

**Research planning workshop** – Energy Systems, fall 2004 week 5 - EJZ

By now, you have chosen a research topic, articulated some questions about it, and proposed some hypotheses that might address each question. Today you will take that process a step further. Goals of today's workshops, in class and in the library, include planning **ways to investigate your research questions and test your hypotheses**. This might involve further tailoring your questions and hypotheses.

Name: \_\_\_\_\_ Teammates \_\_\_\_\_

Research Topic:

0. Discuss your research questions with a classmate (not necessarily a teammate) for 3-5 minutes, listen to them for 3-5 minutes, then briefly **articulate your two best research questions** below.

1A. Discuss with a classmate (for 5 minutes) some hypotheses that might address one research question. Listen to your classmate's ideas for 5 minutes. **Restate your first question**, possibly revised, below:

\_\_\_\_\_ ?

Then articulate **three hypotheses** that might address your first question. You should be open to the possibility that any one of these may prove correct, upon further investigation.

- i. Your favorite hypothesis:
  
- ii. An alternative hypothesis:
  
- iii. A null hypothesis:

1B. For your first question and hypotheses, discuss with a classmate (for 5 minutes) some ways you might test your hypotheses. Listen to your classmate's ideas for 5 minutes. Then write down some specific ideas about **how to test your hypotheses**.

2A. Discuss with a classmate (for 5 minutes) some hypotheses that might address your second research question. Listen to your classmate's ideas for 5 minutes. **Restate your second question**, possibly revised, below:

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Then articulate **three hypotheses** that might address your second question:

- iv. Your favorite hypothesis:
  
- v. An alternative hypothesis:
  
- vi. A null hypothesis:

2B. For this question and hypotheses, discuss with a classmate (for 5 minutes) some ways you might test your hypotheses. Listen to your classmate's ideas for 5 minutes. Then write down some specific ideas about **how to test your hypotheses**.

3. Which of your research questions has hypotheses that you can most readily test?

4. We will now go to the Library for a workshop that will help you investigate ways to test your hypotheses. **Your assignment in the Library today** is to **fine-tune** your best research question and hypotheses, and **find some ways you might investigate them**.

5. Summarize the results of this workshop, including your Library research, and **post them to WebX this weekend** (with your research team). You can copy and edit this document from our program webpage if you like, and paste it as an attachment to WebX.

6. In the next few weeks, you will finish writing up your plan for winter research. Then in winter, you will investigate your question, test your hypotheses, and contribute some new knowledge to your topic of interest.