

# MATTHEW MACMANES

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## General Research Interests

I am a Behavioral Ecologist broadly interested in combining field and molecular methods to explore topics including sexual selection, mating systems, and evolution. I use rodents of the genus *Peromyscus*, microsatellites, DNA sequencing, (Solexa and Sanger methods) and cloning to explore ideas related to these central themes.

## Research Projects:

### CURRENT

1. Dissertation
  - a. Development of a quantitative measure of mating systems
  - b. Analysis of the effects of mating system on selection on MHC genes.
  - c. Patterns of selection on MHC genes in the genus *Peromyscus*
  - d. Characterization of vaginal bacterial flora in rodents with different mating systems.
2. Characterization of the hippocampal transcriptome in social versus non social rodents using Solexa sequencing (with Eileen Lacey, Craig Moritz)
3. Phylogeography of *Peromyscus eremicus* and *Peromyscus fraterculus* in southern California. (with Jim Patton)
4. Construction of a multilocus *Peromyscus* phylogeny.
5. DNA sequencing from 100 year-old museum skins. (with Eileen Lacey)
6. Cross-species amplification of microsatellites in *Peromyscus* (with Karen Mabry)

### PAST

1. Microsatellite development. (*Octodon*, *Trimomys*, *Thomomys*, *Chaetodipus*, *Spalacopus*) with Ana Trujano, Wly dos Santos, and Eileen Lacey
2. MHC sequencing project with *Ctenomys sociabilis* with Eileen Lacey, Ana Paula Cutrera
3. Howler monkey microsatellite genotyping using fecal DNA with Katherine Milton and Eileen Lacey.

## Funding

- |  |                    |
|--|--------------------|
| • MVZ grant to do mRNA-seq experiment              | \$15,000           |
| • NSF-DDIG   | \$14,134           |
| • Mildred Mathias Award                            | \$2,500            |
| • NSF Graduate Research Fellowship                 | \$40,500 per annum |
| • UCB Chancellor's Fellowship for Graduate Studies | \$25,000 per annum |
| • UCB Edge Fellowship -2005                        | \$12,000           |
| • MVZ Martens Award-2005                           | \$2,000            |
| • California Desert Research Fund- 2006            | \$4,000            |
| • Sigma Xi- 2006                                   | \$500              |
| • MVZ Mildred Mathias Award                        | \$2,500            |

## Education

- **PhD, Integrative Biology** *expected graduation May, 2011*  
University of California-Berkeley  
Primary Adviser: Eileen Lacey, PhD  
Oral Exam Committee: Walt Koenig, Craig Moritz, Rauri Bowie, Rodrigo Almeida.  
Dissertation Committee: Eileen Lacey (chair), Craig Moritz, Rodrigo Almeida
- **B.S., Natural Resources, Minor: Ecology** *April, 2005*  
University of Michigan, Ann Arbor, MI - Concentration: Animal Behavior  
Concentration Adviser: Bobbi Low, PhD

## Teaching

- Integrative Biology 1B. Graduate Student Instructor- General Biology. Fall 2006
- Integrative Biology 31. Graduate Student Instructor- Behavioral Biology. Spring 2006

## Professional Activities

- Peer review referee for Journal of Mammalogy, Behavioral Ecology.
- Mentor- mentoring undergraduate student majoring in Integrative Biology. 2006.
- ASUC Undergraduate/Graduate Mentorship Program. Mentored undergraduate student- 2005
- Associate Member, Sigma Xi
- Member, American Society of Mammalogists
- Member, Animal Behavior Society
- Member, International Society for Behavior Ecology
- Member, Society for the Study of Evolution

## Publications

1. **MacManes, M.** (In prep). MHC and Mating Systems. Is selection on MHC genes related to sexual behavior? *Molecular Ecology*
2. Trujano, A., **MacManes, M.** (In prep) Isolation and characterization of polymorphic microsatellite loci from *Thomomys bottae*. *Molecular Ecology Resources*
3. dosSantos, W., **MacManes, M.**, Lacey, E., (In final Prep) Isolation and characterization of polymorphic microsatellite loci from *Trinomys yonenagae*. *Molecular Ecology Resources*
4. QUAN, Y., **MacManes, M.**, EBENSPERGER, L., LACEY, E. & HAYES, L. (2009). Isolation and characterization of polymorphic microsatellite loci from *Octodon degus*. *Molecular Ecology Resources*, 3. <http://dx.doi.org/10.1111/j.1755-0998.2009.02536.x>

## Presentations

- Invited Lecture: UC Berkeley. IB84. Mating System Diversity.
- Evolution 2009: University of Idaho. MHC and Mating Systems. Is selection on MHC genes related to sexual Behavior?
- ISBE 2008; Cornell University. MHC and Mating Systems \*poster presentation
- Lecture, Mating systems and MHC. Behavior Lunch. October 2007
- Lecture, Mice.. Matins Systems, and MHC. Behavior Lunch. November 2006.
- Presentation- Convergent evolution in mammals- OceanView Elementary School- May, 2006
- Lecture, Sexually transmitted disease and the evolution of mating systems. Behavior Lunch. December 2005.
- Lecture, Linear Regression in R, R group. November, 2005