Research Question and Solution Approach
Feedback on motivation, claim

- Tighten, focus
- Be specific
- Logical flow
- Tell a story
Related work and bibliography

Draft due next Wednesday, 10/19
~5-20 references

• Description of prior approaches
  “There has been a significant amount of work on controlling on-screen characters with input modalities such as body movement [], voice [], sketching[], and tangible interfaces[].”

• How your approach is different, novel, better
  “However the use of handheld projectors to augment the immediate physical environment represents a largely different interaction scenario from fixed screen systems.”
Research question

• Focused question describing goals of research
  – Clear, focused, specific
  – Concise
  – Complex

• Example: [http://writingcenter.gmu.edu/resources-template.php?id=59]
  – **Unfocused**: *What is the effect on the environment from global warming?*
  – **Focused**: *How is glacial melting affecting penguins in the Arctic Circle?*
Solution approach

• A plan for how to realize your proposed solution and test your hypothesis
  – Design
  – Implementation
  – Evaluation

• Goal: Answer your research question(s)
Operationalization

**operationalize**

*Define an abstract concept so it can be practically measured by empirical observations*

“Previous studies have operationalized panic in terms of average time of group escape”

[http://oxforddictionaries.com/definition/operationalize]
MotionBeam: Goals
A metaphor for character interaction with handheld projectors

Goals:
• Evaluate feasibility of approach (accuracy, latency)
  ➔ Implement working prototype
• Explore application space
  ➔ Design, implement applications
• Understand usability of system
  ➔ Conduct user study
MotionBeam: Questions, approach

1. Does the amount of projector movement and distortion make the screen difficult to watch?
   → Measure difficulty of watching
2. How do users gesture with the device?
   → Observe users’ gestures, think-aloud
3. At what range do users interact? Why?
   → Measure range
4. What are the participant’s impressions?
   → Ask participants
5. What future studies are needed?
   → Analyze results to derive new questions
Wherabouts Clock: Goals

• General goal:
  – Gain understanding of how location awareness is used in social groups

• Specific goal:
  – Gain understanding of how the Whereabouts Clock is used in families
    ➔ Design and build working prototype
    ➔ Conduct user study
Whereabouts Clock: Questions, approach

• How did participants use the Clock?
  → Logging, interviews (diaries, surveys, observation)

• How did participants feel about being tracked?
  → Interview participants

• How did use of the Clock interleave with activities?
  → Interview participants

• What are the implications for design?
  → Ask participants for criticism, suggestions
Structure of a research paper

- Introduction
- Background, related work
- Solution, implementation
- Methodology, evaluation
- Results
- Discussion
- Conclusion