

CURRICULUM VITAE  
of  
**CARMEN MICHELLE SALSBURY**

Department of Biology  
Butler University  
Indianapolis, Indiana 46208  
317-940-9879  
csalsbur@butler.edu

**Academic Appointments:**

Butler University, Indianapolis, IN  
Head of the Department of Biological Sciences, 2007 – present.  
Associate Professor of Biological Sciences, 2004 – present.  
Assistant Professor of Biological Sciences, 2001 – 2004.

Albright College, Reading, PA  
Assistant Professor of Biology, 1996 – 2001.

**Education:**

Trinity University, San Antonio, Texas.  
B. S. in Biology, Summa Cum Laude, 1987.

University of Kansas, Lawrence, Kansas.  
Ph.D. Systematics and Ecology, 1993.  
Dissertation: "Reproductive Energetics of Adult Male Yellow-bellied Marmots."  
Major advisor: Kenneth B. Armitage.

Michigan State University, East Lansing, Michigan.  
Postdoctoral Research Associate, Department of Zoology, 1994-1996.

**Honors and Awards:**

Outstanding Faculty Member, College of Liberal Arts and Sciences, Butler University, 2007.  
Nominated for Outstanding Faculty Award, Albright College, 2000 & 2001.  
Who's Who Among America's Teachers, nominated by Albright College and Butler University  
students, 1997 – 1999, 2003 – 2004, 2007 – 2009.  
Most Valuable Faculty Member, chosen by The Lion Diplomats, Albright College, 1998.  
Sigma Xi, 1993.  
Outstanding Senior Biology Student, Trinity University, 1987.  
Phi Beta Kappa, 1986.  
Mortar Board Honor Society, 1986.  
Blue Key Honor Society, 1985.  
Alpha Chi Honor Society, 1985.  
Sigma Mu Epsilon Science Honor Society, 1985.  
Alpha Lambda Delta Honor Society, 1984.

**Scholarships, Fellowships, and Research Grants:**

National Science Foundation – STEP Grant, Co-PI. \$498,450, 2007, resubmitted 2008, not  
funded.

Howard Hughes Medical Institute – Undergraduate Science Education Grant, Co-PI. \$1,400,000,  
2007, not funded.

Nina Mason Pulliam Trust, Co-PI. Grant to fund development of the Center for Urban Ecology at Butler, \$100,000, 2007, funded.

Proposal to individual donor to establish a partnership between Biology at Butler University and The Smithsonian Tropical Research Institute, Panama, Co-PI, \$ 125,000, 2007, funded.

Indiana Academy of Sciences Research Grant. PI. \$1200, 2007, funded.

Holcomb Awards Committee Research Grant, PI. \$12,415, 2004, funded.

Holcomb Awards Committee Faculty Fellowship, Butler University. Award range ~\$2153 - 5000, 2002 - 2009, funded.

Johnson Grant for Interdisciplinary Studies, Albright College, 1999.

Faculty Development Grant, Albright College, 1998 - 2000.

Collaborative Undergraduate Research Grant, Albright College, 1998.

American Museum of Natural History: Theodore Roosevelt Grant, 1990 and 1991.

Sigma Xi Grant-In-Aid of Research, 1991.

University of Kansas Dissertation Research Travel Funds, 1991.

Graduate Student Summer Fellowship, University of Kansas, 1990.

Trinity Women's Club Scholarship, Trinity University, 1985-1987.

Rocky Mountain Biological Laboratory Student Scholarship, 1985.

Presidential Scholarship, Trinity University, 1983-1987.

### **Research Experience:**

Principle investigator in collaboration with students. Population demographics and genetic diversity of fox (*Sciurus niger*) and gray (*S. carolinensis*) squirrels living within an urban landscape. Marion County, Indiana, 2001 - present.

Principal investigator in collaboration with students. Investigation of the vocal behavior of fox squirrels (*Sciurus niger*). Marion County, Indiana, 2001 - 2005.

Principal investigator in collaboration with Dr. Rebecca Dolan and students. A study of the distribution of fox squirrel leaf nests within fragmented forests in Central Indiana. Marion County, Indiana, 2003.

Investigator in collaboration with Dr. Travis Ryan and students. Investigation of the spatial ecology of the map turtle (*Graptemys geographica*) in an urban landscape. Marion County, Indiana, 2002 – 2003.

Principal investigator in collaboration with students. Comparative study of the population dynamics of roadside and rural populations of the woodchuck (*Marmota monax*). Berks County, Pennsylvania, 1997- 1999.

Co-principal investigator in collaboration with Dr. Kenneth B. Armitage (University of Kansas) and Dr. Stam Zervanos (Pennsylvania State University - Berks Campus). Investigation of the physiology of hibernation for captive and free-ranging woodchucks. Berks County, Pennsylvania, 1998 - 2008.

