Literature Review: Conducting the Literature Search

Presentation by Andrea Harland,

Reference Librarian for Engineering

andrea.harland@concordia.ca

What we will be convering

- The literature review
- Tools for doing your literature search
  - Literature databases
  - RefWorks
- Search strategies
- Locating the information
- Getting help

The literature review

- "a literature review surveys scholarly articles, books and other sources (e.g. dissertations, conference proceedings) relevant to a particular issue, area of research, or theory, providing a description, summary, and critical evaluation of each work. The purpose of a literature review is to offer an overview of significant literature published on a topic."
  - http://library.concordia.ca/help/howto/litreview.php
- Helpful sources for writing literature reviews:
  - http://library.concordia.ca/research/subjects/techwriting/engineeringwriting.php

Why do a literature review?

- To become more knowledgeable
- Demonstrate your knowledge
- Identify key researchers
- Identify key publications
- Identify key methodologies
- Identify holes in knowledge
- Identify keywords/subject vocabulary
- Helps to delimit the research problem
- Avoid areas already investigated

Justus J. Randolph. "A Guide to Writing the Dissertation Literature Review" *Practical Assessment, Research & Evaluation* 14.13, 2009.

TABLE OF CONTENTS

Wang, Wenping. "A Study of Force-Motion and Vibration Transmission Properties of Seated Body Under Vertical Vibration and Effects of Sitting Posture." Concordia University (Canada), 2007.

Table 1.1: Summary of experimental conditions employed in different studies.

Authors	Subject			Excitation			Reported Functions
	Number and gender	Body mass (kg)	Posture	Type	Level	Frequency Range(Hz)	
Coermann (1960)[22]	8 males	70-99	Standing, sitting with feet not supported, no backrest	Sine	0.1, 0.2 and 0.3g	1-20	DPMI and STHT
Vogt et al., (1969)[24]	10 males	79(mean)	Erect sitting, loosely restrained, feet supported, but not vibrated	Sine	0.5g with increased gravity of 1, 2 and 3g	2-15	DPMI, STHT
Suggs et al., (1970)[25]	11 males	58-90	Sitting upright with hands in lap, feet supported, no backrest	Sine	0.10g peak to peak	1.75-10	DPMI
Miwa (1974)[23]	5 males	50-76	Standing; kneeling;sitting erect and relaxed, feet not vibrated	Sine	0.1g r.m.s	3-200	DPMI
Griffin (1975)[26]	12 males	60-88	No backrest	Sine	0.2-0.4m s^{-2} r.m.s	7-75	STHT
Cohen et al., (1977)[27]	6 males	55-82	Comfortable neutral sitting posture; Tractor non-cushioned seat; no backrest	Sine	0.69 ms^{-2} r.m.s	2.5-5	STHT
Mertens (1978)[28]	6 males 3 females	57-90	Upright sitting with feet not supported	Sine	0.4g r.m.s with increased gravity of 1,2, 3 and 4g	2-20	DPMI STHT
Griffin et al., (1978)[29]	56 males 28 females 28 children	Not stated	Sitting, increasing height of footrest, no backrest	Sine	1 ms^{-2} r.m.s	4 and 16	STHT
Griffin et al., (1979)[30]	18 males 18 females	Not stated	Comfortable; upright; relaxed; stiff, Increasing height of footrest, no backrest	Sine	1 ms^{-2} r.m.s	1-100	STHT

Wang, Wenping. "A Study of Force-Motion and Vibration Transmission Properties of Seated Body Under Vertical Vibration and Effects of Sitting Posture." Concordia University (Canada), 2007.

REFERENCES

1. Griffin, M.J., 1990. Handbook of Human Vibration, Academic Press Limited, London.

2. Seidel, H., 2005. On the relationship between whole-body vibration exposure and spinal health risk. Industrial Health, 43, 361-377.

