

Curriculum Vitae and Professional Experience of  
**Caleb R. Hickman**

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## Education

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- **M.S., Biology, Missouri State University (MSU) (August 2002)**  
Research: Behavioral Ecology/Herpetology  
Advisor: Dr. Alicia Mathis  
**Thesis: "Response of salamanders to chemical stimuli from predators in natural habitats."**
  - **Selected Graduate Coursework:** Behavioral Ecology, Biometry, Evolution of Cooperation, Field Course in Baja Mexico, Game Management, Mammalogy, Marine Conservation, Ornithology, Scientific Writing.
- **B.S., Biology, Missouri Valley College (MVC) (May 2000)**  
Minor: Recreation Administration  
Research Advisor: Dr. Mark Mills  
**Thesis: "Herpetofauna of Van Meter State Park."**
  - **Selected Undergraduate Coursework:** Anatomy and Physiology, Animal Behavior, Ecology, Entomology, Genetics, Herpetology, Independent Study in Herpetology for Undergraduate Thesis, Invertebrate Zoology, Meteorology, Microbiology, Plant Taxonomy, Principles of Biology, Soils, Wildlife Ecology.

## Proficiencies

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- **Laboratory:** aseptic laboratory techniques (genetics, microbiology), DNA and RNA extraction techniques, Polymerase Chain Reaction (PCR), genotyping using ABI 3130 automated sequencer.
- **Field:** netting/trapping (invertebrates, fishes, large and small mammals, reptiles and amphibians), marking techniques (reptiles, amphibians and rodents), electro shocking (fishes), radio telemetry (deer, bats, snakes), and mist netting (bats, birds).
- **Research methods:** experimental design, data collection, data entry, QA-QC, database management, statistical analysis, literature research, general environmental and ecological assessment and analysis techniques, molecular analysis techniques, habitat characterization, preservation skills (plants, invertebrates, fishes, reptiles, amphibians and small mammals).
- **Taxonomy:** plants, invertebrates, fishes, amphibians, reptiles, birds and mammals.
- **Interpretation and management:** Developed interpretive camps, presentation of natural history and personal research to both scientific and non-scientific audiences. Minor of Recreation Administration covered many facets of management and interpretation to public audiences.

- **Computer:** Minitab, SigmaPlot, GeneMapper, Photoshop, Dreamweaver, Wiki, MS Word, Power Point, Excel, ArcGIS and GPS.

## Professional Experience

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- **Research Professional I. Aug. 2006 - Present.** Applied Ecological Genetics and Herpetology Division of the Savannah River Ecology Laboratory (SREL) - University of Georgia.
  - Isolation and optimization of microsatellite loci for various taxa.
  - *Alligator mississippiensis* field collection and laboratory processing for genetic and population research.
  - Support of SREL herpetology field projects, science and outreach.
  - Maintenance of *Anolis carolinensis* colony for genetics research.
  - *Anolis carolinensis* tissue preparation for genetic and cell culturing experiments.

**Supervisors:** Dr. Travis Glenn, Dr. Whit Gibbons and Judy Greene
- **Researcher. June 2006 – Present.** Characterizing the nature of the LTER network.
  - Organize, extrapolate and analyze authorship data for a social experiment to determine the collaborative changes in the LTER network over time.

**Collaborators:** Dr. Bob Christian (VCR-LTER), Dr. Jeff Johnson (East Carolina Univ.), Dr. Robert Waide (LTER Network Office PI), and James Brunt (LTER-Network Office).
- **LTER Scientific Research Administrator. Nov. 2004 - Aug. 2006** (full-time position). NSF funded Planning Grant for developing a coordinated effort to produce ideas of long term and integrated science that span various ecological systems.
 

LTER, UNM, Biology Department, Albuquerque, NM.

  - Organized meeting logistics and assisted scientists from various backgrounds (biogeochemistry, climatology, ecology, anthropology, economics, education, cyberinfrastructure).
  - Developed disseminating and collaborative sources (wiki web page and articles compiling the Planning Grant's progress).
  - Participated as a member of a "Biotic Structure" working group.

**Supervisor:** Dr. Scott Collins
- **Researcher. June 2003 – Present.** Abundance and ecosystem allocation of snakes at Sevilleta National Wildlife Refuge.
 

UNM Biology Department, Albuquerque NM.

  - Collected data on snake populations across a driving transect that traverses two habitat types.
  - Analyzing museum and other locality data.
  - Determine factors that influence abundance of snakes across the landscape.

