammalogy/ Southern Utah University

FALL 2013 & 2015, Service Learning Integration

Structure, classification, life histories and distribution of mammals; introduction to methods of field investigation. Three hours of lecture per week. A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

BIOL 3395 Mammalogy Laboratory / Southern Utah University

FALL 2013 & 2015, Service Learning Integration

Lab to accompany BIOL 3390 Mammalogy. One three-hour meeting per week. Longer field trips may be scheduled. A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

BIOL 3450 Comparative Vertebrate Studies/ Southern Utah University

SPRING 2015

Evolutionary comparison of the development, structure, and behavior of vertebrates. Three hours lecture per week. A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

BIOL 3455 Comparative Vertebrate Studies Laboratory / Southern Utah University

SPRING 2015

Lab to accompany BIOL 3450 Comparative Vertebrate Studies. One three-hour meeting per week. A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

**C. Pertinent
Teaching Experience**
continued

**BIOL 4650 Capstone: Conservation Biology / Southern Utah
University**

SPRING 2013 & 2016, Service Learning Designated Course

Principles and concepts of conservation biology with emphasis on management of biodiversity (including genetic diversity), ecosystems, and populations and on socio-economic and political factors related to conservation. Course requirements include a service learning project. Three hours lecture per week. A minimum grade of "C" (2.0 or above) must be earned in this course before it can be counted in a biological science major or minor or as a prerequisite for any other biology course.

I have also taught mammalogy, wildlife and fisheries measurements, conservation biology, and vertebrate laboratory at Penn State, and herpetology, wildlife habitat, and wildlife ecology at Michigan Tech University.

I have a wide range of teaching experiences that includes courses such as human physiology and general biology to professional development courses for K-12 educators.

D. Teaching Awards

2016 - Southern Utah University Achievement in Experiential Learning Award

2015 - Utah Campus Compact Service Learning Award

2012 - Southern Utah University Service Learning Award

2011 - Penn State University, School of Forest Resources, Outstanding Wildlife and Fisheries Science Professor Award

My teaching has been featured in the local and national news and in promotional videos at Southern Utah University.

Local news coverage:

SUU museums partner for unique education experiences

<http://www.thespectrum.com/story/news/local/cedar-city/2015/11/06/suu-museums-partner-unique-education-experiences/75339422/>

National news coverage:

Science Pups learn more from SUU Biology students

<http://college.usatoday.com/2015/09/28/science-pups-learn-more-from-southern-utah-u-biology-students/>.

SUU video:

Why Choose SUU?

