

Theory and Experiments on Infectious Disease: How One Couple is Finding Creative Solutions



Lynda Delph
Professor, Department of Biology

CURRENT RESEARCH

Investigations into how genetic diversity affects the spread of disease

Infectious diseases have an incredible affect on humans directly through our own health as well as infections of agricultural crops. It is therefore necessary to understand what factors contribute to the spread of infectious diseases to improve human and agricultural health. The research of Dr. Lynda Delph and Dr. Curtis Lively, of Indiana University, does just that. Their combined theoretical and experimental approaches merge epidemiology with evolution in a way that provides insight into infectious diseases. By merging their interests, they can focus on a simple underlying theme: how does genetic diversity affect the spread of infectious disease in natural populations? Dr. Delph and Dr. Lively's laboratories are located side-by-side making collaboration easy. However, perhaps more unique, is that in addition to being collaborators, they are also married. Therefore, their career-long collaboration has supported innovative and rigorous scientific breakthroughs.

Using the plant, *Silene latifolia*, Dr. Delph looks at why males and females are so different from each other and why populations of this species also differ in many ways, including the extent to which they are infected by disease. Using a freshwater snail from New Zealand, Dr. Lively looks at why two different types of females, one that mates with males to produce genetically variable offspring, and asexual females that produce genetically identical clones of themselves, are able to coexist in nature when disease is present. The combination of their systems and studies allow this collaborative couple to understand various diseases. Dr. Lively has produced mathematical theory that combines epidemiological models with evolutionary models that makes...

[Read More at benefunder.com/](https://www.benefunder.com/)

AFFILIATION



Indiana University Bloomington

EDUCATION

- B.Sc. in Biology, 1979
University of Arizona
- M.Sc. in Biology, 1983, University of Arizona
- Ph.D. in Biology, 1988
University of Canterbury, New Zealand
- Postdoctoral Fellow in Biology, 1989
Rutgers University

AWARDS

- Senior Class Award for Teaching Excellence in Biology and Dedication to Undergraduates, 1995
- Teaching Excellence Recognition Award, 2000
- Indiana University Trustees' Teaching Award for Outstanding Teaching, 2005
- Guggenheim Fellowship, 2005
- Fellow, American Association for the Advancement of Science, 2010

RESEARCH AREAS

Health & Wellness, Wellness, Aging Research

FUNDING REQUEST

Your contributions will support the research of the collaborative couple, Dr. Lynda Delph and Dr. Curtis Lively, of Indiana University, as they continue their current work with the hope to understand the effect of genetic diversity on the spread of disease. Your donations will support the \$300-500K required for personnel, materials, and supplies. Therefore, by supporting their research, you will play an important role in educating future scientists and understanding the spread of disease.