

Name: _____ EID: _____

Topic: Development and Pattern Formation (Week 7)

Pre-discussion questions. Answer briefly. Use only the space provided.

- 1) What kind of spatial gradient is used in Basu2005 to trigger pattern formation? (What chemical compound is involved? How is it produced in the system?)
- 2) Explain how the genetic network in the BD2 medium-band pass cells leads to triggering their fluorescence only at intermediate (not not low or high) concentrations of the signal.
- 3) Draw a new 2-dimensional pattern (different from those in Figure 5, but illustrated in the same way) that could be produced using this system. Include at least 3 sender cells.
- 4) Give an example of a pattern present in nature that might be interesting and/or useful to recreate with the tools of synthetic biology. If applicable, draw the pattern.