**Session 1**
**Key Note: Agroecological Principles**

**Speaker: Steve Gliessman**

- Agroecology: the application of ecological principle and concepts to the design and management of sustainable agroecosystems
    - Principles and concepts of ecology (the science of how nature works)
    - Design (using principles to design alternative food systems)
    - Farm management
    - The whole-systems view of a food system
    - Sustainability (economic, social, cultural)
- You can apply agroecology to any food system
- Ecological Concepts and Principles
    - Ecosystem: a system of interactions between the living and non-living components of the environment
    - Agroecosystem: an ecosystem with a purpose
        - The added component of people who design and manage that system

- General Principle: The greater the structural and functional similarity of an agroecosystem to the natural ecosystems in its biogeographic region, the greater the likelihood that the agroecosystem will be sustainable
    - So much of what the agroecosystem produces is removed from the system
        - The system changes as a result of that removal.
            - Over time, this lessens the resiliency of the system

- Cultural Agroecology – Linking Culture and Ecology
    - Resistance vs. resilience
    - Complexity vs. simplicity
    - Isolation vs. interaction
    - Competition vs. mutualisms
    - Native vs. non-native
    - Open vs. closed systems
    - Dependency vs. autonomy

- Using Agroecology to Transition Process to Sustainable Agriculture
    - **Level 1:** Increase input use efficiency, reducing the use of costly, scarce, or environmentally damaging inputs
    - **Level 2:** Substitution of conventional inputs and practices with alternatives
    - **Level 3:** Redesign the agroecosystems so that it functions on the basis of a new set of ecological processes that provide system resistance
    - **Level 4:** Reconnecting the two most important parts of the system – consumers and producers, through the development of alternative food networks
        - Direct markets

        - Re-localization movement
        - Food hubs
        - Urban and peri-urban agriculture
    - **Level 5:** On the foundation created by sustainable farm-scale agroecosystems of Level 3 and the sustainable food relationships of Level 4, build a new global food system
        - Based on resilience, participation, localness, fairness, and justice, that is not only sustainable but can also help restore and protect life on Earth

- Indicators of Sustainability
    - Soil resources
    - Hydrological resources
    - Biotic resources
    - Ecosystem-level resources
    - Economic resources
    - Social resources
    - Cultural resources

- The food system is a global system that is interconnected and interactive
    - The ecological and holistic foundation of agroecology gives us an action-oriented approach for simultaneously developing alternative food systems while transforming our current industrial model

- Summer Course: Agroecology, a Global Movement: Tracing our Roots, and Looking Forward
    - July 12-25, 2015 in Santa Cruz