

How's it Going?

Good, Good ...

***Practical Tips
for Writing Your Thesis***



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Writing a Thesis is Hard



Writing a Thesis is Hard

- “I am my thesis”
- It is a big, sometimes diffuse project
- Big investment
- Writing is painful
- There are tools available – use them
 - Be strategic
 - Use psychology / motivational tools

Part 1

- **Experience is a Hard Teacher**
- **Mountains and Trails**
- **Making and Taking Small Steps**
- **Work Matrix**
- **Some Warnings**

Part 2

- **Notes to Thesis Writers
(and 10 Year follow-up)**



**Experience is a hard teacher
because you get the test first
and the lesson afterwards.**

*Vernon Law, Pitcher
Pittsburgh Pirates*

*Together we've supervised 65+ students, served on
committees of > 250, & written 2 each of our own
(and given this talk to > 1500 people):*

*There are common challenges, fears, and
accomplishments shared by most students.*

I Like the Smell of the Thesis in the Morning

- **Most useful for those who have been struggling for a while.**
- **“How’s it going?” “Good ...good ...”**
- **Sometime we feel we need to suffer before we deserve help.**
- **Suffering is (mostly) optional.**

Mountains and Trails



Think about your thesis.

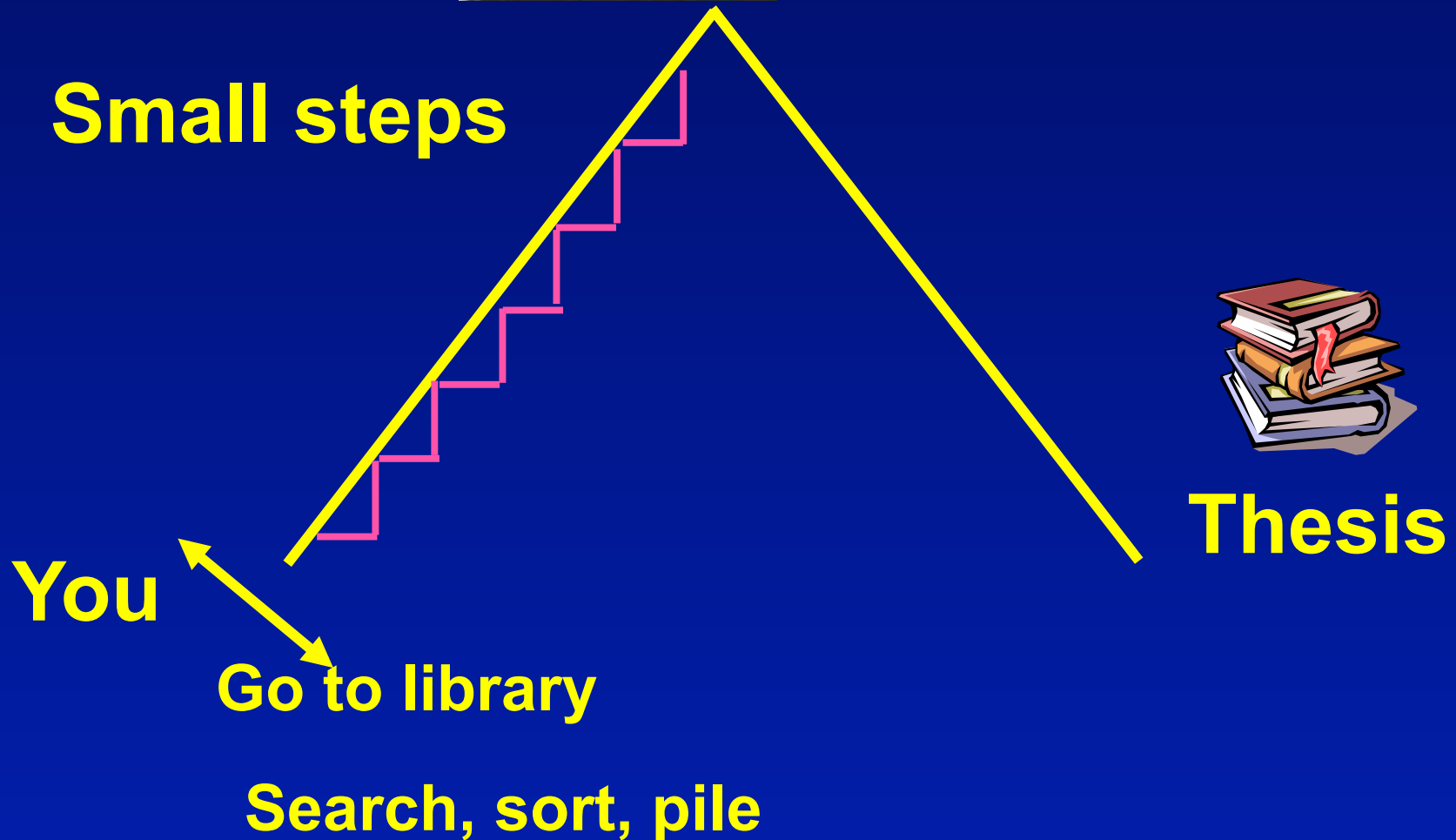
*Most students view their
thesis as an enormous task.*

