How to write a Thesis Proposal
Why do it?

• To offer opinions about your hypothesis and experimental design
• Meaningless?
• Required
• Communicating with your mentor so they can direct you.
• Contract between student mentor and committee
• Provides focus and structure in your research
How to prepare

• Meet with your mentor for a general direction of your project
• Read! About your topic for 3 months
  – Take notes, make copies, write summaries
  – See lecture on reading a scientific paper
  – Write down ideas as they come to you, i.e. after reading about or discussing your project with fellow students or other scientists
Pitfalls and Setbacks

• Starting an experiment without planning it properly
• Not keeping adequate records and notes on your methods
• Reading literature without focus and purpose
• No focus
• Hyperfocus
• procrastination
Format

• General objective
• Specific objectives
• Realistic goals (3) (smaller)
• Literature review
  – last 10 years
• Significance of the project
• Experimental objectives
  • Experimental design
  • Statistics
• Expected results
• Budget
• timeline
• Submission to graduate school
Example

- Investigating the expression of genes during infection by *M. grisea*
- Specific objectives
  - Look at genes upregulated during infection using blast and PCR
  - Isolate protoplasts and inject with PCR products to create mutants
  - Infect rice plants with mutants and wild type and assess plant health
- Realistic goals (3) (smaller)
- Literature review
  - last 10 years what is known about this fungus
- Significance of the project (bioterrorism concerns)
- Experimental objectives
  - Experimental design
  - Statistics
- Expected results
- Budget
- Timeline
Example

- Realistic goals (3) (smaller)
- Literature review
  - last 10 years - what is known about this fungus
- Significance of the project (bioterrorism concerns)
- Experimental objectives
  - Experimental design
  - Statistics
- Expected results
- Budget
- timeline
- stat 563
- stat 571
Example

• Budget
  – Petri dishes (fisher) item # page qty
  – Media
  – Instruments
  – Reagents
  – Computer software
  – Photocopyng
  – Incubator
  – Agarose