**Collaborators:** Dr. Steven Poe (UNM Biology) and Tom Giermokouski (UNM Museum of Southwestern Biology-Herpetology Division).
- **Field Technician. Feb. 2003 – Aug. 2004** (part-time). Sevilleta National Wildlife Refuge (L.T.E.R) and surrounding areas. New Mexico State University and U.S.D.A.
 

New Mexico State University, Las Cruces, NM.

  - Experimental set-up and data collection for soil and vegetation studies.

- Performed infiltration experiments and collected soil core samples.
- Set up experiments and collected plant data to determine the use of goats as a remover for the invasive Salt Cedar in the Bosque waterway.
- Supervisors:** Dr. Sandy Tartowski and Jennifer Johnson
- **Field Research Associate. Sept. 2002 – Nov. 2004** (full-time position). Sevilleta L.T.E.R is a National Science Foundation (N.S.F) funded program located on Sevilleta National Wildlife Refuge.  
Sevilleta L.T.E.R, UNM Biology Department, Albuquerque, NM.
  - Data collection, entry and QA/QC for several (10+) long-term ecological research projects.
  - Collected phenology and net primary production of plants.
  - Collected population data of small mammals.
  - Managed a digital photographic library to catalogue research, scenery and organisms that occur on Sevilleta (see Gallery: <http://sev.lternet.edu/>).**Supervisor:** Dr. Scott Collins
- **Research Assistantship. May – Aug. 2002.** MSU Bull Shoals Field Station.  
Department of Biology, Missouri State University, Springfield, MO.
  - Maintained field station house and land.
  - Helped create informative trails and a study pond.
  - Participated in educational nature programs for all ages.
  - Assisted in various flora and fauna surveys.**Supervisor:** Dr. Janice Schnake-Green
- **Curatorial Intern. Jan. 2001 – Jan. 2002.** MSU. Graduate Assistant.  
Department of Biology, Missouri State University, Springfield MO.
  - Identified, cataloged and maintained/organized aquatic and terrestrial insect collections.**Supervisor:** Dr. Alicia Mathis
- **Volunteer. Aug. 2000 – Aug. 2002.** Graduate Student and Faculty Research at MSU.  
Department of Biology, Missouri State University, Springfield MO.
  - Indiana bat (*Federally Endangered*) surveys, northern Missouri; fish surveys in Bull Creek, southwestern Missouri; collections and surveys of various lizards, turtles, snakes (venomous and non-venomous), salamanders and frogs.
  - Surveyed for hellbender salamanders in MO, AR, MS, NC and GA.**Supervisor:** Dr. Alicia Mathis
- **Naturalist. May 1999 – Feb. 2000.** Missouri Department of Natural Resources.  
Van Meter State Park, Miami, MO.
  - Conducted presentations and guided hikes about nature and history to the public and school groups.
  - Designed and directed environmental camps for children ages 8-12.
  - Participated in a prescribed burn of a marsh and wetland area for restoration purposes.
  - Surveyed marsh plants and snails.
  - Undergraduate thesis on reptile and amphibians of the park.**Supervisors:** Cynthia Stevens and Dr. Mark Mills

## Teaching Experience

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- **Teaching Assistant, Fall 2000 - Spring 2002**, MSU
  - General Biology II Lab (majors): Spring 2002.
  - General Biology I Lab (majors): Fall 2001.
  - General Biology Lab (non-majors): Fall 2000-Spring 2001.
- **Teaching Assistant, Fall 1997-Spring 1998**. MVC.
  - General Chemistry Laboratory

## Published Manuscripts

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- Hickman, C. R., M. D. Stone, and A. Mathis. 2004. Priority use of chemical over visual cues for detection of predators by graybelly salamanders, *Eurycea multiplicata griseogaster*. *Herpetologica* 60:203-210.
- Mathis, A., K. L. Murray, and C. R. Hickman. 2003. Do experience and body size play a role in responses of larval ringed salamanders, *Ambystoma annulatum*, to predator kairomones? Laboratory and field assays. *Ethology* 109:159-170.

## Other Publications and Reports

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- Gibbons, J. W., J. L. Greene, K. M. Andrews and C. R. Hickman. 2007. Wildlife highway crossing study: Investigation of the use of highway culverts by wildlife- Pre-construction phase (highway widening). *Report to U.S. Geological Survey*.
- Hickman, C. R. 2005. LTER planning activities gain steam. *LTER Network News* 18(2).
- Hickman, C. R. 2004. LTER Planning Grant wiki web page for interactive collaborations. *University of New Mexico, Long Term Ecological Research Network Office*.  
[http://intranet.lternet.edu/planning/index.php?title=Main\\_Page](http://intranet.lternet.edu/planning/index.php?title=Main_Page)
- Hickman, C. R. and S. Poe. 2003. Snakes of the Sevilleta National Wildlife Refuge, New Mexico. *Report to Sevilleta National Wildlife Refuge*.
- Hickman, C. R. 2002. Response of salamanders to chemical stimuli from predators in natural habitats. Jaeger Travel Award, Herpetologists' League. *The Newsletter of the Herpetologists' League* 9(2).