<https://www.facebook.com/SUUTBirds/videos/10153733671773423/>

E. Publications

*indicates undergraduate student coauthor

**Indicates graduate student coauthor

- Grant, JB** and D Patterson*. **2016**. Innovative arts programs require innovative partnerships: A case study of STEAM partnering between an art gallery and a natural history museum. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas. Special Issue, Drawing from Within*. 89: 144-152. doi.org/10.1080/00098655.2016.1170453
- Weeg, MS and **JB Grant**. **2016**. A reliable, non-invasive technique for measuring growth in tadpoles exposed to salt. *Environmental Toxicology and Pharmacology*. 45:95-97. doi.org/10.1016/j.etap.2016.05.018
- RL Hale, A Armstrong, MA Baker, S Bedingfield, D Betts, C Buahin, M Buchert, T Crowl, RR Dupont, JR Ehleringer, J Endter-Wada, C Flint, **J Grant**, S Hinners, JS Horsburgh, D Jackson-Smith, AS Jones, C Licon, SE Null, A Odame, DE Pataki, D Rosenberg, M Runburg, P Stoker and C Strong. **2015**. iSAW: Integrating Structure, Actors, and Water to Study Socio-Hydro-Ecological Systems. *Earth's Future*. 3:111-132. DOI: 10.1002/2014EF000295.
- Hoverman, JT, Z Olson, S LaGrange, **J Grant**, and RN Williams. **2014**. A guide to larval amphibian identification in the field and laboratory. Purdue University Cooperative Extension Service, West Lafayette, IN. FNR-496-W.
- **Jensen, NR, CR Webster, JC Witt, and **JB Grant**. **2011**. Ungulate winter habitat selection as a driver of herbaceous-layer heterogeneity in northern temperate forests. *Ecosphere* 2(6):1-16. doi:10.1890/ES10-00189.1.
- **Harless, ML, CJ Huckins, **JB Grant**, and TG Pypker. Effects of six chemical deicers on larval wood frogs (*Rana sylvatica*). **2011**. *Environmental Toxicology and Chemistry* 30(7): 1637-1641. doi: 10.1002/etc.544.
- Jim C. Manolis, KM Chan, ME Finkelstein, S Stephens, CR Nelson, **JB Grant**, and MP Dombeck. **2009**. Leadership: A new frontier in conservation science. *Conservation Biology*. 23(4):879-886 DOI: 10.1111/j.1523-1739.2008.01150.x
- Schroeder, FC, AE Taggi, M Gronquist, RU Malik, **JB Grant**, T Eisner, and J Meinwald. **2008**. NMR-spectroscopic screening of spider venom reveals sulfated nucleosides as major components for the brown recluse and related species. *Proceedings of the National Academy of Sciences USA* 105(38):14283-14287.
- Eisner, T, FC Schroeder, N Snyder, **JB Grant**, DJ Aneshansley, D Utterback, J Meinwald, and M Eisner. **2008**. Defensive chemistry of lycid beetles and of mimetic cerambycid beetles that feed on them. *Chemoecology* doi:10.1007/s00049-007-0398-4.
- Grant, JB** JJ Lawler, CR Nelson, JD Olden, and B Silliman. **2007**. Academic institutions in the United States and Canada ranked according to

E. Publications

continued

performance in the field of Conservation Biology. *Conservation Biology* **21**(5):1139-1144
(doi:10.1111/j.1523-1739.2007.00762.x).

Grant, JB and JA Evans*. 2007. A technique to collect and assay adhesive-free skin secretions from ambystomatid salamanders. *Herpetological Review* **38**(3):301-305.

Grant, JB. 2007. Ontogenetic colour change and the evolution of aposematism: a case study in panic moth caterpillars. *Journal of Animal Ecology* **76**(3):439-447. (doi: 10.1111/j.1365-2656.2007.01216.x).

Lawler, JJ, JE Aukema, **JB Grant**, B Halpern, P Kareiva, CR Nelson, K Ohleth, JD Olden, MA Schlaepfer, B Silliman, and P Zaradic. 2006. Conservation Science: A 20-Year Report Card. *Frontiers in Ecology and the Environment* **4**(9):473-480.

Schroeder, FC, ML del Campo, **JB Grant**, DB Weibel, SR Smedley, KL Bolton, J Meinwald, and T Eisner. 2006. Pinoresinol: a lignol of plant origin serving for defense in a caterpillar. *Proceedings of the National Academy of Sciences USA*: **103**(42):15497-15501 (doi:10.1073/pnas.0605921103).

Grant, JB. 2006. Diversification of gut morphology in caterpillars is associated with defensive behavior. *Journal of Experimental Biology* **209**(15):3018-3024 (doi:10.1242/jeb.02335).

Grant, JB and S Bogdanowicz. 2006. Isolation and characterization of microsatellite markers from the panic moth, *Saucrobotys futilalis* L. (Lepidoptera: Pyralidae: Pyraustinae). *Molecular Ecology Notes* **6**(2):353-355 (doi:10.1111/j.1471-8286.2005.01229.x).

Grant, JB, DL Brown, and ES Dierenfeld. 2002. Essential fatty acid profiles differ across diets and browse of black rhinoceros. *Journal of Wildlife Diseases*. **38**(1):132-142.

Grant, JB and BR Land. 2002. Transcutaneous Amphibian Stimulator (TAS): A device for the collection of amphibian skin secretions. *Herpetological Review* **33**:38-41.

Grant, JB. 2001. *Rana palustris*. Production of odor. *Herpetological Review* **32**:183.

Grant, JB (as Wright, JB) and DL Brown. 1997. Identification of 18:3(n-3) linolenic acid, 18:3(n-6) linolenic acid and 18:2(n-6) linoleic acid in Zimbabwean browses preferred by wild black rhinoceroses (*Diceros bicornis*) determined by GC-MS analysis. *Animal Feed Science and Technology* **69**(1-3):195-199.

