The last weekend homework focuses not so much on the general knowledge, but on the process of doing science. Read the article “The discovery of aequorin and green fluorescent protein” (Written by Osamu Shimomura and published in *Journal of Microscopy*, 217, 3-15, 2005; copy on the course website). You are welcome to use any other resource, including the textbook, when answering the following five questions (2 pts each).

1) We have discussed in the class that crystallization of biological molecules can be unexpectedly difficult. Describe how Dr. Shimomura established the methodology for crystallization of luciferin. What was the importance of crystallizing this substance?

2) At some point during their work toward isolating the light-emitting substance from *Aequorea*, Dr. Shimomura had a disagreement with his boss, Dr. Johnson’s from Princeton University. What was the essence of their disagreement?

3) What problem-solving approach did Dr. Shimomura take when he could not find a way to reversibly inhibit luminescence from *Aequorea*?

4) Why is the story about discovery of green fluorescent protein published in the *Journal of Microscopy*? (Hint: how is this molecule useful in microscopy?)

5) Dr. Shimomura’s persistence in overcoming difficult research problems rewarded him in two very different ways. What were these ways? Hint: only one of these ways is mentioned in the paper.