It is.



**Giant leap to thesis.
Can't do today,
so try tomorrow.**

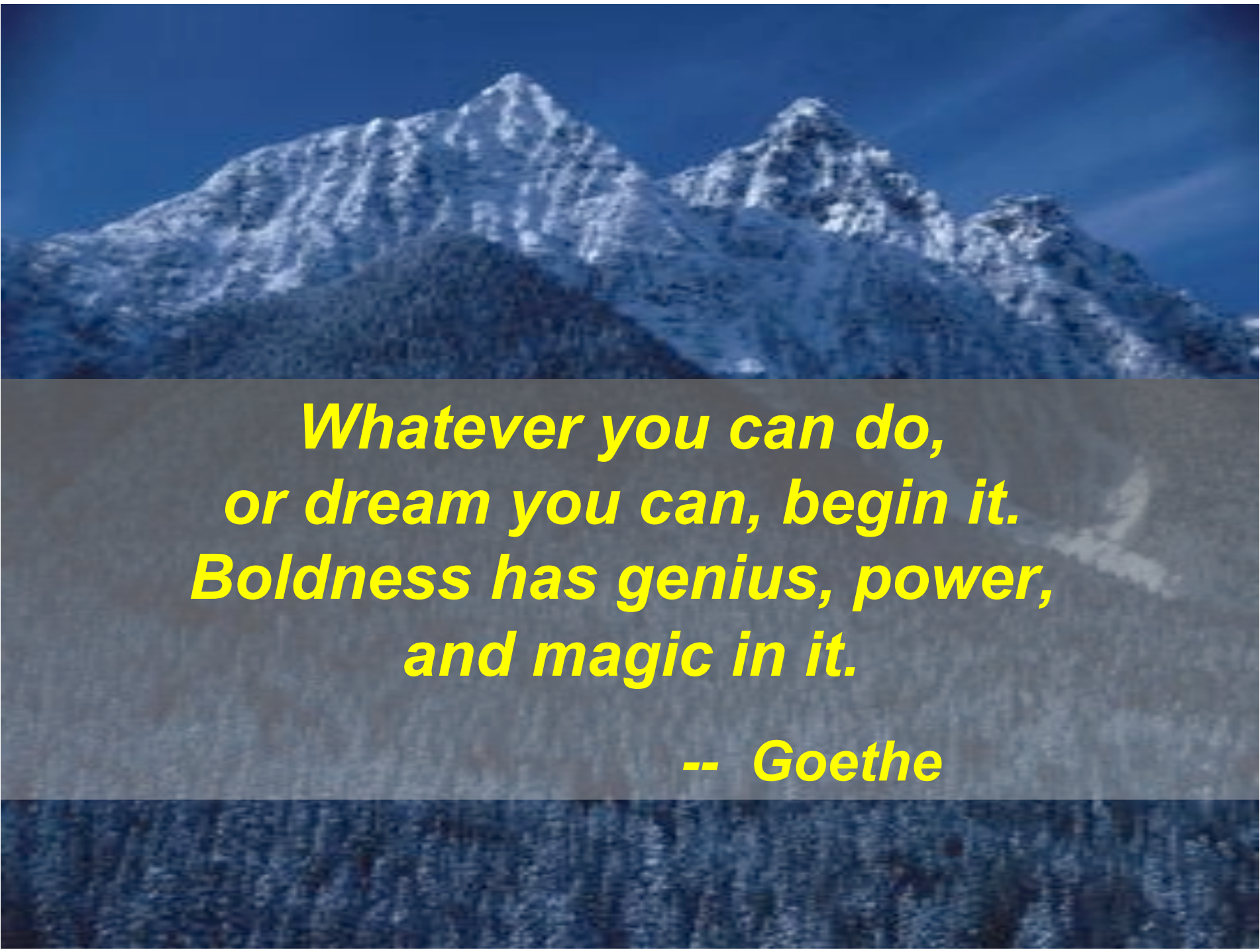
Small steps



Oh, yeah. Which trail should I take?



Go to library
Search, sort, pile



***Whatever you can do,
or dream you can, begin it.
Boldness has genius, power,
and magic in it.***

-- Goethe

Making and Taking Small Steps

Thesis outline - Chapters 1, 2, 3,

- **Title Page**
- **Introduction**
- **Study Area**
- **Material and Methods**
- **Results**
- **Discussion**
- **Literature Cited**

I Said Small Steps

Introduction is not just introduction.

- **Made of 3 or 4 parts.**
- **Intro 1: general context**
- **Intro 2: the issues**
- **Intro 3: specific problems**
- **Intro 4: the roadmap to the chapter or thesis**

Visualize the Small Steps

Results are not just results.

- **Results 1 is figure or figure and table**
- **Results 2 is large table**
- **Results 3 is 2 small tables**
- **Results 4 is figure**

Discussion is

- **Discussion 1, 2, and 3,**

A Tool: the Work Matrix

List these thesis components as rows with the following columns:

- Data collection
- Data entry
- Data analysis
- Words 1 (get *something* down on paper)
- Words 2 (willing to show)
- Words 3 (as good as you'll get it)

Each Cell is a Task

Thesis section	Data collected	Data entered	Data analyzed	Words 1	Words 2	Words 3
Chapter 1						
Intro 1						
Intro 2						
Intro 3						
Study Area						
Methods 1						
Methods 2						
Results 1						
Results 2						
Results 3						
Discussion 1						
Discussion 2						
Discussion 3						

What is Done

Thesis section	Data collected	Data entered	Data analyzed	Words 1	Words 2	Words 3
Chapter 1						
Intro 1	100					
Intro 2	100					
Intro 3	100					
Study Area	90					
Methods 1	100					
Methods 2	100					
Results 1	100					
Results 2	100					
Results 3	20					
Discussion 1						
Discussion 2						
Discussion 3						