F. Service

2016

Cedar City BioBlitz Chair

SUU News coverage of outreach activities:

Conservation Celebration

<http://www.suunews.com/news/2016/sep/01/conservation-celebration/>

2015 - present

Society for Conservation Biology

- Vice President for Education and Outreach 2015-2017
- North American section, Education Committee Co-Chair 2015-2017
- International Congress for Conservation Biology Education and Student Affairs Committee Chair 2016-2017

2014 - present

SUU Mountain Center Advisory Board

2013 - present

SUU Department of Biology Curriculum Committee Chair

G. Scientific Illustration

Yahner, R 2012. Wildlife Behavior and Conservation. Springer. **Cover and 40 illustrations by JB Grant.**

Arnegard M and M. Oliver. 2010. A new genus for *Melanochromis labrosus*, a problematic Lake Malaŵi cichlid with hypertrophied lips (Teleostei: Cichlidae). *Ichthyological Exploration of Freshwaters* **Habitus illustrated by JB Grant**

Sarver, MJ, A Treher, L Wilson, R Naczi, and FB Kuehn. 2008. Mistaken Identity? Invasive Plants and their Native Look-alikes: an Identification Guide for the Mid-Atlantic. Dover, DE: Delaware Department of Agriculture and USDA Natural Resources Conservation Service. **Illustrations by JB Grant.**
http://www.nybg.org/files/scientists/rnaczi/Mistaken_Identity_Final.pdf

Gibbs J, AR Breisch, PK Ducey, G Johnson, JL Behler, RC Bothner. 2007. The amphibians and reptiles of New York State: Identification, natural history and conservation. Oxford University Press. **Sea turtles illustrated by JB Grant.**

Gregoire, DR. 2005. Tadpoles of the Southeastern United States Coastal Plain. United States Geological Survey Report. Florida Integrated Science Center. 60 pp. **Tadpole mouthparts illustrated by JB Grant.**
http://cars.er.usgs.gov/armi/Guide_to_Tadpoles/SEARMITadpoleGuide.pdf

Stegemann E, A Breisch, **JB Grant**, and F. Herec. 2005. Sea Turtles of New York. *The New York State Conservationist*.
http://www.dec.ny.gov/docs/administration_pdf/seaturtles1.pdf,
http://www.dec.ny.gov/docs/administration_pdf/seaturtles2.pdf, and
http://www.dec.ny.gov/docs/administration_pdf/seaturtles.pdf

Pilz KM and HG Smiths. 2004. Egg yolk androgen levels increase with breeding density in the European Starling, *Sturnus vulgaris*. *Functional Ecology*, 18: 58-66. **Map illustrated by JB Grant.**

Dodd CK, Illustrated by **JB Grant**. 2004. Field Guide to the Reptiles and Amphibians of Tennessee. University of Tennessee Press.

Bloch Qazi MC, Y Heifetz, and MF Wolfner. 2003. The developments between gametogenesis and fertilization: ovulation and female sperm storage in *Drosophila melanogaster*. *Developmental Biology*

G. Scientific Illustration *continued*

256:195-211. *Anatomy of female D. melanogaster tract illustrated by JB Grant.*

Dodd CK. 2003. Monitoring Amphibian Populations of the Great Smoky Mountains. USGS. *Larval forms illustrated by JB Grant.*
 <http://water.usgs.gov/pubs/circ/2003/circ1258/pdf/c1258_dodd_Plates_Larvae-Tadpoles.pdf>

Arnegard M and J Snoeks. 2001. New three-spotted cichlid species with hypertrophied lips (Teleostei: Cichlidae) from the deep waters of Lake Malaŵi/Nyasa, Africa. *Copeia* 2001:705-717. *Holotype illustrated by JB Grant.*

H. Funding - External Awards

Grants awarded for research and educational outreach programs

2016 iUTAH EPSCoR Research Catalyst Grant Faculty Release Program. \$5,000

2016 Utah Division of Arts and Museums Technical Collections Assistance Grant. \$4,000

2015 NSF iUTAH EPSCoR Research Catalyst Grant: Enhancing biodiversity, water conservation, and urban agriculture through green roof infrastructure. \$15,807