3. Seidel, H., Blüthner R., Hinz B., Schust, M., 1998. On the health risk of the lumbar spine due to whole-body vibration — theoretical approach, experimental data and evaluation of whole-body vibration, Journal of Sound and Vibration 215 (4), 723-741.

4. Bovenzi, M., Hulshof, C. T. J., 1998. An updated review of epidemiologic studies on the relationship between exposure to whole-body vibration and low back pain. Journal of Sound and Vibration 215 (4), 595-612.

5. Hulshof, C., Van Zanten, B.V., 1987. Whole-body vibration and low back pain. A review of epidemiologic studies. International Archives of Occupational and Environmental Health 59, 205-220.

6. Magnusson, M. L., Pope, M. H., Hulshof, C., and Bovenzi, M., 1998. Development of a protocol for epidemiological studies of whole-body vibration and musculoskeletal disorders of the low back. Journal of Sound and Vibration 215 (4), 643-651.

7. Seidel, H., Heidel, R., 1986. Long term effects of whole-body vibration — a critical survey of literature. International Archives of Occupational and Environmental Health 58, 1-26.

8. Boileau, P.-É., 1995. A study of secondary suspension and human driver response to whole-body vehicular vibration and shock. Ph.D., Thesis, Concordia University, Montreal, Canada.

9. Wu, X., 1998. Study of driver-seat interactions and enhancement of vehicular ride vibration environment. Ph.D. Thesis, Concordia University, Montreal, Canada.

10. Boileau, P.-É. Wu, X. and Rakheja, S., 1998. Definition of a range of idealized values to characterize seated body biodynamic response under vertical vibration. J. Sound and Vibration, 215 (4), 841-862.

BOOKS

REVIEW OF THE LITERATURE

THESIS/ DISSERTATION

Wang, Wenping. "A Study of Force-Motion and Vibration Transmission Properties of Seated Body Under Vertical Vibration and Effects of Sitting Posture." Concordia University (Canada), 2007.

12. International Organization for Standardization, ISO-5982: 2001. Mechanical vibration and shock range of idealized values to characterize seated-body biodynamic response under vertical vibration.

13. Rakheja et al., 1997. Estimation of vibration transmission of the seat-human system though measurements of the seat-load system. Research Report, CONCAVE Research Center, Concordia University.

14. Bendat, J.S., Piersol A.G., 1992. Random data-analysis and measurement procedures. New York, John Wiley & Sons.

15. Lee, R.A., Pradko, F., 1968. Analytical analysis of human vibration, SAE paper 680091.

16. International Organization for Standardization ISO 2631-1, 1997. Mechanical vibration and shock – evaluation of human exposure to whole – body vibration. Part 1, General Requirements.

17. Lewis, C.H., Griffin, M.J., 1998. A comparison of evaluations and assessments obtained using alternative standards for predicting the hazards of whole-body vibration and repeated shock. Journal of Sound and Vibration, 215 (4), 915-926.

18. Mansfield, N.J., Holmlund, P., Lundström, R., 2000. Comparison of subjective responses to vibration and shock with standard analysis methods and absorbed power. Journal of Sound and Vibration 230 (3), 477-491.

19. Boileau, P.E. Rakheja, S. Yang, X. and Stiharu, I., 1997. Comparison of biodynamic response characteristics of various human body models as applied to seated vehicle drivers. Noise & Vibration Worldwide, October, 7-14.

20. Seidel, H., Griffin, M.J., 2001. Modeling the responses of the spinal system to whole-body vibration and repeated shock. Clinical Biomechanics 16 (Supplement 1), S3–S7.

21. Griffin, M.J., 2001. The validation of biodynamic models. Clinical Biomechanics 16 (Supplement 1), S81–S92.

22. Coermann, R.R., 1962. The Mechanical Impedance of the Human Body in Sitting and Standing Position at low frequencies. Human Factors, 227-253.

