

How to Succeed in Academia

Dr. Erika Miller

September 10, 2021



SYSTEMS ENGINEERING
COLORADO STATE UNIVERSITY



The Graduate Student Mindset: Tips for Transitioning and Continued Success



Tips For Success



Use Your Resources [Wisely]



Know Your Program Requirements and Timelines



Be Proactive and Practice Time Management

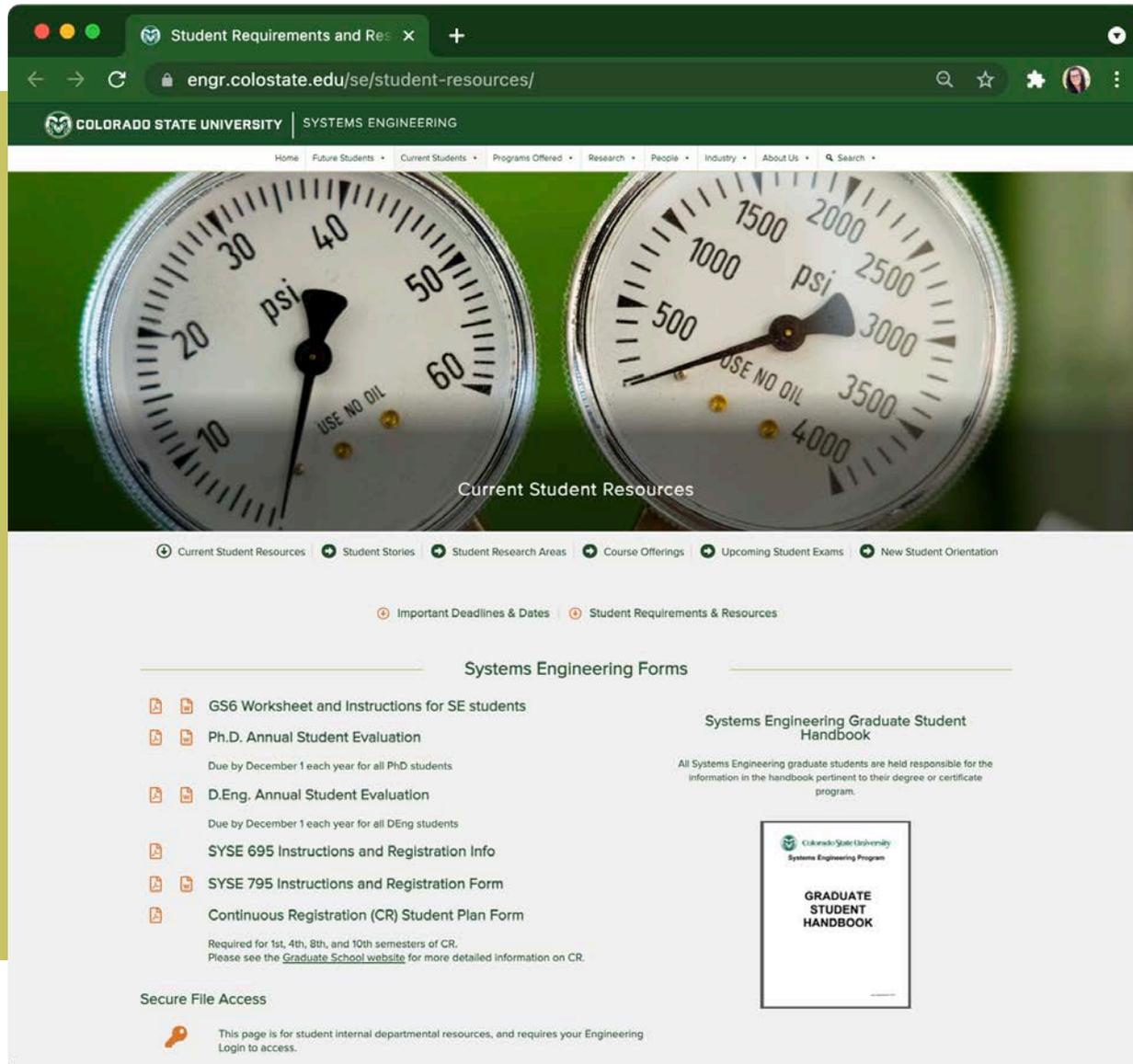


Utilize Your Advisor



Be Passionate About Your Work

Use Your Resources [Wisely]