Principle investigator in collaboration with students. Investigation of the vocal communication of the Eastern gray squirrel (*Sciurus carolinensis*). Berks County, Pennsylvania, 1998 - 2000.

Postdoctoral Research Associate in the laboratory of Dr. Kay E. Holekamp. Investigation of the proximal mechanisms of dispersal in mammals using the Nile grass rat (*Arvicanthis niloticus*) as a model species. Michigan State University, Fall 1994 - 1996, Summer 1997.

Research Assistant for Dr. Kenneth B. Armitage, University of Kansas. Computer assisted data analysis for a long-term study of the behavioral ecology of yellow-bellied marmots. 1990-1994.

Principal investigator. Field research addressing the energetics of female defense behavior in adult, male yellow-bellied marmots. Rocky Mountain Biological Laboratory, Gothic, Colorado, 1989-1991.

Field and Laboratory Technician for Dr. Kenneth B. Armitage. Live-trapping and handling of marmots and various laboratory techniques associated with a study of the behavioral ecology of yellow-bellied marmots. Rocky Mountain Biological Laboratory, 1988-1992.

Independent Student Researcher under advisement of Dr. Paul Robertson. Analysis of body size and weight data of leaf-eared mice (genus *Phyllotis*). Trinity University, 1986-1987.

Independent Study Student. Field investigation of optimal foraging behavior of *Bombus* spp. on larkspur. Rocky Mountain Biological Laboratory, 1985.

### Teaching Experience:

*(Teaching portfolio available upon request for a more detailed description of teaching experience and student evaluations.)*

#### Butler University

Principles of Biology I,  
Biological Investigations I  
Principles of Biology II  
Biological Investigations II  
Principles of Zoology  
Tropical Field Biology  
Mammalogy  
Topics in Biology – Biostatistics  
Evolution  
Biology Capstone – Behavioral Ecology

#### Albright College

Behavioral Ecology Seminar  
Environment and Society  
Environmental Biology Seminar  
Ecology  
Introduction to Marine Ecology  
Evolution  
General Biology II & III  
Mammalogy Seminar

#### Experience as Post-Doc and Graduate student

Behavioral Mechanisms in Evolutionary Ecology  
Vertebrate Zoology  
Environmental Science  
Principles of Biology

### Invited Lectures:

2006. "Biology and Belief" series. Panel participant. Butler University, Indianapolis, IN

- 2006. Indiana College Biology Teachers Association, IU-Kokomo, IN
- 2006. Liberal Arts Symposium, Butler University, Indianapolis, IN
- 2005. Marian College, Indianapolis, IN
- 2005. Butler University, College of Liberal Arts and Sciences, Indianapolis, IN
- 2001. Butler University, Department of Biological Sciences, Indianapolis, IN
- 2001. Moravian College, Bethlehem, PA
- 2000. Moravian College, Bethlehem, PA
- 2000. Wyomissing High School, Wyomissing, PA
- 1999. Mengel Natural History Society, Reading, PA
- 1996. Albright College, Department of Biology, Reading, PA
- 1996. Michigan State University, Lyman Briggs School, East Lansing, MI
- 1996. University of the South, Department of Biology, Sewanee, TN
- 1994. Michigan State University, Ecology and Evolutionary Biology Program. East Lansing, MI.
- 1993. University of California, Animal Behavior Program. Davis, CA.
- 1993. Haskell Indian Nations University, Department of Biology. Lawrence, KS.
- 1992. Rocky Mountain Biological Laboratory. Gothic, CO.

**Paper/Poster Presentations:**

- 2008. "Distribution of Eastern fox squirrel (*Sciurus niger*) leaf nests within a suburban/urban landscape." Poster presented at the Annual Meeting of the American Society of Mammalogists.
- 2006. "Fox squirrel (*Sciurus niger*) leaf nests within woodlots across an urban landscape." Paper presented at the Indiana Academy of Science Annual Meeting.
- 2005. "Distribution of fox squirrel, *Sciurus niger*, leaf nests within forest fragments of an urban landscape." Poster presented at the American Society of Mammalogists Meeting.
- 2002. "Variation in growth rates of yellow-bellied marmots." Paper presented at the Fourth International Conference of the Genus *Marmota* in Montreux, Switzerland. Paper in collaboration with Dr. Kenneth B. Armitage.
- 2001. "Sex differences in hibernation patterns of free-ranging eastern woodchucks, *Marmota monax*. Paper presented at American Society of Mammalogists Annual Meeting in collaboration with Dr. Stam Zervanos
- 2001. "Summer estivation in free-ranging woodchucks (*Marmota monax*) under environmental stress." Co-author of paper presented by Dr. Stam Zervanos at American Society of Mammalogists Annual Meeting.
- 2000. "Continuous body temperature monitoring of free-ranging woodchucks (*Marmota monax*)." Paper presented at American Society of Mammalogists Annual Meeting in collaboration with Dr. Stam Zervanos.
- 1999. "Continuous monitoring of temperature, location and activity of free-ranging animals." Poster presented at the Animal Behavior Society Annual Meeting in collaboration with Dr. Stam Zervanos.
- 1996. "Female choice as a proximate mechanism of inbreeding avoidance in the Nile grass rat, *Arvicanthis niloticus*." Poster presentation at the Midwest Ecology and Evolution Conference.
- 1996. "Patterns of growth, reproductive development, and hormone release in the Nile grass-

