



# What is Synthesis?

- Wikipedia –
  - *The combining of two or more entities to form something new*
- WordNet (Princeton U) –
  - *The combination of ideas into a complex whole*
- MedicineNet.com
  - *Putting together different entities to make a whole which is new and different*



# What is Synthesis?

- Carpenter, et al. (BioScience; in press)
  - *A central part of all sciences*
    - *Integration of disparate data, concepts, theories to yield new knowledge, insights, or explanations*
    - *Creation of emergent knowledge in which the whole is greater than the sum of the parts*
    - *Generation of new knowledge from novel recombinations of existing information*



# NSF/BIO Synthesis Centers

- Conceptual synthesis in biology
- Collaboration of interdisciplinary teams
- IT resources
- Education and outreach activities



# NSF/BIO Synthesis Centers

- *National Center for Ecological Analysis & Synthesis (NCEAS)*
- *National Evolutionary Synthesis Center (NESCent)*
- *iPlant Collaborative*
- *National Institute for Mathematical and Biological Synthesis (NIMBioS)*