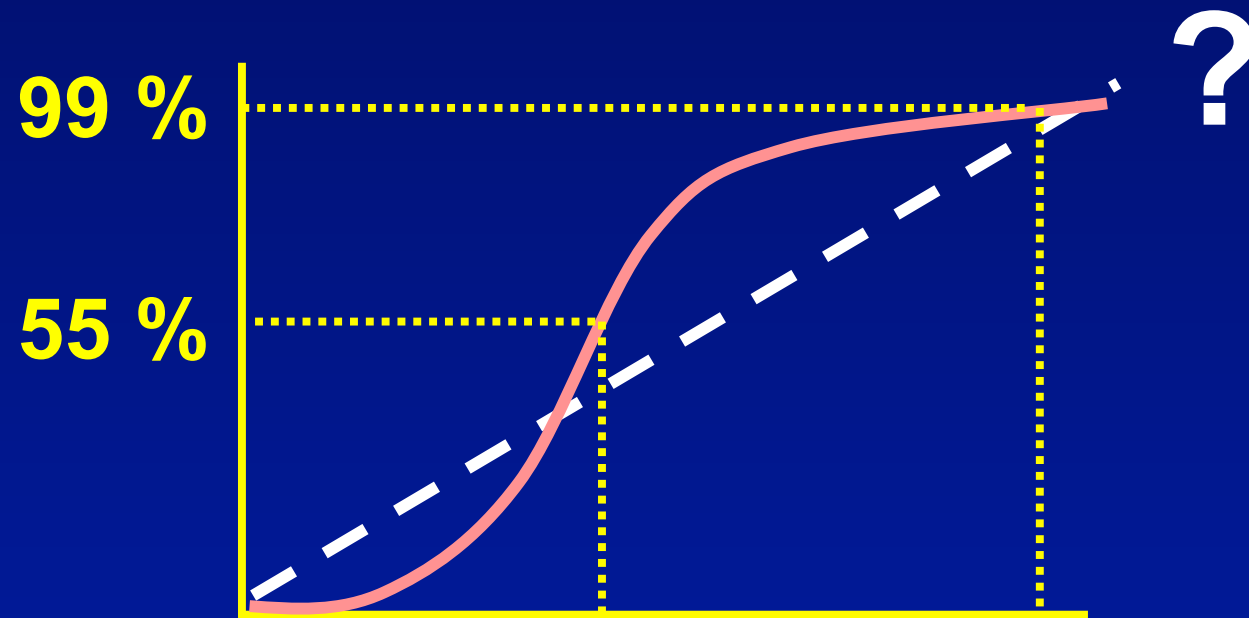
You probably have done more already than you realize ...

Thesis section	Data collected	Data entered	Data analyzed	Words 1	Words 2	Words 3
Chapter 1						
Intro 1	100			80		
Intro 2	100			80		
Intro 3	100			50		
Study Area	90			80		
Methods 1	100			50		
Methods 2	100			0		
Results 1	100	100	90	50		
Results 2	100	100	50	10		
Results 3	20	0	0	0		
Discussion 1				10		
Discussion 2						
Discussion 3						

Words 1 and Perfectionists

- Disconnect your critical voice from your creative voice – separate the *writing* process from the *editing* process. No one will ever see this.
- Don't feel the need to complete sentences and paragraphs at this stage – just get it down.
- Good writing is rewriting.

