You are a **Scientist Investigating Biodegradability**

**Your Background and Biography**

Although you’re officially at the beginning of your career as a scientist, still at work on your Ph.D. in biochemistry, you have already made some very important contributions to your field of study. You have produced enough noteworthy research that you sense a bit of professional envy toward your accomplishments not only from your fellow graduate students but even from some of your professors.

You got an early start as a scientist in your field when you entered an exhibit in your high-school science fair on the biodegradability of plastics. You’ve had a dream of solving the problem of plastic waste ever since you read a scientific report asserting that plastics are persistent in the environment because no organism has yet evolved that efficiently breaks them down by consuming them. According to this report it could take millions of years for such an organism to evolve. You wondered why we have to just sit and wait while mountains of indestructible plastic trash clog the planet. If humans have been using selective breeding for thousands of years to domesticate plants and animals to serve our needs, couldn’t we breed a microbe that breaks down plastics? You experimented with microbes and plastics, selecting and breeding the strains of microorganisms that showed the most efficiency in breaking down plastics. You ended up with a breed of full-fledged plastics-eating microbes, first prize in your science fair, and a lot of excited media attention. Your success also led to many offers from top universities to join them as a student. You are pleased to be working in one of the best graduate programs in the country, and you’re looking forward to graduating soon and launching your career as one of the foremost researchers in the field of plastic-consuming microbes.

Your success is already such that you are among the scientific experts who have been called upon to advise the Environmental Protection Agency on provisions for its new regulation addressing the problems of plastic waste. You will be serving as an expert on biodegradability, and you are looking forward to sharing your knowledge with an attentive and appreciative audience. You hope to represent yourself well and have diligently prepared an informed presentation on the potential problem-solving nature of your research.
Your Mission
Your goal at this hearing is to convince the Regulators to include the Sustainability Group’s recommendations in their final regulation. To make this argument effectively, you must

• Complete the assigned readings listed at the bottom of this page;
• Work closely with the other members of your group to develop clear answers to the Regulators’ questions;
• Make use of as much specific information as possible to develop strong arguments for your position that creative problem solving and innovation are the best solutions to the pressing environmental problems caused by plastic waste and fossil fuel–based production;
• Read as much as you can about your position and the positions of the other groups; and
• Complete written reflections on your character, interest group, and readings as assigned.

Your Victory Objectives

• You will receive 10 points if the Regulators select your group’s proposal as the final regulation.
• The Regulators will rank the interest groups by how well their goals are represented in the final regulation. You will receive between 1 and 5 points based on how the Sustainability Group is ranked and how well the regulation reflects your goals.

Sources

Sustainability Group Sources
• Case Study: The Future of Plastics
• “Interview with Paul Anastas,” video, vimeo.com/channels/465871

Your Individual Sources
• “Case Study: Breaking Down Plastics,” by the Georgia Tech Research Institute
• Select one article from the bibliography on The Case of Plastics website recommended for the Sustainability Group. Read the article and write two paragraphs summarizing the article and how it will be useful to you in the upcoming debate.