23. Miwa, T., 1975. Mechanical impedance of human body in various postures. Industrial Health, 13, 1-22.

STANDARDS

PEER REVIEWED/ SCHOLARLY JOURNAL ARTICLES

Wang, Wenping. "A Study of Force-Motion and Vibration Transmission Properties of Seated Body Under Vertical Vibration and Effects of Sitting Posture." Concordia University (Canada), 2007.

Tools for the Literature Search: Literature Databases

- Types
  1. Bibliographic databases, providing citations and abstracts. Ex: INSPEC & Compendex (Engineering Village)

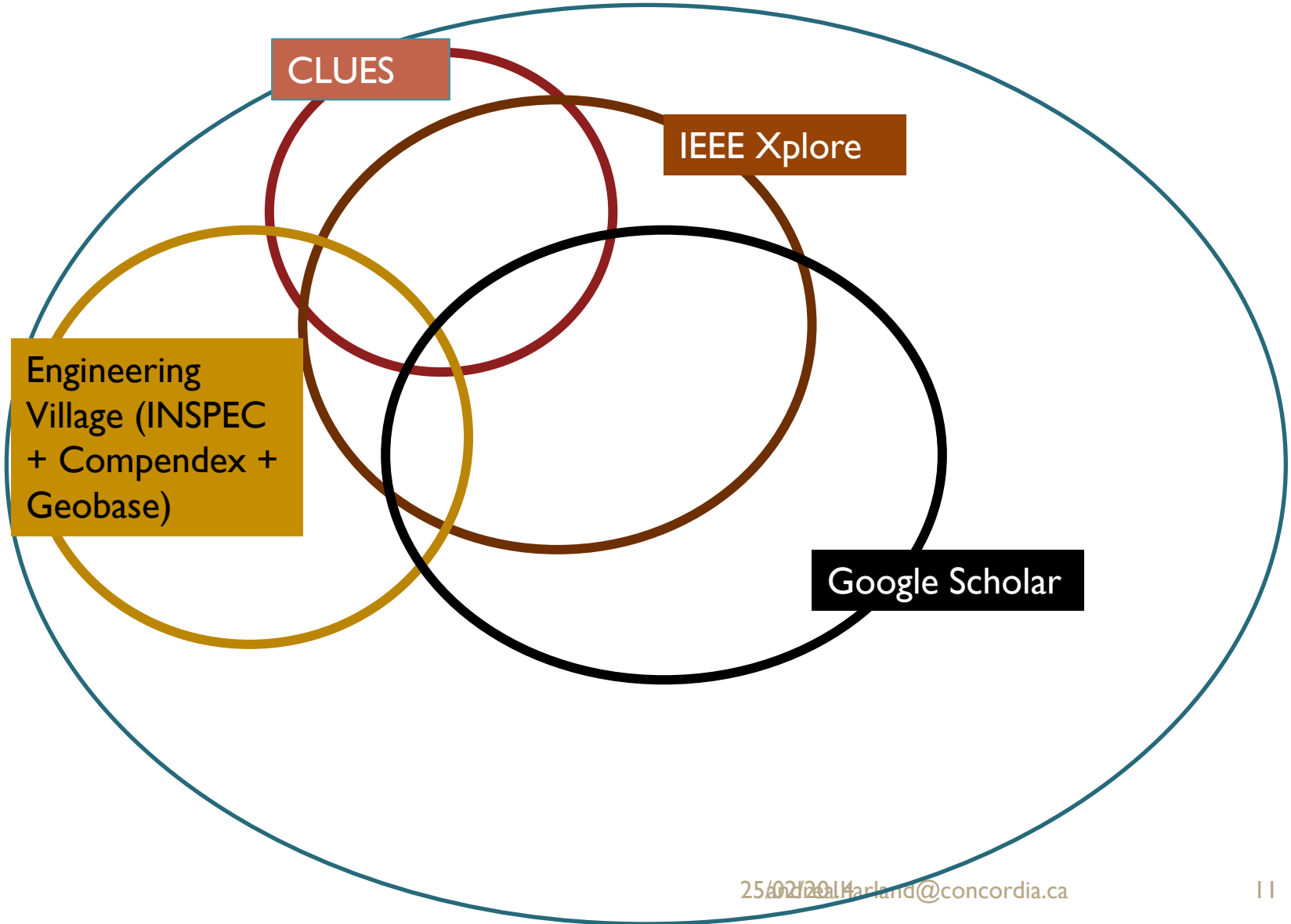
     Li, Lin. "The Advances and Characteristics of High-Power Diode Laser Materials Processing." Optics and Lasers in Engineering 34.4-6 (2000): 231-53.