Percent Understanding



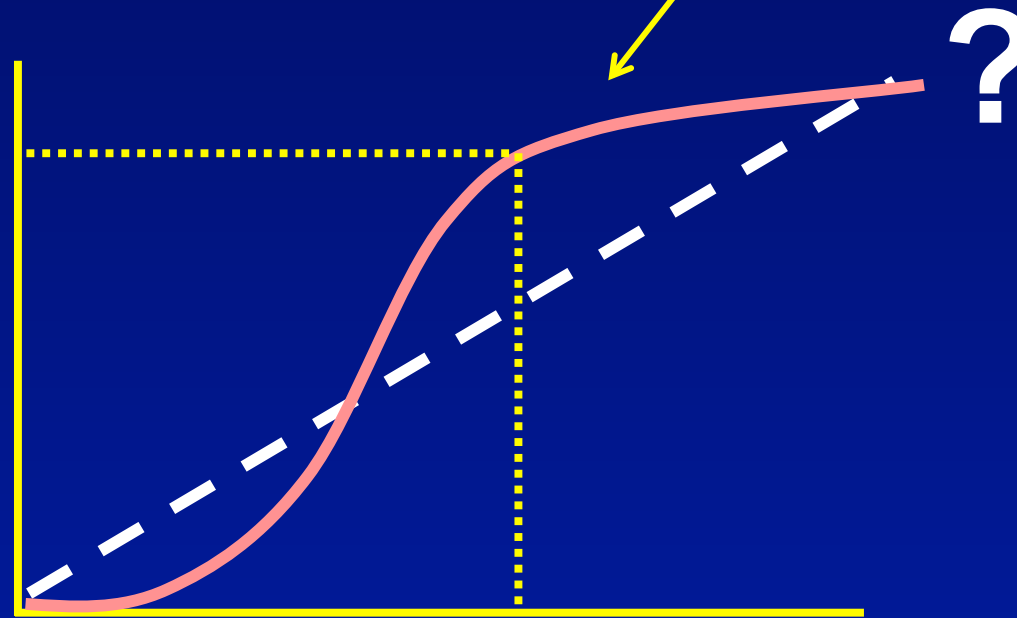
Time Spent Analyzing Data

Percent Understanding

90 %

Address by further
iterations, if necessary

Time Spent Analyzing Data



**Can't judge how far you have
come by looking forward.**



**Turn around and see how far you have come
– the work matrix is a useful tool for this**

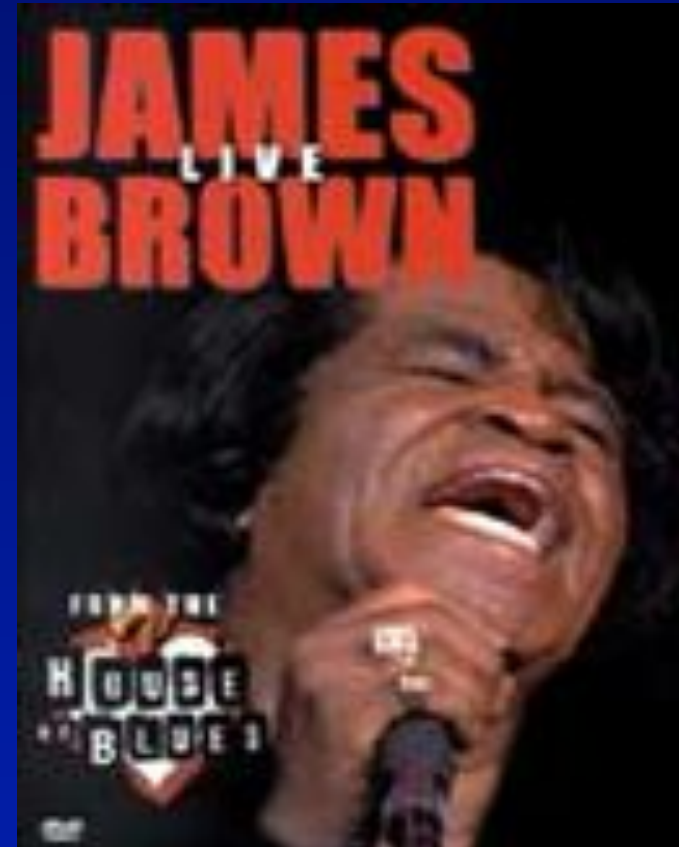


Matching Tasks with Emotions

When you have a cold, enter data.



When you feel *good*, write Discussion 2.



Each Cell is 1 to 4 days of Work

Thesis section	Data collected	Data entered	Data analyzed	Words 1	Words 2	Words 3
Chapter 1						
Intro 1	100			80		
Intro 2	100			80		
Intro 3	100			50		
Study Area	90			80		
Methods 1	100			50		
Methods 2	100			0		
Results 1	100	100	90	50		
Results 2	100	100	50	10		
Results 3	20	0	0	0		
Discussion 1				10		
Discussion 2						
Discussion 3						

Two Warnings

- The Magic Matrix
- The Trap of “Better Than Best”
(or the fallacy of infinitely inflatable expectations)



Estimating time

- Students typically underestimate the amount of time it takes to complete a major task
- Faculty too ...