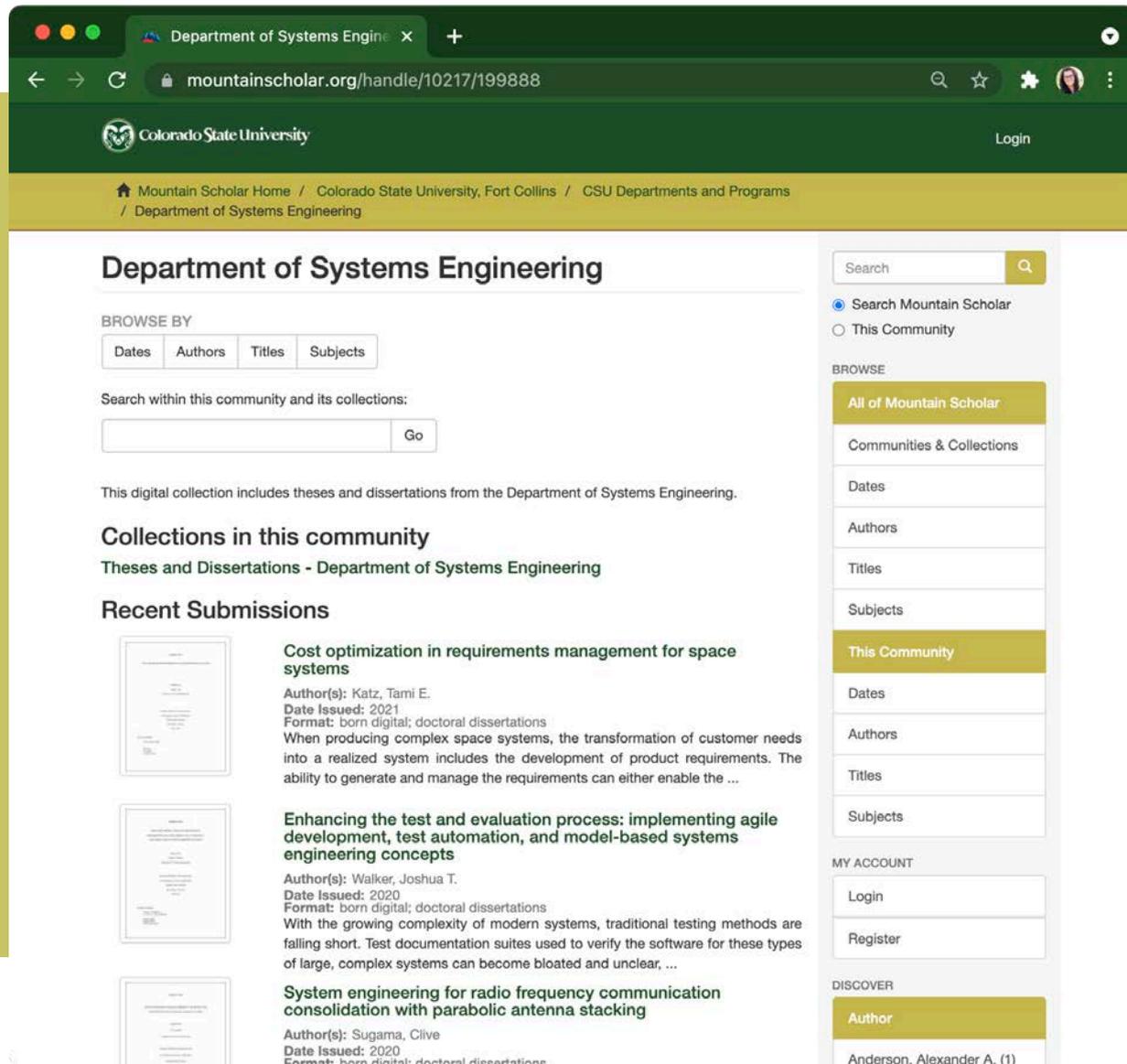


Systems Engineering Website

- Student Resources
 - Student Handbook
 - Secure File Access
 - Forms

<https://www.engr.colostate.edu/se/student-resources/>

Use Your Resources [Wisely]



The screenshot shows a web browser window with the URL mountainscholar.org/handle/10217/199888. The page is titled "Department of Systems Engineering" and features a search bar, navigation tabs for "All of Mountain Scholar", "Communities & Collections", "Dates", "Authors", "Titles", and "Subjects", and a "MY ACCOUNT" section with "Login" and "Register" buttons. The main content area displays "Recent Submissions" with three entries:

- Cost optimization in requirements management for space systems**
Author(s): Katz, Tami E.
Date Issued: 2021
Format: born digital; doctoral dissertations
When producing complex space systems, the transformation of customer needs into a realized system includes the development of product requirements. The ability to generate and manage the requirements can either enable the ...
- Enhancing the test and evaluation process: implementing agile development, test automation, and model-based systems engineering concepts**
Author(s): Walker, Joshua T.
Date Issued: 2020
Format: born digital; doctoral dissertations
With the growing complexity of modern systems, traditional testing methods are falling short. Test documentation suites used to verify the software for these types of large, complex systems can become bloated and unclear, ...
- System engineering for radio frequency communication consolidation with parabolic antenna stacking**
Author(s): Sugama, Clive
Date Issued: 2020
Format: born digital; doctoral dissertations

