



Sara M. Lewis
Associate Professor

: 617.627.3548
Fax: 617.627.3805
: sara.lewis@tufts.edu

Dr. Andrew McClellan
Chair, Committee on Faculty Research Awards
c/o Office of the Dean
Graduate School of Arts & Sciences
Ballou Hall

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To the Faculty Research Awards Committee:

I wanted to provide the Committee on Faculty Research Awards with a brief progress report on the past two years of research accomplished with the generous support of a Faculty Research Fund Award entitled "*Sexual conflict and speciation in fireflies*" awarded March 2002. This award was extremely valuable as it allowed my lab to investigate key components of the evolutionary process of sexual selection using fireflies as a tractable and fascinating model system.

During the past two field seasons, we were able to examine anatomical and biochemical aspects of the reproductive systems of *Photinus* fireflies, and have documented major differences both within and between species. Within one particular species, *P. greeni*, we found population differences indicating that females are rapidly evolving new structures to store, and potentially choose among, sperm from several mates. In collaboration with Dr. Ross Feldberg, we successfully used differential display RT-PCR to identify compounds produced by male accessory glands: these substances are likely to influence male paternity success, and we plan to use these results to see how differences among males may increase reproductive fitness. In addition, we have now developed and streamlined molecular techniques that allow us to trace differences in paternity success of several males mating with a single female. I was invited to present some results of this work at a symposium organized by the Society for Integrative and Comparative Biology in Montreal in January 2003, and am currently resubmitting a proposal to the National Science Foundation to extend this work.

I am extremely grateful for the committee's generous support, which has allowed us to pursue this extremely productive and exciting avenue of research.

Sincerely,

Sara M. Lewis