  2. Format specific databases. Ex: Proquest Dissertation & Theses
  3. Fulltext databases & publisher databases. Ex: IEEE Xplore

Tools for the Lit Search: Literature Databases (cont'nd)

- Types (continued):
  4. Citation databases.
     Ex: Web of Science & Scopus
  5. Search engines. Ex: Google Scholar
  6. Location specific databases. Ex: CLUES (Concordia Libraries' online catalogue), WorldCat

Research/scholarly information



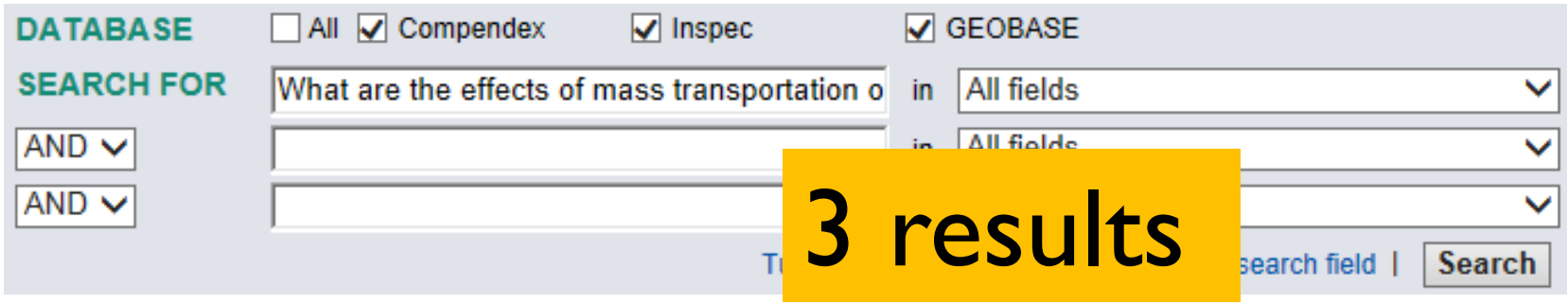
How to find and access databases

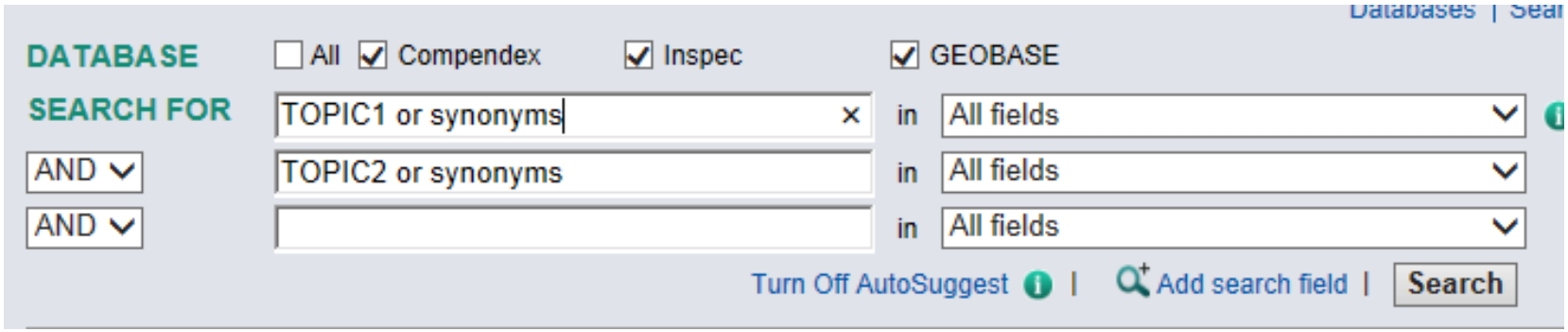
- Library homepage
  - http://library.concordia.ca
- Subject guides
  - http://library.concordia.ca/#browseSubject_tab
- The Internet
  - http://scholar.google.ca/
  - http://guides.library.cornell.edu/orie
- Talk to a subject librarian