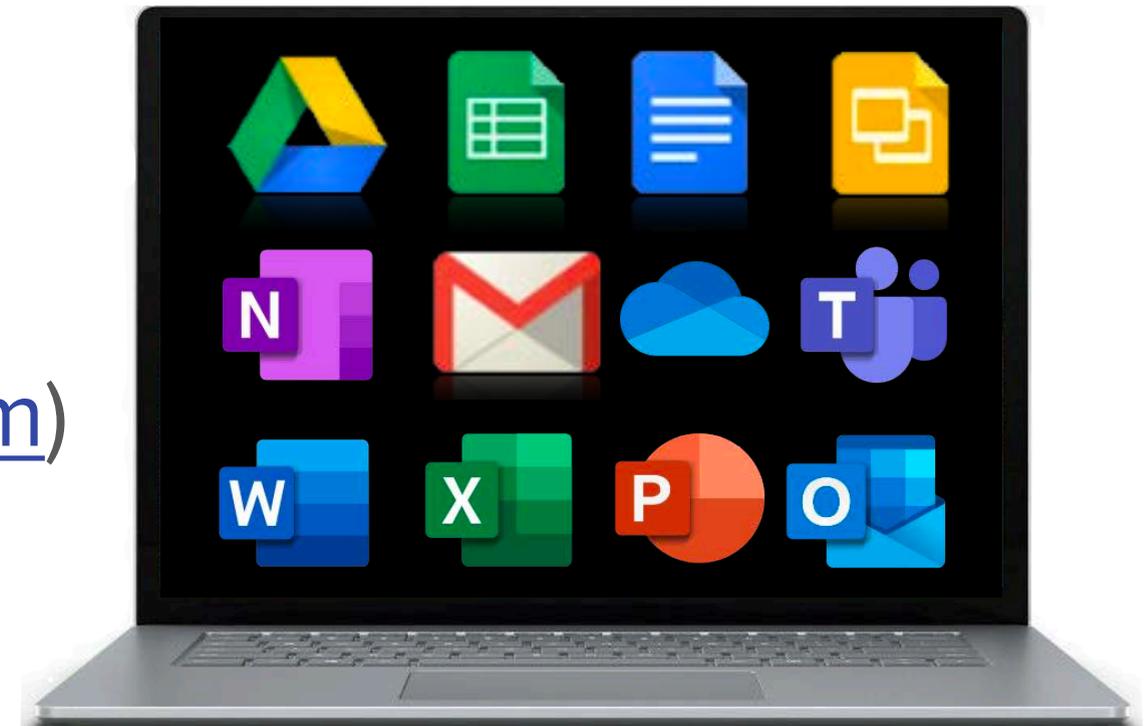
Mountain Scholar

- Theses and Dissertations of Past Students [in Department]

<https://mountainscholar.org/handle/10217/199888>

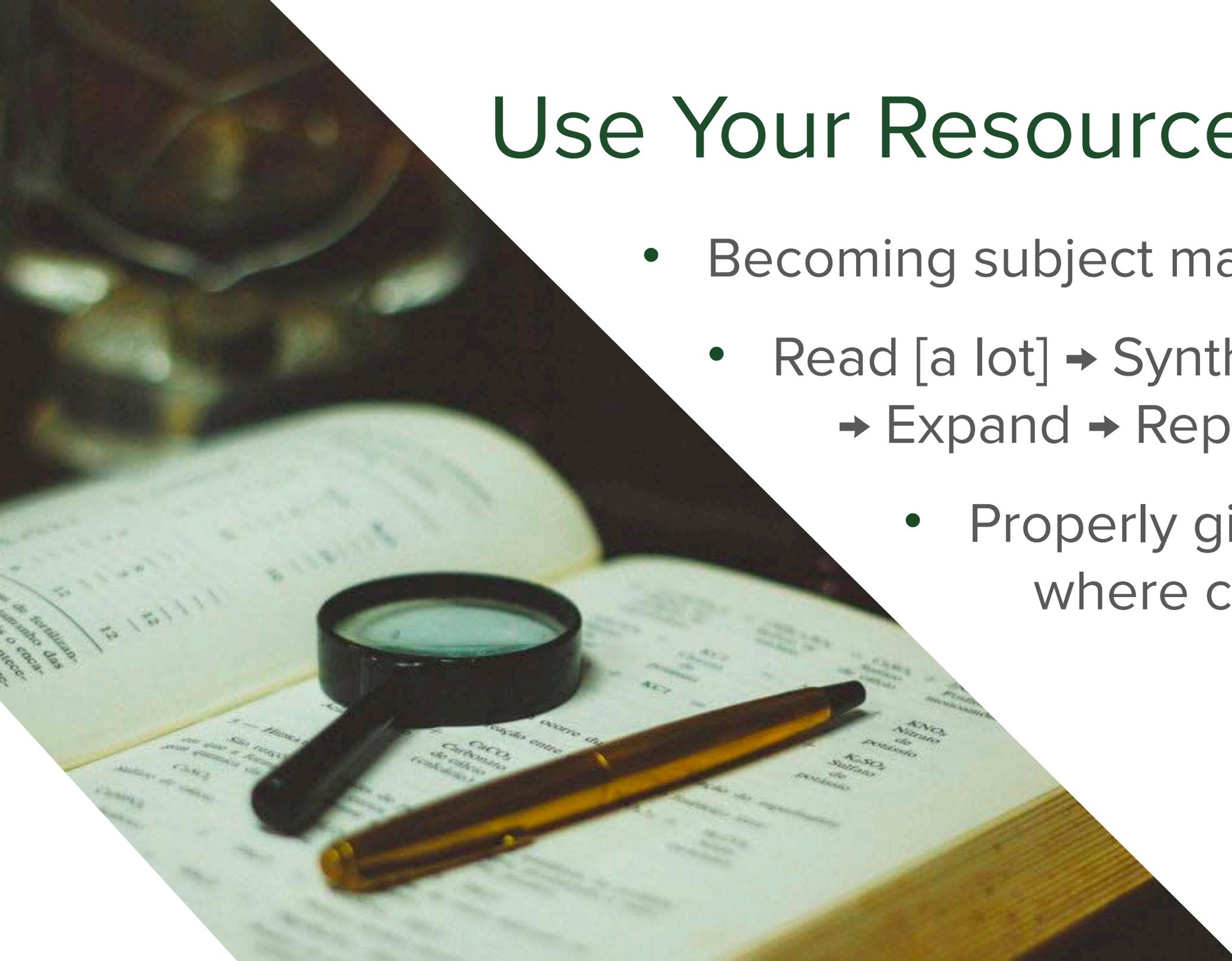
Use Your Resources [Wisely]

- Cloud Storage and Collaborative Documents
 - <https://www.acns.colostate.edu/email-accounts/>
- Use your eid@colostate.edu for Office365 Products
- Use your eid@rams.colostate.edu for Google Apps
 - Google Drive (drive.google.com)
 - Google Docs, Sheets, Etc.

