

## **Course: Interactions Between Environmental Change, Genetics & Immunology**

### Final Report

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The objective of this project was to determine the feasibility of developing a course module exploring the links between environmental perturbation and immune system function, within an evolutionary context. This objective turned out to be far more ambitious than initially envisioned. A large review of the literature and a survey of modern immunology courses were conducted to determine if any extant foundation could be gleaned. Unfortunately, the intersection between environment, immunology and evolution is a nascent field with little basis for the development of a course module. However, this review was not in vain, and was used as the context for several successful grant proposals, including:

1. NSF. Animal Behavior / Ecological and Evolutionary Physiology. Reproductive behavior and immune defense. 03/03 – 02/06. Total award = \$270,000
2. National Geographic Society. Mutation and selection in the barn swallows of Chernobyl. 08/02 – 07/04. \$20,000.
3. NSF. Population Biology. Mutation rates and fitness in the barn swallows of Chernobyl. 06/02 – 06/03. \$32,840.
4. SCCC. Stability of the p53 Tumor Suppressor Gene in Barn Swallows of Chernobyl, Ukraine. 2002-03. \$10,000.

It is anticipated that a course module will be developed for inclusion in an upper division environmental genetics course in the coming year.