Your Thesis is a Marathon, Not a Sprint

- Training matters
(analytical tools, basic writing skills, work habits, etc.).
- Planning matters.
- Pacing matters.
- Expect to hit the wall
and plan to get past it.



Work in Context ...

- **Don't work in isolation:
peer support groups**
- **Don't work in isolation:
regular check-in's with supervisor**
- **The “Matt Tutsch” method ...**



Notes On Writing Papers And Theses

based on K. Lertzman Bull. Ecol. Soc. Amer. 1995

- plus a 10-Year Update -



H. C. E. S. C. H. E. R.

- 1. Know your audience and write for that specific audience.**
- 2. Your supervisor/professor is not here to teach you basic grammar and spelling.**
- 3. Do not turn in a first draft!**
- 4. Get and use style books.**
- 5. Avoid passive constructions wherever possible.**
- 6. Avoid abusing word forms.**
- 7. Do not use more words where fewer will do.**
- 8. Use an outline to organize your ideas and writing.**
- 9. Think about the structure of paragraphs.**
- 10. Pay attention to tenses.**

- 11. Captions shouldn't merely name a table or figure, they should explain how to read it.**
- 12. When citing a reference, focus on the ideas not the authors.**
- 13. Show us don't tell us.**
- 14. Write about your results, not your tables, figures, and statistics.**
- 15. Focus on substantive hypotheses, not statistical hypotheses.**
- 16. Develop a strategy for your Discussion.**
- 17. Introductions and conclusions are the hardest parts -- plan on spending a lot of time on them.**
- 18. Break up large projects into small pieces and work on the pieces.**
- 19. Make your writing flow and resonate.**
- 20. Use word processors effectively and back up your work religiously.**
- 21. Take editorial comments seriously.**

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Examples of adjectival nouns and verbs from graduate student papers read in December 1994.

- biogeoclimatic subzone and watershed forest interior objectives
- old growth retention and forest interior Forest Ecosystem Network objectives
- the compositional dynamics focused perspective of traditional gap studies
- suspended sediment increases
- maximum three-week nitrogen concentrations
- water supply concern
- streamwater DOC concentrations
- DOC soil solution concentrations
- maximum floodplain extent
- the most energy favorable den location
- above ground coarse woody debris
- previously designated special habitats for particular species
- time and information constraints
- different width linkages
- riparian linkage boundaries

Use an outline to organize your ideas and writing

Separate the three tasks of:

- 1) figuring out *what* you want to say,
- 2) planning the *order* and *logic* of your arguments, and
- 3) *crafting* the exact language in which you will express your ideas.

Some Additional Thoughts 10 Years Later

- **The hourglass model.**
- **See yourself/your thesis as a participant in a discourse – write papers, not a thesis.**
- **Don't be too scared/picky to ever give up the thesis to your supervisor.**
- **Always start with an idea (papers and talks).**
- **Have Hypotheses, introduce them in the intro, return to them in the discussion.**
- **More on writing mechanics.**

