Capstone!

Coping with information overload

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Q All   Images   News   Sho

About 1,680,000 results (0.51 se

Today's class

What do you need in your literature review?

- Books/book chapters
- Market research reports
- Standards
- Patents
- Writing
- Citation

Ancient academic proverb:

"Two hours in the library will save you two weeks in the lab"

Survey: How "up to speed" are you on your topic?

How to get up to speed?

Concussion and Vital Signs Monitoring Wearable Technology

"The objective of the project will be to design and prototype an easy to use headband that can wirelessly monitor EEG using dry electrodes, heart rate using PPG, and motion using an accelerometer."

Terms to search:

- Concussions
- Helmets / "smart" helmets
- EEG

Reputable book/book chapter sources:

Knovel
SpringerLink
AccessEngineering
Library Catalogue

Journal article/Conference paper

- Structured reports that document the creation of new knowledge
- Journals: peer reviewed, polished.
  - Results SHOULD be reproducable
- Conference papers: preliminary results. Less opportunity to revise
- Include literature reviews but provide limited background information
- Gain insight on relevant methodology, data.

Sources for articles/conference papers

ASME (American Society for Mechanical Engineers)

Springer

Science Direct

IEEE

Web of Science

What's the market demand?

- Financial information on the industry
- Which companies have market share?

[Frost and Sullivan](#) reports

Let's get technical: Standards!

What is a standard?

Standards provide a commonly accepted authority for the design and function of all types of equipment.

- Electrical plugs
- Medical/safety equipment (helmets, prosthetics)
- Wireless protocols

Standards database: Techstreet

Question: "*I would like to get access to the European Standard EN 14872: Bicycles – Accessories for bicycles – Luggage carriers. can you help?*"

Response: Showed the library guide for mechatronic and the standards guide. We found the resource through techstreet but sfu library isn't subscribed to this resource. I wasn't sure if interlibrary loan would work so I suggested we could contact Holly about how they could gain access to the resource. But the students have a tight deadline and couldn't wait for next week and decided to use other standards

Don't be this person

How to get a standard?

Ask me

ONE or TWO WEEKS IN ADVANCE

Let's get legal: patents!

Patents protect inventors from making, using, selling, or importing copies of their invention, for a limited time.

Rights granted by a patent office are specific to a geographical area.

Patents contain descriptive and useful technical information (including drawings or diagrams) that may not be found elsewhere. They also cite references that can serve as additional sources of information.

Canadian Intellectual Property Office

Basic Search: Patent Database

Search by name, number, keyword

Building YOUR authority: citation conventions

Your reference list = your community.

NOT random ("I need 5 sources zzzzz") but chosen!

You: "These are the smart people whose work I'm building on"

IEEE style: in-text

[1]

Creativity has been championed as integral to successful engineering design, since it embodies the fundamental spirit of engineers to create something new and valuable [1] and is seen as the core of product innovation [2]. As a whole, the engineering discipline focuses on developing innovative solutions to problems that span across technical, societal, and global contexts [3] due to the positive impacts on the economy [4]. From a practical standpoint, creativity can improve design outcomes [5], and thus, enhance the design process. As part of this effort, the concept generation and concept selection stages have received a wealth of attention in design research for their tremendous ability to influence the creativity of design outcomes.

C. Toh and S. R. Miller, "Does the Preferences for Creativity Scale Predict Engineering Students' Ability to Generate and Select Creative Design Alternatives?," *Journal of Mechanical Design*, vol. 141, no. 6, Apr. 2019, doi: 10.1115/1.4042154.

Sample IEEE References

Book--Single Author

[1] W. K. Chen, *Linear Networks and Systems*. Belmont, CA: Wadsworth Press, 2003.

Selection in an Edited Book

[3] E. D. Lipson and B. D. Horwitz, "Photosensory reception and transduction," in *Sensory Receptors and Signal Transduction*, J. L. Spudich and B. H. Satir, Eds. New York: Wiley-Liss, 2001, pp-1-64.
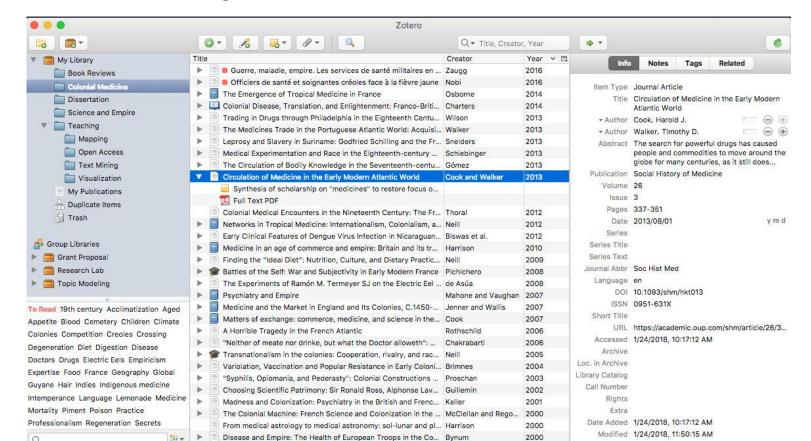
Paper Published in Conference Proceedings

[12] J. Smith, R. Jones, and K. Trello, "Adaptive filtering in data communications with self improved error reference," In Proc. IEEE International Conference on Wireless Communications '04, 2004, pp. 65-68.

Article in Professional Journal (paginated by issue)

[9] J. Attapangittya, "Social studies in gibberish," *Quarterly Review of Doublespeak*, vol. 20, no. 1, pp. 9-10, 2003.

Citation Management: Zotero

Where to incorporate your research?

Coming soon: requirements for your technical report

- Every technical report has a section where background information is provided
- Rationale, prior work, methodology justified

Next steps

Do you need more support in…

- Research strategy?
- Citation management
- Writing?
- Other?

Questions?

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