- rat, *Arvicanthis niloticus*." Poster presented at Michigan State University Research Day.
1994. "The effect of molt on oxygen consumption of *Marmota flaviventris*." Poster presented at Michigan State University Research Day.
1992. "Home-range size and site fidelity of male yellow-bellied marmots." Paper presented at American Society of Mammalogists Annual Meeting.
1992. "Home-range size and site fidelity of male yellow-bellied marmots." Paper presented at Systematics and Ecology Graduate Student Symposium, University of Kansas.
1990. "Factors affecting metabolism of field-trapped marmots." Paper presented at Ecological Society of America Annual Meeting.

#### **Publications:**

- Zervanos, S.M., **C.M. Salsbury** and J.K. Brown. Maintenance of biological rhythms during hibernation in Eastern woodchucks (*Marmota monax*). *Journal of Comparative Physiology B*, accepted.
- Salsbury, C.M.** 2008. Distribution patterns of *Sciurus niger* (Eastern fox squirrel) leaf nests within woodlots across a suburban/urban landscape. *Northeastern Naturalist*, 15(4):485-496.
- Ryan, T.J., C.A. Conner, B.A. Douthitt, S.C. Sterrett, and **C.M. Salsbury**. 2008. Movement and habitat use of two aquatic turtles (*Graptemys geographica* and *Trachemys scripta*) in an urban landscape. *Urban Ecosystems*, 11(2):213-225.
- Salsbury, C.M.**, R.W. Dolan, and E.B. Pentzer\*. 2004. The distribution of fox squirrel (*Sciurus niger*) leaf nests within forest fragments in central Indiana. *American Midland Naturalist*, 151:369-377.
- Salsbury, C.M.** and K.B. Armitage. 2003. Variation in the growth rates of yellow-bellied marmots, *In: Adaptive Strategies and Diversity in Marmots* (R. Ramousse, D. Allaine, and M. Le Berre, eds.), pp.195 – 204. International Marmot Network, Lyon.
- Zervanos, S. and **C.M. Salsbury**. 2003. Continuous body temperature monitoring of free-ranging woodchucks (*Marmota monax*). *Journal of Mammalogy*, 84:299-310.
- Zervanos, S. and **C.M. Salsbury**. 2001. Telemetry system for the continuous monitoring of temperature, location and activity of free-ranging animals. *Bulletin of the Ecological Society of America*, 82:189-191.
- Armitage, K.B., B. Woods, and **C.M. Salsbury**. 2000. Energetics of hibernation in woodchucks (*Marmota monax*). *In: Life in the Cold* (G. Heldmaier and M. Klingenspor, eds.), pp. 73-80. Springer, Berlin, New York.
- Armitage, K. B., **C. M. Salsbury**, E. L. Barthelmess, R. G. Gray, and A. Kovach. 1996. Population time budget for the yellow-bellied marmot. *Ethology Ecology and Evolution*, 8:67-95.
- Salsbury, C. M.** and K. B. Armitage. 1995. Reproductive energetics of adult male yellow-bellied marmots. *Canadian Journal of Zoology*, 73:1791-1797.
- Salsbury, C. M.** and K. B. Armitage. 1994. Resting and field metabolic rates of adult male yellow-bellied marmots, *Marmota flaviventris*. *Comparative Biochemistry and Physiology*,

108A:579-588.

**Salsbury, C. M.** and K. B. Armitage. 1994. Home-range size and exploratory excursions of adult, male yellow-bellied marmots. *Journal of Mammalogy*, 75(3):648-656.

Armitage, K. B. and **C. M. Salsbury**. 1993. The effect of molt on oxygen consumption of yellow-bellied marmots (*Marmota flaviventris*). *Comparative Biochemistry and Physiology*, 106A:667-670.

**Salsbury, C. M.** 1993. Reproductive energetics of adult, male yellow-bellied marmots. Ph.D. Dissertation. University of Kansas, Lawrence.

Armitage, K. B. and **C. M. Salsbury**. 1992. Factors affecting oxygen consumption in wild-caught yellow-bellied marmots (*Marmota flaviventris*). *Comparative Biochemistry and Physiology*, 103A:729-737.