## Manuscripts in Preparation

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- Hickman, C. R., and A. Mathis. Detection and distinction of predator kairomones by a terrestrial salamander (*Plethodon serratus*) in the field.
- Hickman, C. R., Intraspecific combat over prey in the species *Nerodia sipedon*. How a field observation relates to theory.

**Hickman, C. R.**, TBA (multiple potential authors and notes). Primer Notes.

Johnson, J., J. Brunt, **C. Hickman**, R. Waide, & R. Christian. LTER network analysis. How collaborations have changed since the creation of the Long Term Ecological Research programs.

## **Selected Presentations**

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**Hickman, C. R.** 2006. Inventory and monitoring of snakes in the southwest U.S. Inventory and Monitoring techniques course for federal agencies. Herpetology Division of the Savannah River Ecology Laboratory. South Carolina.

**Hickman, C. R.** 2006. Field behavioral experiments on salamanders. Invited Speaker. Texas State University. San Marcos, TX.

**Hickman, C. R.** and S. Poe. 2004. A preliminary report on the effect of habitat on snake abundance. Poster presentation at the annual Joint Ichthyologists' and Herpetologists' meeting. Norman, OK.

**Hickman, C. R.** 2004. Life after Valley: Studies and stories from a survivor. Invited Speaker. MVC, Marshall, MO.

**Hickman, C. R.** 2003. Introduction to the Sevilleta National Wildlife Refuge Long Term Ecological Research. Field presentation for students and professors for summer desert ecology courses. Sevilleta NWR, NM.

**Hickman, C. R.** 2002. Response of salamanders to chemical stimuli from predators in natural habitats. *Herp. League Jaeger Competition*. Joint meeting of Ichthyologists and Herpetologists, Kansas City, MO.

**Hickman, C. R.** and A. Mathis. 2002. Escaping the jaws of death: Antipredator decisions in nature. Interdisciplinary Forum, MSU, Springfield, MO.

**Hickman, C. R.** and A. Mathis. 2001. The effect of predation risk on aggressive behavior of the graybelly salamander, *Eurycea multiplicata*. Interdisciplinary Forum, MSU, Springfield, MO.

Mills, M.S., **C. R. Hickman**, and W. Hiler. 2001. Snails, snakes, and students: Herpetological research at Van Meter State Park. Missouri Herpetological Association. Steeleville, MO.

## **Honors and Awards**

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- **Who's Who Among Students in American Universities and Colleges**, 2003 (MSU).
- **Jaeger Travel Award**, Herpetologists' League (**\$200**), 2002. Summary published in *The Newsletter of the Herpetologists' League* (Sep. 2002, Vol. 9, Num. 2).
- **Topping Summer Research Fellowship Grant (~\$1500)**, 2001 (MSU).
- **Graduate College Research Grant (\$500)**, 2000 (MSU).
- **Biology Department Research Grant (\$500)**, 2000 (MSU).

- **Dr. Reed Kepner Biology Award**, 2000 (MVC).
- **Dean's List** (MVC).
- **NAIA National Wrestling Qualifier** (MVC).
- **Athletic Grant/Scholarship**, 1996-2000 (MVC).

## Activities

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- Field Chaperone for Visiting University Ecology and Herpetology Courses at the Savannah River Ecology Laboratory (2006-Present).
- Judge for Student Presentation Competition (Buell Award), Ecological Society of America. Montreal Canada (2005).
- Volunteer science booth presenter for UNM Biology at the Tricentennial Celebration (2005).
- Volunteer science booth presenter for UNM at the New Mexico State Fair (2004).
- Science Fair Judge in Albuquerque, New Mexico for junior high behavioral experiments/observations (Spring 2003, Spring 2006).
- Science Fair Judge at the Ozarks Science and Engineering Fair for behavioral experiments/observations (Spring 2002).
- Graduate Student member for Faculty Selection Committee (MSU 2002).
- Reviewer for *Behavioral Ecology and Sociobiology*.
- Herpetologists' League
- Partnership for Amphibian and Reptile Conservation (PARC)
- Cherokee Nation, active member.