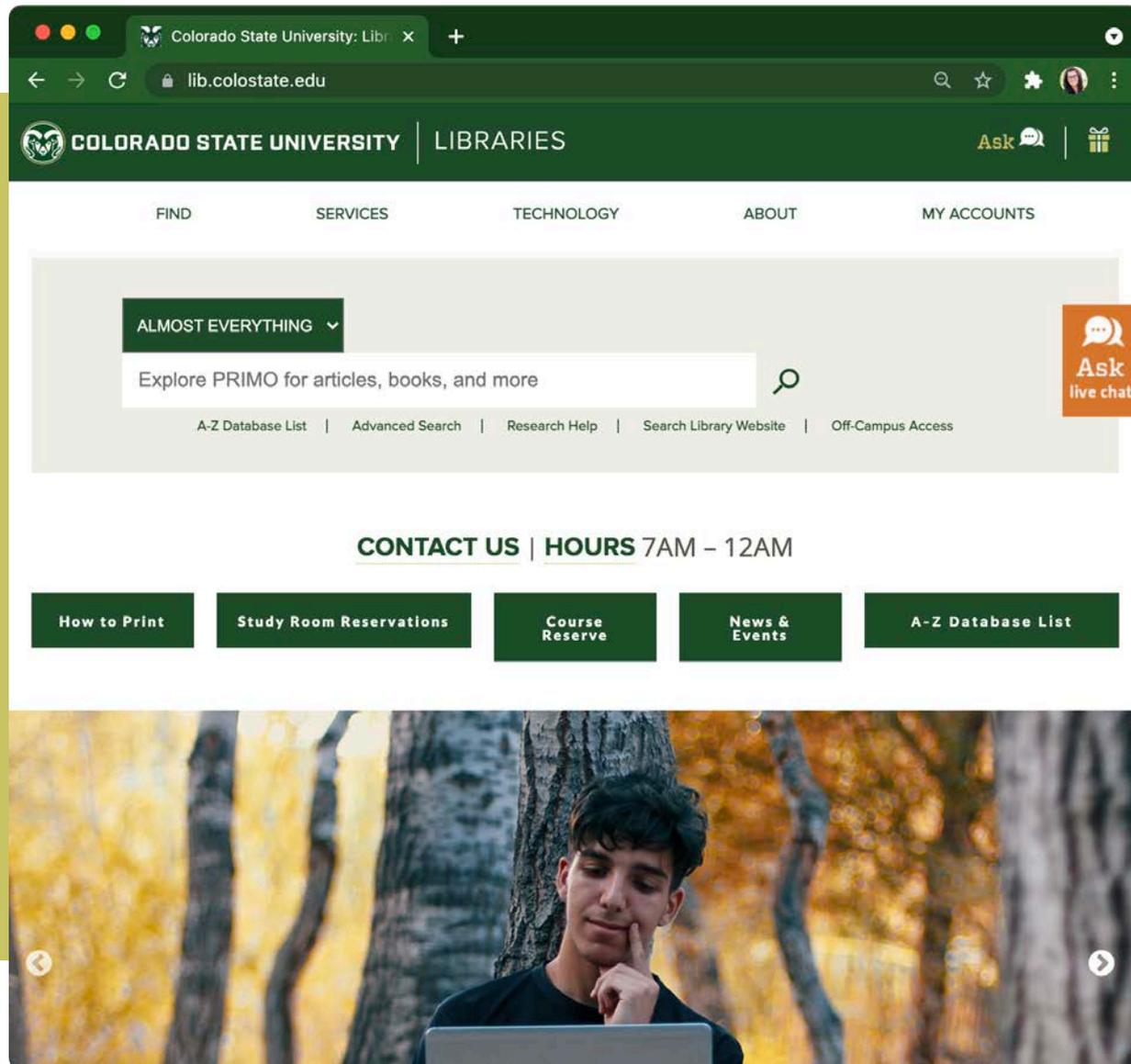


Use Your Resources [Wisely]

- Becoming subject matter experts
 - Read [a lot] → Synthesize → Inquire → Expand → Repeat
 - Properly give credit to where credit is due



Use Your Resources [Wisely]



CSU Library

- Off-campus access
- ebooks, journals, etc.
- <https://lib.colostate.edu/>

Google Scholar

- Search for scholarly literature
- <https://scholar.google.com/>

Use Your Resources [Wisely]

Previous studies have examined driving behaviors under manual, semi-automated, and highly automated driving conditions. The effectiveness of semi-automated systems, such as adaptive cruise control (ACC), has not always been consistent. Some studies show that situation awareness (Ma & Kaber, 2005) and detection accuracy (Funke, Matthews, Warm, & Emo, 2007) increase (i.e., better performance) for drivers when ACC is engaged (DeWinter, Happee, Martens, & Stanton, 2014). However, Rudin-Brown and Parker (2004) found that ACC increased response time to a hazard detection task (i.e., worse performance). In general, these studies suggest that the presence of ACC may alleviate some of the demands of the driving task but that drivers may also offset the positive performance increase with more secondary task engagement.

