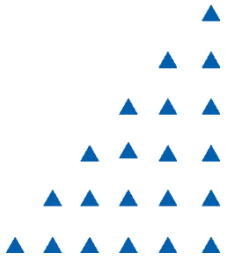




Research Methodology Workshop

: Research Question, Hypothesis, Objective, Goal



Research Process

Why is this research important?

What have other people done?

What have they found?

Research Question – Broad inquiry

Hypothesis

Hypothesis

Hypothesis

Research Objectives
The steps you are going to take to test hypothesis

Research Goal (Aim)

Broad statements of desired outcomes
Long-term project outcomes

Example – Equipment Idling Monitoring

Idling causes significant unnecessary emissions.

No practical method to monitor idling (cost, compatibility)

Research Question

How can we monitor the engine idling of construction equipment in an economically-feasible way?



Research Hypothesis

Distinguishable power spectral densities measured non-intrusively exist for the idling engine mode of each piece of construction equipment



Research Objective

Conduct a rigorous experiment to test the hypothesis



Research Goal

Realize the economically feasible sensing of the environmental performance of construction operations, by the detection of the duration of the idling of equipment in use.

Assignment

- Please formulate your research question, hypothesis, objective and long-term goal!
 - Present yours and discuss with peers at the next RM meeting(Mar 26th)
 - Please send to me(ca2435@columbia.edu) by Mar 25th so I can compile yours to one presentation.



Reference

1. The Research Assistant (2012). "The Relationship Between the Research Question, Hypotheses, Specific Aims, and Long-Term Goals of the Project."
<http://www.theresearchassistant.com/tutorial/2-1.asp>
2. Bryman&Bell (2012). "Research Project Guide."
http://www.oup.com/uk/orc/bin/9780199284986/01student/project_guide/project_guide/page_11.htm

