

Honors Topic Assignment #1

Due Thursday Sept. 19 (A/B) / Friday Sept. 20 (C/D)

Please watch the documentary "[Particle Fever](#)" and read the "[Nature of Scientific Knowledge](#)" and the "[Nature of Science](#)" chapter from [Science for All Americans](#).

After reviewing these resources please answer the following questions in a reflection. You can answer the questions individually or write them as a short reflection essay. Please make sure to use complete sentences as well as correct spelling and grammar.

Feel free to discuss your answers with others, but make sure that your reflection is in your own words and reflects the conclusions that you arrived at. If you do discuss this assignment with other students from the honors class, please list them at the top of your reflection.

Reflection Questions For Particle Fever

1. From what you observed in the movie, what does it look like to do science and engineering research as part of a large project? What different roles do you see?
2. How are theoretical and experimental physicists similar? How are they different?
3. How does the variety of characters in Particle Fever compare with what you think a scientist should be like?
4. Think of another film, fiction or non-fiction, that you have seen and compare the scientists and engineers in that film with those in Particle Fever .
5. What are the experiments being run in the film and what are their main purposes?
6. What is the standard model and what is its role in Physics? Do the results of the experiments at the Hadron Collider change our view of the standard model? In your opinion were the experiments a success?

Reflection Questions for the Nature of Science Readings

1. How does the historic science research described in the "Nature of Scientific Knowledge" article align with the characteristics of science research defined in the "Nature of Science" chapter?
2. What was the most surprising or intriguing statement/topic to you in both articles? Why did this particular topic jump out at you?

General Reflection Questions

1. Briefly describe how the act of doing science is portrayed in the articles and documentary. What connections can you see?
2. The articles both speak of scientists conducting research by building off of the work of scientists before them, but also of scientists questioning, retesting, and revising the results of others. What evidence do you see of this in the articles and the documentary?
3. The "Nature of Science" chapter has a section which discusses science as being a blend of logic and imagination. How do you see this reflected in the documentary and the "Nature of Scientific Knowledge" article?