Synthesizing Literature

- In your own words, provide some context for the forthcoming references

Use Your Resources [Wisely]

Previous studies have examined driving behaviors under manual, semi-automated, and highly automated driving conditions. The effectiveness of semi-automated systems, such as adaptive cruise control (ACC), has not always been consistent. Some studies show that situation awareness (Ma & Kaber, 2005) and detection accuracy (Funke, Matthews, Warm, & Emo, 2007) increase (i.e., better performance) for drivers when ACC is engaged (DeWinter, Happee, Martens, & Stanton, 2014). However, Rudin-Brown and Parker (2004) found that ACC increased response time to a hazard detection task (i.e., worse performance). In general, these studies suggest that the presence of ACC may alleviate some of the demands of the driving task but that drivers may also offset the positive performance increase with more secondary task engagement.

- “The plot reveals that, on average, drivers exhibited better SA when the ACC control was active.” (Ma & Kaber, 2005)
- “A simulator study by Ma and Kaber (2005) found higher scores on SAGAT queries for ACC driving than for manual driving:” (DeWinter et al, 2014)
- “The influence of vehicle automation, compared with free driving, showed... enhanced driver attention (as indicated by detection of secondary task stimuli).” (Funke et al, 2007)
- “In a driving simulator study by Funke et al. (2007), participants driving with ACC detected significantly more pedestrians... than participants driving manually.” (DeWinter et al, 2014)

Use Your Resources [Wisely]

Previous studies have examined driving behaviors under manual, semi-automated, and highly automated driving conditions. The effectiveness of semi-automated systems, such as adaptive cruise control (ACC), has not always been consistent. Some studies show that situation awareness (Ma & Kaber, 2005) and detection accuracy (Funke, Matthews, Warm, & Emo, 2007) increase (i.e., better performance) for drivers when ACC is engaged (DeWinter, Happee, Martens, & Stanton, 2014). However, Rudin-Brown and Parker (2004) found that ACC increased response time to a hazard detection task (i.e., worse performance). In general, these studies suggest that the presence of ACC may alleviate some of the demands of the driving task but that drivers may also offset the positive performance increase with more secondary task engagement.

- “Compared to driving unsupported, participants located significantly more items per minute on a secondary task when using ACC, while their response times to a hazard detection task increased.” (Rudin-Brown & Parker, 2004)

Use Your Resources [Wisely]

Previous studies have examined driving behaviors under manual, semi-automated, and highly automated driving conditions. The effectiveness of semi-automated systems, such as adaptive cruise control (ACC), has not always been consistent. Some studies show that situation awareness (Ma & Kaber, 2005) and detection accuracy (Funke, Matthews, Warm, & Emo, 2007) increase (i.e., better performance) for drivers when ACC is engaged (DeWinter, Happee, Martens, & Stanton, 2014). However, Rudin-Brown and Parker (2004) found that ACC increased response time to a hazard detection task (i.e., worse performance). [In general, these studies suggest that the presence of ACC may alleviate some of the demands of the driving task but that drivers may also offset the positive performance increase with more secondary task engagement.]

Synthesizing Literature

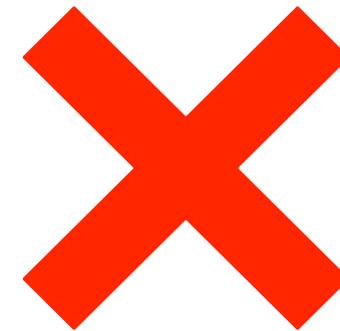
- In your own words, explain why it matters and relate back to your overall objective

Use Your Resources [Wisely]

“Drivers exhibit better SA when ACC control is active” (Ma & Kaber, 2005). This was evaluated by “higher scores on SAGAT queries for ACC driving than for manual” (DeWinter et al, 2014). “Vehicle automation, compared with free driving, shows enhanced driver attention (as indicated by detection of secondary task stimuli)” (Funke et al, 2007). “Participants driving with ACC detected significantly more pedestrians than participants driving manually” (DeWinter et al, 2014). “Compared to driving unsupported, participants located significantly more items per minute on a secondary task when using ACC, while their response times to a hazard detection task increased” (Rudin-Brown & Parker, 2004).

Synthesizing Literature

- What not to do...
 - Direct quotes, little to no original work

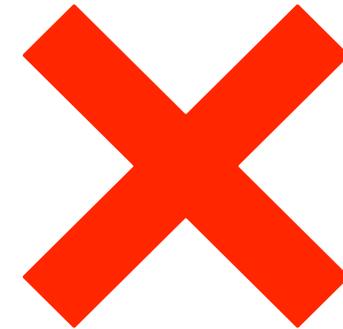


Use Your Resources [Wisely]

I reviewed some books and websites. Researchers have studied how vehicle automation impacts driving behavior. Some research shows automation improves driving behavior, while others show that automation has an adverse effect on driver behavior.

