

Biol. 221
Extra Credit Opportunity # 2

To receive 2% on the final exam, you must:

- 1) Read the article "How a century of ammonia synthesis changed the world."
- 2) Based on the information in this article, answer each of the questions given below.
 - A. Why did Fritz Haber receive the Nobel Prize in 1918?
 - B. What were Haber's two motivations for the process he discovered?
 - C. What percentage of human lives are thought to have been made possible by his discovery?
 - D. What were the unforeseen consequences of his discovery on the environment? Give at least 3 specific examples and describe EACH of them using at least 4 well-crafted and complete sentences (not bullet points). Thus, I expect a total of at least 12 complete sentences.
 - E. What are 3 ways that the effects of reactive nitrogen on the environment could be mitigated? And why do the authors think that such mitigation efforts are unlikely to reduce environmental consequences in the coming decades?
- 3) Listen to the audio file about Fritz Haber from the program Radiolab.
- 4) Based on the information contained in the audio file, answer the following questions:
 - F. What lesson did you take away after learning about the life of Fritz Haber?
 - G. In your opinion, was Fritz Haber good or evil or something else, and why?

Type your answers into a Word document and e-mail them as an attachment to Dr. Peterjohn before **midnight February 28, 2016** in order to receive any credit. Insufficiently complete responses to any of the questions will result in no extra credit being awarded.