WEEK 4 ASSIGNMENT

Write a 1-2 page response to your readings. You may choose some questions from the list below, but you are encouraged to raise your own questions. Your paper must touch upon all the readings assigned for the upcoming session. Please spell-check and proof-read your paper before submission.

1. What is the relationship between raw observations, computer data, and computer models in weather forecasting and climate science? Can you give examples of "data massage," "data-laden models," or "model-filtered data" from other fields?
2. What reasons did Forrester have to argue that "computer models could serve important policy purposes even in the absence of good data"? Do you agree with him? Give examples.
3. In what sense did computer models of weather, climate, and world dynamics shape our notion of "the world"? What is "global" about global models? What are the benefits and the risks of global models?
4. Discuss various techniques for dealing with the "computational bottleneck" in general circulation models (GCMs). How are similar problems resolved in other fields?
5. Can we properly speak of "validation" or "verification" of computer models? Give examples.
6. Is the model/data relationship in computational sciences a vicious circle or a symbiosis?
7. Discuss the role of the model/data relationship in political debates over climate change. Would you side with the "frontier" or the "high-proof" scientists?