2014 NSF iUTAH EPSCoR EOD Catalyst Grant: Green roof agriculture exhibit and outreach at the Frehner Museum. \$8,223.51

2014 Society for the Study of Evolution \$500

2013 NSF iUTAH EPSCoR EOD Catalyst Grant: Water cycle dynamics at the SUU green roof. \$12,344

2010 - Wild Resource Conservation Program, The Department of Conservation and Natural Resources, Pennsylvania: Identification of amphibian species most at risk from climate change. \$30,000

2007 - USDA McIntire-Stennis: How connected are forest landscapes? Measurement of functional connectivity with a novel combination of GIS-based models and genetic data from boreal chorus frogs. \$7,000

2004 - The Nature Conservancy/Cedar Tree Foundation: Functional landscape connectivity. \$119,385.

Total external funding awarded in last 12 years: \$202,259

SUU News coverage of research:

Green is the new black

<http://www.suunews.com/news/2016/sep/15/green-new-black/>

I. Funding - Internal Awards

Grants awarded to support conference presentations, travel to workshops and training events, and educational outreach

I. Funding - Internal Awards continued

2016 - FSSF - supported travel to present research results at the North American Congress for Conservation Biology in Madison, Wisconsin. \$1,173

2016 - FSSF - supported travel to present research results at the Conservation Asia meeting in Singapore. \$1,118

2015 - Utah State Legislative STEM Award \$26,598

2015 - FSSF - supported travel to attend the International Congress for Conservation Biology in Montpellier, France. \$804

2015 - FSSF - supported travel to present research results at the North American Congress for Conservation Biology in Missoula, Montana. \$1,349

- 2014 - FSSF - supported travel to attend the Seventh Annual Fossil Preparation and Collections Symposium at the Natural History Museum of Utah in Salt Lake City, Utah. \$700
- 2014 - SUU Outdoor Initiative Grant. \$500.
- 2013 - SUU Biology Equipment Grant from President Wyatt's office. \$23,894.13
- 2013 - SUU Outdoor Initiative Grant. \$500.
- 2012 - SUU Outdoor Initiative Grant. \$500.

Total internal funding awarded to me at SUU: \$57,136

J.Funding - Internal Awards to Student Mentees

Grants awarded to support independent student research projects

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- 2016 Walter Maxwell Gibson Research Fellowship. Joshua Matt and Jacqualine Grant. Microbial biofilms in aquaponics project. \$1,600
 - 2016 Walter Maxwell Gibson Research Fellowship. Andrew Carlson and Jacqualine Grant. Differential crop growth in aquaponic systems project. \$1,100
 - 2015 Skaggs Research Fellowship. Damaris Perez and Jacqualine Grant. Shrew monitoring project. \$2499.48
 - 2015 Walter Maxwell Gibson Research Fellowship. Damaris Perez and Jacqualine Grant. Noninvasive carnivore survey project. \$3,000
 - 2015 UGRASP. Andrew Carlson. Aquaponics Project. \$500
 - 2015 Career & Professional Development Para-professional Internship Grant, Museum Assistant.
 - 2014 UGRASP. Deb Cruz. Gyotaku Project. \$500
 - 2014 UGRASP. Andrew Carlson. Fungi Project. \$500
 - 2014 Career & Professional Development Para-professional Internship Grant, Museum Assistant.
 - 2013 UGRASP. Wesley Selby and Tyson Barrow. Dermestarium Project. \$500
 - 2013 Walter Maxwell Gibson Research Fellowship. Justin Wilkins and Jacqualine Grant. Forensically important insect app project. \$3,124
 - 2013 Skaggs Research Fellowship. Moriah Guy and Jacqualine Grant. Forensically important insect diversity project. \$907.40
 - 2012 Walter Maxwell Gibson Research Fellowship. Moriah Guy and Jacqualine Grant. Forensically important insect diversity project. \$4,316.70
 - 2012 UGRASP. Delaney Patterson. Gyotaku of Utah's Native Fish Project. \$600

Total internal funding awarded to my students at SUU: \$19,230