

CURRICULUM VITAE

For

LaRoy S. E. Brandt, PhD

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EDUCATION

Ph.D. Entomology University of Kansas, Lawrence, KS
Dissertation: Evolutionary Consequences of Female Mate Choice in the Lesser Wax Moth, *Achroia grisella*.
M.S. Biology, 1999, Central Missouri State University, Warrensburg, MO
Thesis: Ecological Characterization of the Prairie Mole Cricket, *Gryllotalpa major*, at Chapel View Prairie.
B.S. Biology, 1996, Southwest Missouri State University, Springfield, MO
A.A. (biology) with honors, 1994, State Fair Community College, Sedalia, MO

RESEARCH INTERESTS

Behavioral Ecology, Animal Behavior, Evolutionary Genetics, Quantitative Genetics, Population Ecology, Conservation Biology, Conservation Genetics, and Science Education.

ADMINISTRATIVE EXPERIENCE

Department Chair, State Fair Community College, Sedalia, MO.
January 2008 – Present Department of Math, Science, Agriculture, CIS, & Networking.
August 2005 – June 2006, Interim Department of Math, Science, and Agriculture,
Faculty Association President, June 2005 – June 2006. State Fair Community College, Sedalia, MO.
Biology Program Coordinator and Lead Instructor, Fall 2002 – present. State Fair Community College, Sedalia, MO.
Biotechnology Program Coordinator, Spring 2005 – present. State Fair Community College, Sedalia, MO.
Internal Reviewer and Institutional Principle Investigator of NSF Grant, "Biotechnology Curriculum Development and Dissemination Project," NSF DUE ATE-0603308.

ACADEMIC TEACHING EXPERIENCE

Lead Biology Instructor, Fall 2002 – present, State Fair Community College, Sedalia, MO.
General Botany/Biology I (majors) *Introduction to Biology* (non-majors)
General Zoology/Biology II (majors) *Environmental Science* (non-majors)
Genetics (majors) *Introduction to Earth Science* (non-majors)
General Biology/Introduction to Biology (non-majors) *Introduction to Marine Ecology* (mixed majors)
Wildlife Conservation (mixed majors) *Human Sexuality* (mixed majors – team taught)
Introduction to Zymology
Adjunct Professor, Spring – Summer 2002, Central Missouri State University, Warrensburg, MO.
Introduction to Ecology (non-majors) *Anatomy and Physiology* (labs only)
Biological Literature (graduate)
Adjunct Professor, Fall 2001, Baker University, Baldwin City, KS.
Human Ecology (mixed majors)
Graduate Teaching Assistant, Fall 2001, University of Kansas.
Diversity of Living Organisms (majors)
Museum Lecturer and Workshop Teacher, Natural History Museum, University of Kansas.
Insect Lectures, Lawrence Senior Center, Fall 1999 *Sound Production in Insects*, Natural History
Night Sounds of Insects, Baker Wetlands, Fall 2000 Museum, Fall 2000
Graduate Teaching Assistant, 1997-98, Central Missouri State University.
Anatomy and Physiology (2 semesters) *General Botany* (2 semesters)
Introduction to Ecology (2 semesters) *General Zoology* (2 semesters)
Adjunct Faculty, Fall 1996, State Fair Community College.
Human Biology (mixed majors)

RESEARCH EXPERIENCE

Undergraduate Research Supervisor Fall 2002 – present, State Fair Community College, Sedalia, MO
Spring 2008. Semiconservative DNA Replication: Replicating Meselson and Stahl. Student presentation at annual meeting of Missouri Academy of Science, April, 2008
Spring 2008. DNA as the Molecule of Inheritance: Investigating Hershey-Chase. Student presentation at annual meeting of Missouri Academy of Science, April, 2008.