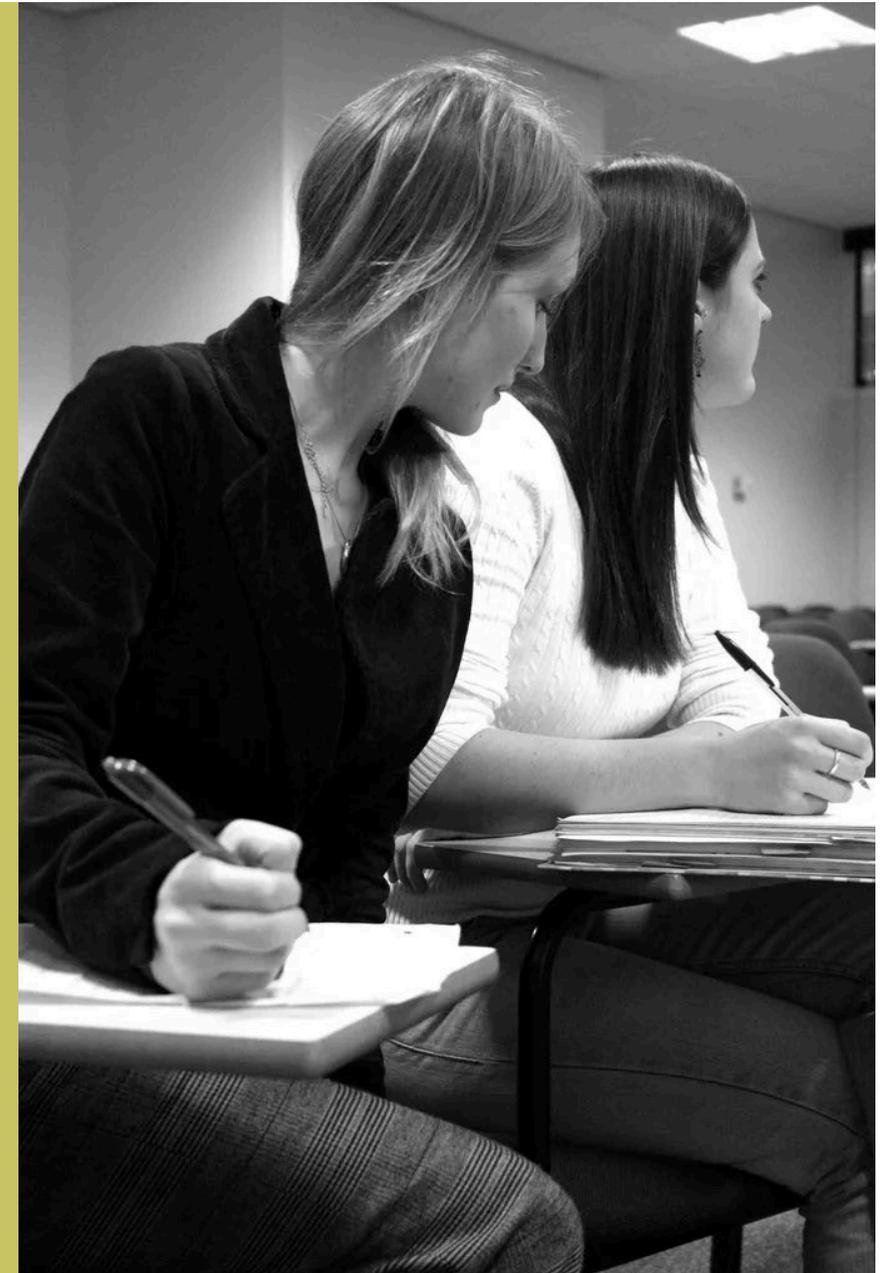
Synthesizing Literature

- What not to do...
 - Too vague of a description of related work



**Academic Integrity
& Plagiarism:**
Claiming someone
else's work/
intellectual property
as your own

No
distinction
in sanctions
about
plagiarism
(accidental
vs. non)





Cheating: using unauthorized sources of information and providing or receiving unauthorized assistance on any form of academic work.



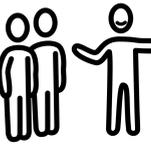
Plagiarism: copying of language, structure, ideas, or thoughts of another, and representing them as one's own without proper acknowledgment.



Unauthorized Possession of Academic Materials: selling, purchasing, or stealing examinations or other academic work; using information from or possessing exams that an instructor did not authorize for release to students.



Falsification: any untruth, either verbal or written, in one's academic work.



Facilitation: knowingly assisting another to commit an act of academic misconduct.



Online Solution/Tutor Sites: any use of banned solution/tutor websites or their content for the reference, completion, or posting to of any graded content; websites include, but not limited to, Chegg, NoteHall, Quizlet, Koofers.

Use Your Resources [Wisely]

The screenshot shows the Turnitin Feedback Studio interface. The main window displays a student's paper titled "Goliath of the Sea" by Katherine Boyd. The paper text is highlighted with numbered markers (1-5) indicating areas of concern. A sidebar on the right shows a "Match Overview" with a total match percentage of 57%. Below this, a list of sources is shown with their respective match percentages: 1. www.scribd.com (36%), 2. englishclassrdc.blogspot... (6%), 3. en.wikipedia.org (6%), 4. mylittlehistorybook1.bl... (4%), and 5. animals-partner.blogspot... (4%). The interface also includes a "Text-only Report" button, a "High Resolution" toggle, and a search bar.

feedback studio Katherine Boyd Goliath of the Sea

1 The blue whale's common name derives from bluish-hue that covers the upper side of it body, while its Latin designation is Balaenoptera musculus (Montgomery, 2001). The blue whale belongs to the Mysticeti suborder of cetaceans, also known as baleen whales, which means they have fringed plates of fingernail-like material, called baleen, attached to their upper jaws. Blue whales feed almost exclusively on krill, though they also take small numbers of copepods. An adult blue whale can eat up to 40 million krill in a day.