Breadth of Focus



Introduction

Outward Looking
– *defining context*

**Study Site/System
Methods**

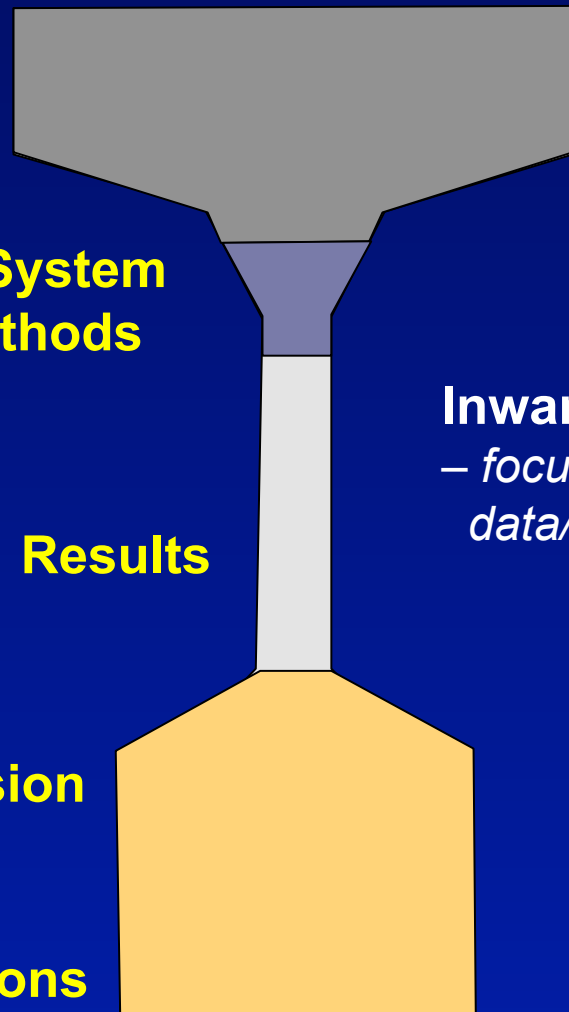
Inward Looking
– *focused on your
data/research*

Results

Discussion

Outward Looking
– *reflecting back
at context*

Conclusions



Introduction

Global Climate Change
Role of Forests
Carbon Sequestration/ Mitigation in the Forest Sector
Current Project (brief, early introduction of focused topic???)
Carbon Sequestration in the Evolution of Forest Management Objectives
Forest Sector Strategies – broad classification
Forest Sector Strategies – scale
Burning of Post-harvest Debris
Landscape vs. Stand-level Analysis
Mitigation Time Frame
Importance of short-/medium-term mitigation strategies
Mitigation vs. Offset
Project specifics (brought/returned to narrow focus)
Introduction to Use of CBM-CFS3

Methods

Study Area
Data
Carbon Budget Model
Parameterization
Analyses

Results

Total Ecosystem Carbon – Burning vs. No Burning
Annual Carbon Flux over Simulation Period
Impact of Separate Components
Subdivision of Effect of Piling & Burning
Sensitivity Analyses
Impacts by stand type stratification?

Discussion

Impact of slash-burning on GHG budget
Contribution to benchmark targets
Mitigation strategy vs. Offset strategy
Sensitivity Analyses
Comparison with other forestry-based mitigation approaches
Value of Operational Scale Strategies
Secondary Effects of Not Burning of Post-harvest Debris
Impact of landscape scale disturbances
Effect of Climate Change
Limitations of research
Future directions/research required
Larger contextual unknowns

Conclusion

Mitigation potential of avoided slash pile burning
Benefit of operational-level, implementable strategies
Necessity for analysis include all costs and benefits
Benefit of non-offset mitigation strategies

Alex Hall 699
Draft Outline

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*** Faculty vary on this.**

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More On Writing Mechanics I

- **Commas & semi colons are often misused.**
- **Crafting paragraph structure is a common problem – think about topic sentences.**
- **Organize the flow of logic using outlines, get approval of the flow of logic at the outline stage, not with rough writing. The “Matt Tutsch” method.**
- **Don’t try and do fancy layout (tables & figures) – especially for drafts.**

More On Writing Mechanics II

- **Shorter is better, but say everything necessary.**
- **Don't combine Results and Discussion.**
- **The Intro and Discussion are bookends that need to function together.**
- **Don't be afraid to "give it away" in the intro – TUWYGTTU & give us a "road map."**
- **In a section or paragraph, don't build to a conclusion, with the punchline at the end, tell us the conclusion, then support it.**

More On Writing Mechanics III

- **Under-referencing is common. Even broad, general, introductory statements need refs.**
- **Most of the time, a summary statement at the end of the paragraph is redundant: focus on topic sentences.**
- **Most of the time, statements at the end of a paragraph that are solely for transition should just be cut.**
- **Writing is a craft that needs ongoing effort and a lifetime of learning.**



H C E S C H E K