- Summer 2007. Supervised Marine Ecology Research at the Belize Tropical Research and Education Center on joint field course with University of Central Missouri. Students conducted field research projects on coral reef ecology that resulted in group oral presentations at the end of the course.
- Fall 2006 – Spring 2007. Synthesis of Biological Monomers in a Prebiotic Environment: Replicating the Miller-Urey Experiment. Student presentation at annual meeting of Missouri Academy of Science, April, 2007.
- Fall 2006 – Spring 2007. Factors Influencing Memory in Flatworms. Student presentation at annual meeting of Missouri Academy of Science, April, 2007.
- Spring 2006. Genetics and Gustation of Various Chemicals in a Small Student Population. Student research presented at Missouri Academy of Sciences.
- Summer 2005. Insect Diversity of Muddy Creek at Pinhook Access, Pettis County.
- Summer 2005. Mapping the Muddy Creek Watershed.
- Fall 2004 – Spring 2006. Memory in Flatworms: Training Planaria in a Y-maze.
- Research Assistant**, 1998 – 2003. Quantitative Genetics. University of Kansas.
Examined the genetics behind sexually selected ultrasonic male signals and female preferences in the lesser waxmoth, *Achroia grisella*.
- Marine Ecology Research Trip**, 1998. Hofstra Marine Lab, Jamaica.
Examined abiotic effects on gastropod distribution in tidepools. Examined diversity of fish species associated with the coral reef. Assisted in various other ecological projects.
- Research Assistant**, 1998. Computer Programming. Central Missouri State University.
Wrote Basic ecological statistics programs for the TI82 Programmable Calculator.
- Animal Ecology Research Trip**, 1998. Tumbling Creek Cave, Protem, MO.
Examined cave species diversity and community composition.
- Aquatic Ecology Research Trip**, 1997. Southwest Missouri.
Examined distribution of flatworms in natural spring-fed streams.
- Undergraduate Research Assistant**, 1996. Computer Programming. Southwest Missouri State University.
Designed and wrote a Microsoft Visual FoxPro database for mineral identification based on physical characteristics of minerals. Program used in the Mineralogy Course.
- Volunteer Field Assistant**, 1995. Grand Teton Wildlife Area, WY.
Plant voucher specimen collecting trip with Jim Fowler, State Fair Community College, and Ron Hartman, University of Wyoming.
- Volunteer Field Assistant**, 1994. Black Canyon of the Gunnison.
Paleo-reconnaissance trip with Jim Fowler, State Fair Community College.
- Undergraduate Research Project**, 1994. State Fair Community College.
Family identification of insects collected from the Colorado Plateau.
- Field Assistant**, 1993. Missouri Department of Conservation.
Transect monitoring of quail populations.
- Volunteer Field Assistant**, 1994, 1993, 1992. State Fair Community College in conjunction with the Missouri Department of Conservation.
Collected age and sex data on, and took blood samples from, white-tail deer killed during fall hunting seasons.
- Undergraduate Research Project**, 1993. State Fair Community College.
Examined the effect of density on population growth in *Tribolium confusum*.
- Undergraduate Research Project**, 1992. State Fair Community College.
Examined regenerative powers of flatworms.

PUBLICATIONS

- Brandt, L. S. E. 2005 – 2006. Biology I and II Lab Manual (majors). Self-published, State Fair Community College, Sedalia, MO.
- Brandt, L. S. E. 2004 – 2006. Introduction to Biology Lab Manual (non-majors). Self-published, State Fair Community College, Sedalia, MO.
- Brandt, L. S. E., B. Ludwar, and M. D. Greenfield. 2005. Co-occurrence of preference functions and acceptance thresholds in female choice: mate discrimination in the lesser was moth. *Ethology* 111 (6), 609-625.
- Brandt, L. S. E., and M. D. Greenfield. 2004. Condition-dependent traits and the capture of genetic variance in male advertisement song, (Lepidoptera: Pyralidae: *Achroia grisella*). *Journal of Evolutionary Biology* 17 (4), 821-828.
- Sandidge, J. S., and L. S. E. Brandt. 2002. Marking Arthropods for Nocturnal Observation: Pinpoint Accuracy and Individual Identification Using Fluorescent Powders. *Journal of Kansas Entomological Society*.
- Brandt, L. S. E. 2001. Quadrat Sampling of Prairie Mole Cricket Burrows to Estimate the Population. IN: Eli Meir, ed. *EcoBeaker 2.5*. BeakerWare, Ithaca, NY.
- Brandt, L. S. E. 2001. The Biology of Prairie Mole Crickets. IN: Eli Meir, ed. *EcoBeaker HS*. BeakerWare, Ithaca, NY.