2

3

4

5

These gargantuan beasts used to dominate all the oceans of the Earth up until the late nineteenth century, when the technology was developed to effectively hunt and harvest them (Holloway, 2007). In 1864, the Norwegian Svend Foyn equipped a steamboat with harpoons specifically designed for catching large whales. This led to the killing of hundreds of thousands of whales up until 1966, when the International Whaling Commission banned the practice.

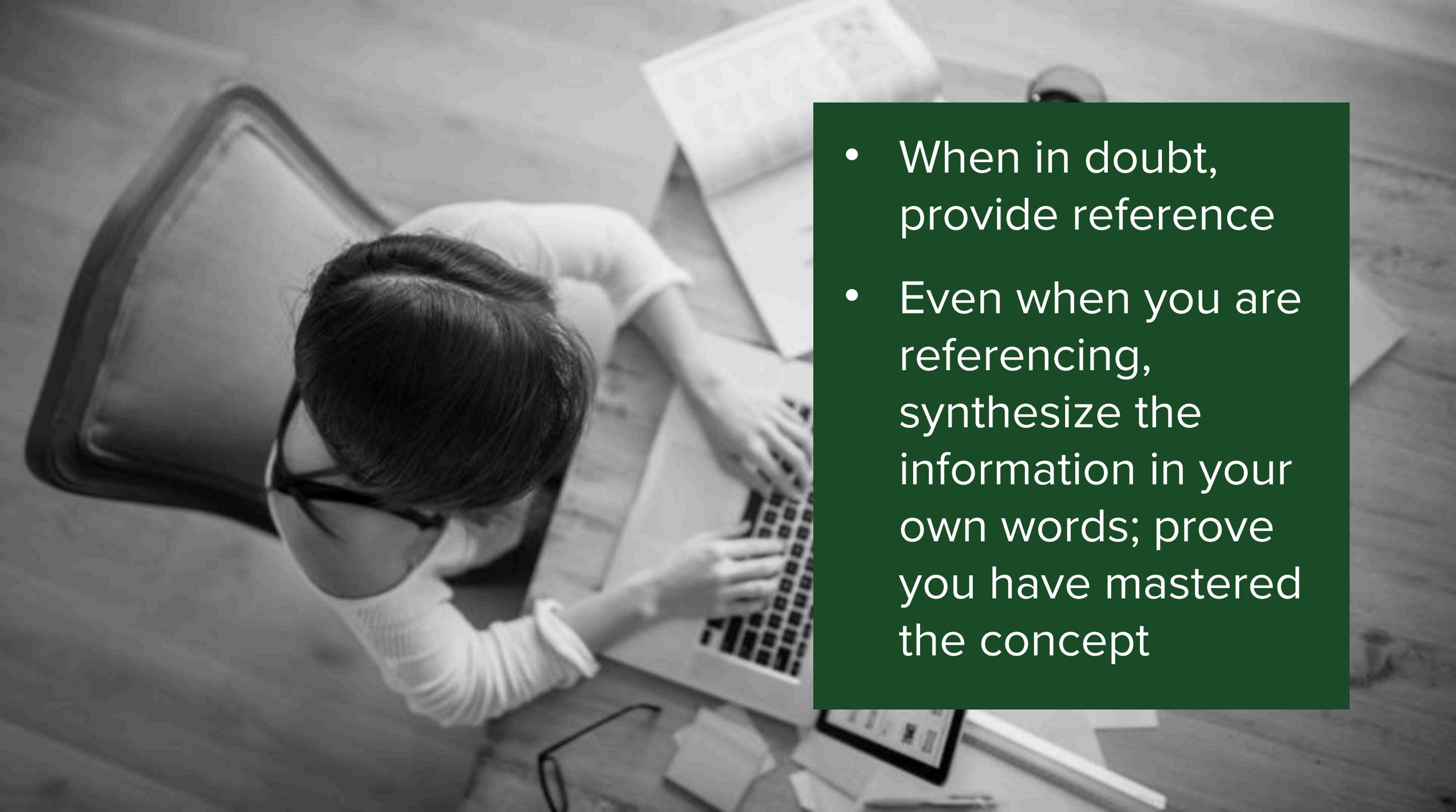
Match Overview

57%

1	www.scribd.com	36%
2	englishclassrdc.blogspot...	6%
3	en.wikipedia.org	6%
4	mylittlehistorybook1.bl...	4%
5	animals-partner.blogspot...	4%

Page: 1 of 2 Word Count: 313 Text-only Report High Resolution On

- Not as hard to catch as you may think
- Canvas enabled TurnItIn on exams and assignments
- We each have a unique writing style

- 
- When in doubt, provide reference
 - Even when you are referencing, synthesize the information in your own words; prove you have mastered the concept

Know Your Program Requirements and Timelines

- “Systems Engineering Graduate Student Handbook”
- Emails from grad student advisor (Ingrid Bridge)
- Ask your advisor



Be Proactive & Practice Time Management

- Take responsibility for your graduate school experience
 - Know what's flexible (course selection, method of research), and what is not (due dates, forms, assignments)
- Eliminate the anxiety of creeping deadlines
 - Create self-imposed deadlines for progress
- Know that there is a reason for the deadline
 - Requirement by graduate school, course integrity, respectful of others' time, etc.