**Salsbury, C. M.** and K. B. Armitage. 1990. Factors affecting metabolism of field-trapped marmots. *Bulletin of the Ecological Society of America*, 71(2):312.

Van Vuren, D. and **C. M. Salsbury**. 1992. The relation between premolar wear and age in yellow-bellied marmots, *Marmota flaviventris*. *Canadian Field-Naturalist*, 106(1):134-136.

**Research Skills:**

Microsatellite analysis (DNA extraction and polymerase chain reaction analysis)

Natural sounds recording.

Radio-telemetry.

Small mammal trapping and handling.

Intra-peritoneal implants of radio-transmitters.

Blood collection via femoral venipuncture, cardiac puncture, and tail venipuncture in rodents.

Oxygen consumption analysis of small mammals using a negative pressure flow system and an electrochemical oxygen analyzer.

Assessment of field metabolic rates of small mammals using radioisotopes.

Radioimmunoassay analysis for protein and steroid hormones.

Iodination of protein hormones for radioimmunoassay analysis.

Gonadectomy of small-bodied mammals.

Computer assisted statistical data analysis.

**Service:**

**Butler University:**

Head of the Department of Biological Sciences, 2007 – present.

Charter Member, Phi Beta Kappa (Theta Chapter), 2008 – present.

Faculty Executive Committee to the Faculty Assembly, 2006 – 2008.

Co-Director of the Center for Urban Ecology, 2003 – 2009.  
Co-Founder/Director of the Butler Biology – STRI partnership, 2007 – present.  
Faculty sponsor of Butler student running club, 2008 – present.  
College of Liberal Arts and Sciences Core Curriculum Committee, 2005.  
College of Liberal Arts and Sciences Tenure and Promotions Committee, 2004 – 2009.  
Department of Biology. Curriculum Committee, Chair, 2004 – 2007.  
Department of Biology Facilities & Technology Committee, 2001 – 2004.  
College of LAS Individualized Major Committee, 2001 – present.  
Leader for the Butler University Institutional Team to the NSF funded F.I.R.S.T. II. (Faculty Institutes Reforming Science Teaching). 2002 – present.  
Committee member, Science Initiative Workgroup, 2003.  
Assisted with Biological Sciences grant application to Howard Hughes Medical Institute, 2003.  
Faculty Orientation Guide for incoming freshmen, 2002 – 2006.

***Albright College:***

Faculty leader for Gateway Program, a first-year student extended orientation program, 1999 – 2000.  
Twice elected by the full faculty to the Educational Policy Council, one of four policy-setting councils of the faculty governance system. 1997 - 2001.  
Elected by full faculty to the Academic Appeals Committee. 1998 - 2001.  
Co-chair, Student Development Committee. 1998 – 1999.  
Chair, Student Development Committee. 1999 – 2001.  
Committee member, Institutional Review Board. 2000.  
Steering committee member, Albright Allies. 1997 – 1998.  
Chair, Information and Technology Committee. 1997 - 1998.  
Steering committee member, Albright / Pennsylvania State University Alliance. 1996 - 1997.  
Faculty advisor and Chief Operator to the student radio station, WXAC. 1996 - 2001.  
Faculty advisor to the student environmental club, Albright Environmental Action. 1998 - 2000.  
Faculty advisor to student group BiGLAS. 1999 – 2000.  
Search committee member: Cultural Ecologist search, 1997 - 1998; Political Scientist (Environmental Policy) search, 1998 – 1999.  
Chair of search committee for Environmental / Earth Scientist, 1999 – 2001.  
Search committee member: Psychobiology search, 2001.  
Search committee member: Cultural Anthropologist search, 2001.  
Assistant coach of the Women's Cross-country team, 2000.

**Affiliations:**

Rocky Mountain Biological Laboratory  
American Society of Mammalogists  
Animal Behavior Society  
Indiana Academy of Science

**References:**

Dr. Kenneth B. Armitage, Department of Systematics and Ecology, University of Kansas, Lawrence, KS 66045. ph: 785-864-3236 email: marmots@lark.cc.ukans.edu.

Dr. Karen Campbell, Chair, Department of Biology, Albright College, P.O. Box 15234, Reading, PA 19612. ph: 610-921-7728 email: karenc@joe.alb.edu.

Dr. Michael Zimmerman, Department of Biological Sciences, Butler University, 4600 Sunset Ave., Indianapolis, IN 46208. ph:317-940-6644 email: mzimmerm@butler.edu.

Dr. Stam Zervanos, Department of Biology, Penn State University – Berks Campus, Tulpehocken Road, Reading, PA 19610. ph: 610-396-6166 email: smz1@email.psu.edu