Microbial Multicellularity Grading Rubric

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Introduction: **(9)** Mentions that the original belief about bacteria is that they live independently of each other **(3)**  Mentions bacteria’s multicellular tendencies **(3)**  Listed examples of how bacteria exhibit multicellular tendencies **(3)**

Body: **(19)** ☺ Quorum sensing **(8)**  \*definition of: change in gene expression in response to population density (3) \*autoinducer molecules (5) -AHL & Al-1: species specific signals (2) -versus Al-2: regulate fundamental collection of genes in all bacteria and so is a universal signal allowing for cross talk between species (2) -different in Gram (+) bacteria versus in Gram (–) bacteria (1)

☺ Virulence **(2)** \*how quorum sensing affects their own virulence (1) \*how quorum sensing can be used to affect other species virulence (1)

 ☺ Biofilms **(4)** \*What are they (3) \*swarming motility (1)

 ☺ PCD **(5)** \*what is it (2) \*evidence of (1) \*antibiotics (1) \*cannibalism (1)

Conclusion: **(7)**

Implications that this is not seen in cultures and other artificial nutrient rich environments (must be studied in-vivo) **(5)**

Why is this new idea of bacteria significant/ important (**2)**

Grammar & Articulation: **(5)**