Understanding

Grad school strategy

The graduate program manual
Getting through - what to do when
Roles of Faculty

Your advisor
Your committee
Graduate Program Director

Working with and learning from your peers
Balance

Coursework, job, thinking, sleep, play, family
Importance & non-importance of grades

TA / RA

Responsibilities, value to you.

Scientific method

Relation of big questions and specific questions
Philosophy of science

Popperian logic and Fisherian statistics
Structure of scientific revolutions (or change)

Data analysis

Graphic exploration
Statistical testing

Experimental design issues

Replication, randomization, pseudoreplication

Achieving deep understanding of a topic

Learning what is known

Foundation

coursework / textbooks

Thorough review of literature

Classics
Cutting edge
Everything in between (reviews useful)

Organizing ideas

Finding the unanswered questions
Framing the big questions
Defining a linear sequence (a story) for presenting
a web of connected ideas.

Ethics in science and academia

Truth and ambition
Credit, citation, and plagiarism
Relations with people

Production
Graphic presentation
data figures
conceptual figures
Written work
Types of written projects
- **Research summary**
- **Review paper**
- **Original research paper**
- **Proposals**
  - *grant proposal*
  - *dissertation proposal*

Organizing a writing project
- **Understanding your topic**
  - *Defining a topic*
  - *Organize literature*
  - *Review literature*
  - *Defining scope and questions*
- **Writing in stages**
  - *Outlines short & long*
  - *Bibliography*
  - *Sections*
- **Separation of creation & critique**
- **Revision & rewriting**

Oral presentation
Own work
- **Research talks**
- **Proposal talks**
Others
- **Lectures**
- **Paper presentations**

Criticism

Oral works

dept seminars
job talks

Written works

Levels of criticism

Ideas & analyses
Structure
Writing

Fixing your own writing

Achieving "distance" from your work.

Critiquing a colleague's writing

Someone you know
Anonymous
Constructive peer reviews

Graphics

Extracting meaning
Improving presentation