- Brandt, L. S. E. 2001. The Successful Re-introduction of River Otters in Missouri? IN: Eli Meir, ed. *EcoBeaker HS*. BeakerWare, Ithaca, NY.
- Brandt, L. S. E., and J. F. Belshe. On the Chorusing Behavior of Prairie Mole Crickets: Multivariate Analysis of Environmental Influences (Orthoptera: Gryllotalpidae: *Gryllotalpa major* Saussure). In review: *Journal of the Kansas Entomological Society*.
- Brandt, L. S. E., and J. F. Belshe. Burrow Distribution and Lek Behavior in Male Prairie Mole Crickets (Orthoptera: Gryllotalpidae: *Gryllotalpa major* Saussure). In review: *American Midland Naturalist*.
- Brandt, L. S. E., and J. F. Belshe. Notes on the Prairie Mole Cricket: Sampling Techniques and Burrow Construction (Orthoptera: Gryllotalpidae: *Gryllotalpa major* Saussure). In review: *Florida Entomologist*.

PRESENTED PAPERS

- Brandt
- Brandt, L. S. E. 2007. Biotechnology Curriculum Development and Dissemination Project. Presentation of Biotechnology Curriculum at the National Science Foundation Advanced Technological Education Conference, Washington, D.C.
- Brandt, L. S. E. 2006. Improving Middle School and High School Science Laboratory Experiences. Presented multiple examples of hands on learning exercise for both middle and high school science courses. Teachers Teaching with Technology Leadership conference hosted by the Wind River Rural Systemic Initiative and Math Science Partnerships.
- Brandt, L. S. E., and M. D. Greenfield. 2004. Condition-dependent Traits and the Capture of Genetic Variance in Male Advertisement Song, (Lepidoptera: Pyralidae: *Achroia grisella*). Invited speaker in population and evolutionary genetics symposium at the North Central Branch of the Entomological Society of America. Kansas City, MO.
- Brandt, L. S. E., and M. D. Greenfield. 2002. The Lek Paradox and the Capture of Genetic Variance. International Society of Behavioral Ecology. Montreal, Canada.
- Brandt, L. S. E. 2001. Quantitative Genetic Evidence of Condition Dependent Traits in the Lesser Waxmoth, *Achroia grisella*. Animal Behavior Society. Corvallis, OR.
- Brandt, L. S. E. 2000. Sexually Selected Characters, Life History Traits, and Antagonistic Pleiotropy. Society for the Study of Evolution, Bloomington, IN.
- Brandt, L. S. E. 2000. Sexually Selected Characters, Life History Traits, and Antagonistic Pleiotropy. Animal Behavior Society. Atlanta, GA.
- Brandt, L. S. E. 2000. Sex in the Field: Maintaining Variation through Antagonistic Pleiotropy. Midwest Behavioral Ecology Conference. Texoma, OK.
- Brandt, L. S. E. 1999. Sexual Selection in *Achroia grisella*, the Lesser Waxmoth. Midwest Behavioral Ecology Conference. Texoma, OK.
- Brandt, L. S. E. 1998. Prairie Mole Cricket Burrow Distribution and Dispersion at Chapel View Prairie. Midwest Ecology and Evolution Conference. Charleston, IL.
- Brandt, L. S. E. 1998. Factors Influencing Prairie Mole Cricket Distribution and Dispersion at chapel View Prairie. St. Joseph, MO.

PROFESSIONAL AND SERVICE ACTIVITIES

- Missouri Department of Higher Education Science Curriculum Alignment Committee.** Fall 2007. **Missouri Department of Higher Education Grade Level Expectancy Review Committee.** May 2007.
- Missouri Department of Higher Education Teacher Improvement Grant Cycle 5 review committee.** January 2007.
- SFCC Science Club Faculty Sponsor.** August 2004 – present. State Fair Community College. Sedalia, MO.
- SFCC Unity Club Faculty Sponsor.** August 2006 – present. State Fair Community College. Sedalia, MO.
- Institutional Review Board Policy Committee Chairman.** 2007. State Fair Community College, MO.
- AQIP Oversight Committee.** August 2005 – 2006. State Fair Community College. Sedalia, MO.
- Faculty Salary Committee.** August 2005 – Present. State Fair Community College. Sedalia, MO
- SFCC Representative to the Concerned Citizens of the Sedalia Water District.** July 2005 – present. Sedalia, MO.
- Faculty Association President-elect.** August 2004 – June 2005. State Fair Community College. Sedalia, MO.
- SFCC Missouri Stream Team Supervisor.** Spring 2004 – Present. State Fair Community College. Sedalia, MO.
- Action Troop 513 Stream Team Supervisor.** Spring 2004 – Present. Boy Scout Troop 513, Warrensburg, MO.
- Invited speaker in public debate on evolutionary origins of life.** 2004. Smith-cotton High School, Sedalia, MO.
- SFCC Curriculum Committee.** Fall 2003 – Fall 2005. State Fair Community College. Sedalia, MO
- SFCC IT Strategic Planning Committee.** 2004. State Fair Community College. Sedalia, MO.
- Boy Scout Assistant Scoutmaster Troop 513.** 2004 – 2007. Warrensburg, MO
- Boy Scout Advancement Chairman Troop 513.** 2002 – 2007. Warrensburg, MO.
- Committee to form Graduate Student Distinguished Speaker Colloquium.** 2001. Chair. Ecology and Evolutionary Biology Graduate Student Organization, University of Kansas.