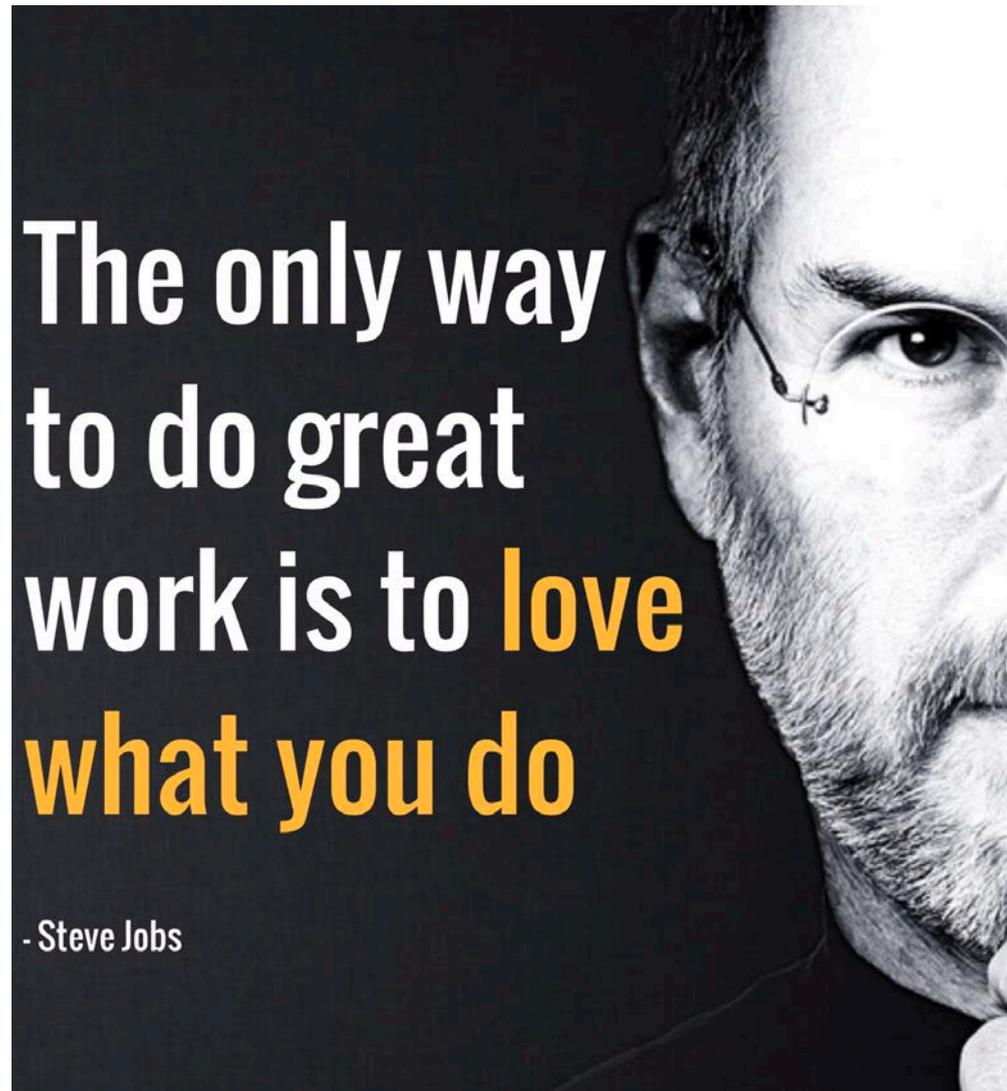


Utilize Your Advisor

- Your advisor is called an advisor for a reason
 - Courses, Research, Technical, Requirements, Life
- MS, PhD, DEng students have a faculty advisor
 - Set up reoccurring meetings
- All graduate students (ME, MS, PhD, DEng) have Ingrid Bridge



Be Passionate About Your Work



- Research is hard and takes time
 - You're going to spend a lot of time and effort on the topic, do yourself a favor
- There's no "cookie-cutter" template or linear process to follow
- Listen to your advisor, but chose a topic you want to be an expert in



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Utilize Your Advisor



Be Passionate About Your Work

Connecting the Dots: Student Success in Systems Engineering

Fall 2021 Lecture
Series



SYSTEMS ENGINEERING
COLORADO STATE UNIVERSITY

How to Succeed in Academia

Dr. Erika Miller

Friday, September 10, 2021

12:00 p.m. - 1:00 p.m. MT

Zoom

Ph.D. Intensive Writing

Dr. Steve Conrad

Friday, October 8, 2021

12:00 p.m. - 1:00 p.m. MT

Zoom

How to be an Academic Writer

Dr. Steve Conrad

Friday, September 24, 2021

12:00 p.m. - 1:00 p.m. MT

Zoom

What is Systems Engineering?

Dr. Tom Bradley

Friday, October 22, 2021

12:00 p.m. - 1:00 p.m. MT

Zoom

Thank you! Questions?



SYSTEMS ENGINEERING
COLORADO STATE UNIVERSITY