

Name: \_\_\_\_\_ Dr. Reichler's Bio 301M Spring 2010 Pre-Exam #4 Quiz

- 1) How would the genetically modified crops in current use help increase agricultural efficiency? Is the most common genetically modified crop reducing the chemicals applied to crops?
  
- 2) If corn and teosinte can reproduce with each other, how could this lead to the Round-up herbicide becoming ineffective?
  
- 3) How are bacteria involved in genetically modifying plants, and how is this different and similar to how animals, including humans, can be genetically modified?
  
- 4) Does an ecosystem have emergent properties?
  
- 5) How did researchers induce the exit of forager ants from the mound? What criteria was critical?
  
- 6) Does democracy as practiced in the U.S. follow emergent properties?

Answers on next page...

Answers:

- 1) By decreasing insect attack (Bt) and weeds (Round-up resistant) this can decrease the loss of plants and increase the resources available to the crops. No, Round-up resistant plants allow the farmers to apply herbicides during the growing season instead of only before the crops start growing.
- 2) The corn can pass on the Round-up resistant genes on to the teosinte. Making the weed, teosinte, resistant to the herbicide.
- 3) The agrobacteria is used to put genes into plants. The agrobacteria naturally insert some of its DNA into infected plants. In animals viruses are used, but the idea is similar, use the natural action to insert the DNA into the organism.
- 4) Yes, the connections between species and the movement of resources is complicated and not discernible from looking at the individual species that make up the ecosystem.
- 5) They added beads coated with patrol ants exudate. The rate of bead addition was critical in signaling the exit of the forager ants.
- 7) Yes and No. We elect representatives collectively, using the wisdom of crowds, but we do not typically allow individuals to directly make decisions.