

2017 KBS LTER ASM Working Groups

General charges

- 1) Begin by discussing our proposed new conceptual model.
- 2) Consider the topics as outlined below. Faculty will provide some fodder for discussion.
- 3) What research questions are ripe for exploration?
- 4) What new measurements or experiments might help address these questions?

Working group 1: From fields to landscapes (Room 102)

Individual agricultural fields are both affected by and affect the landscape matrix in which they are embedded, and the agricultural landscape is often a complex and interacting mosaic of managed and unmanaged land covers. Populations and communities of organisms interact across these spatial boundaries and gradients. Furthermore, water carries nutrients from agricultural fields downstream through subsurface and surface flow paths, generating concerns about water quality and eutrophication. In this workshop we will discuss strategies to better understand the implications of agriculture at landscape scales, which entails scaling up from our field research and considering new analyses and experiments to ask landscape-scale questions.

Faculty present: *Nick Haddad, Doug Landis*

Graduates present: *Susan Magnoli, Matt Houser*

Working group 2: Risk and vulnerability in a changing climate (Room 107)

How can we promote greater resilience of agricultural systems and livelihoods in the face of climate change? Warmer temperatures (including longer growing seasons), altered rainfall patterns, and more extreme rainfall events are some of the projected changes already being experienced. Proactive steps to increase resilience require understanding risk, vulnerability, and potential responses. In this workshop we will discuss gaps in this understanding and how we might fill them with future measurements, models, and analyses.

Faculty present: *Sandy Marquart-Pyatt, Steve Hamilton*

Graduates present: *Riva Denny, Prakash Kumar Jha*

Working group 3: Biological & technological evolution (Room 110)

Rapid evolution has been and will be key to the adaptation of agricultural systems to new pressures such as climate change and introduced pests. Biological evolution can help or hurt agricultural systems. Technological evolution—the intentional development of new crops, agrichemicals, farming techniques, etc.—can be just as rapid and has some parallels with biological evolution. In this workshop we will discuss and compare biological and technological evolution and think about how we can understand the relative importance of both for the resilience of agricultural systems.

Faculty present: *Scott Swinton, Jen Lau*

Graduates present: *Braeden Van Deynze, Jean-Rene Thelusmond*