- Committee on Graduate Studies.** 2000 – 2001. College of Liberal Arts and Sciences Graduate Student Representative, University of Kansas.
- Grant Proposal Writing Award Guidelines Committee.** 2000. Chair and Department of Ecology and Evolutionary Biology Graduate Student Representative, University of Kansas.
- Snow Entomological Graduate Organization.** 1998 – 2001. President, 1999-2001. University of Kansas.
- Summer Institute in Statistical Genetics.** 1999. Attended workshops on Quantitative Genetics and Population Genetic Data Analysis. North Carolina State University, Raleigh, NC.
- Graduate Student Representative to Departmental Meetings.** 1997 – 1998. Central Missouri State University.
- Cub Scout Assistant Den Leader.** 1999 – 2002. Baldwin City, KS.
- Science Fair Judge.** 1997 and 1998. Central Missouri State University.

AWARDS, FELLOWSHIPS, AND GRANTS (total: \$52,671)

- National Science Foundation Grant DUE ATE-0603308.** August 2006. Biotechnology Curriculum Development and Dissemination Project. SFCC Award \$45,000.
- Department of Ecology and Evolutionary Biology Endowment.** June 2001. University of Kansas. For travel to the Animal Behavior Society Annual Meeting 2001. Awarded \$671.
- Department of Entomology Summer Fellowship for Research,** Summer 2000. University of Kansas. \$3500.
- Graduate School Travel Award,** July 2000. University of Kansas. For travel to Animal Behavior Society Annual Meeting 2000. Awarded \$300.
- Hungerford Fund,** October 2000. University of Kansas. For travel to Animal Behavior Society Annual Meeting 2000. Awarded \$300.
- Hungerford Fund,** May 2000. University of Kansas. For travel to Society for the Study of Evolution Annual Meeting. Awarded \$600.
- Hungerford Fund,** October 1999. University of Kansas. For travel to the Midwest Behavioral Ecology Meeting. Awarded \$100.
- Hungerford Fund,** May 1999. University of Kansas. For travel while attending the Summer Institute in Statistical Genetics at North Carolina State University, Raleigh, NC. Awarded \$1000.
- Summer Institute in Statistical Genetics Grant,** May 1999. North Carolina State University. For tuition and housing while attending the Summer Institute. Awarded \$600.
- Missouri Department of Conservation,** May 1997. Clinton, MO. For expenses associated with Master's Thesis Research. Awarded \$500.
- Sigma Xi,** April, 1997. Central Missouri State University. For expenses associated with Master's Thesis Research. Awarded \$100.
- Graduate School Grant for Master's Thesis Research,** January 1997. Central Missouri State University. Awarded \$500.
- Biology Alumni Endowment for Master's Thesis Research,** January 1997. Central Missouri State University. Awarded \$500

ACADEMIC AWARDS

- Department of Entomology Scholarship,** 2000. University of Kansas.
- Community College Transfer Scholarship,** 1994. Southwest Missouri State University.
- Department of Natural Sciences Scholarship,** 1993-1994. State Fair Community College.
- English Honors,** 1994. State Fair Community College
- Top Chemistry Student,** 1994. State Fair Community College.
- Academic Outstanding Student,** 1994. State Fair Community College.

NON-ACADEMIC TEACHING EXPERIENCE

- Volunteer Hunter's Education Instructor,** 1994 to present, Missouri Department of Conservation, Clinton, MO 64735
- Park Ranger Army Corps of Engineers,** 1994, Truman Lake, Warsaw, MO 65355
Truman Lake Visitors Center Assistant Manager

PROFESSIONAL MEMBERSHIPS

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| Council For Undergraduate Research | Society for the Study of Evolution |
| Entomological Society of America | Animal Behavior Society |
| Sigma Xi | Missouri Academy of Sciences |