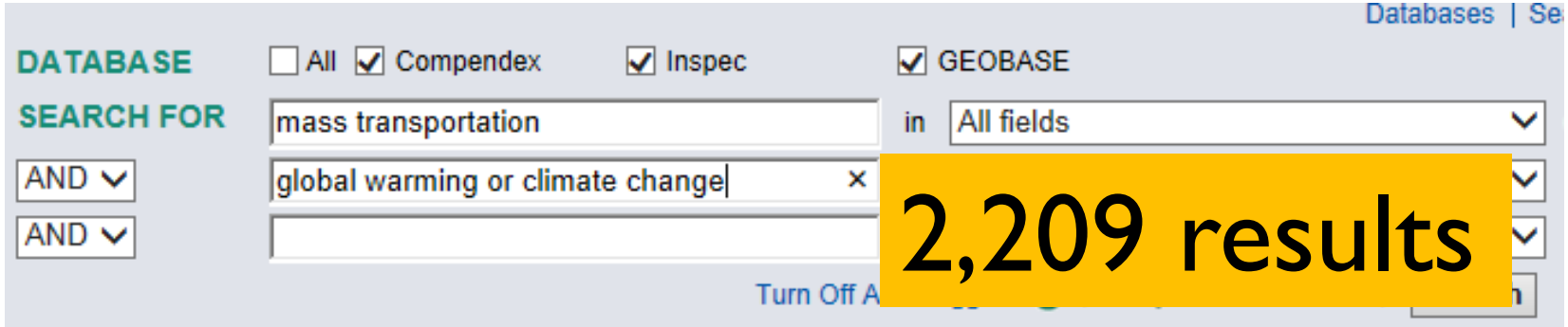
Search Strategies

- You need to choose a topic for your research
- Write a concise research question
- Identify important terms, concepts, keywords to create your search strategy
- Example:
  "What are the effects of mass transportation on global climate change?"
  Key concepts?
- Nice guide:
  http://libguides.asu.edu/content.php?pid=35423&sid=2167283

Search Strategies Cont'nd







Tools for the Lit Search: RefWorks

RefWorks

Call Number RD 73 S785S87 2011eb

Author Rosen, Jacob

Title **Surgical Robotics [electronic resource] : Systems Applications and Visions / edited by Jacob Rosen, Blake Hannaford, Richard M. Satava**

Publisher Boston, MA : Springer Science+Business Media, LLC, 2011

Years available	Connect to full-text
	View this document at SpringerLink

Robotic Advances in Aerospace Manufacturing.

Authors: Presher, Al

Source: Design News. Apr2013, Vol. 68 Issue 4, p42-47. 4p.

Document Type: Article

Subject Terms: *ROBOTICS
*INDUSTRIAL robots
*COMPUTER vision

Company/Entity: FANUC **Robotics** America Inc.

People: BLANCHETTE, Chris -- Interviews

Abstract: The article reports that in an interview with the national manager of **robotics** company Fuji Automatic Numerical Controls (FANUC) **Robotics** America, Chris Blanchette declared that a major development with **robotic** systems is the addition of new robot elements to support advanced manufacturing needs. The elements include high accuracy tools using secondary encoders, **robotic** mechanical arms that are rigid, and interfaces to vision systems to get data and create a more adaptive process.

ISSN: 0011-9407

Modular autonomous robotics platform for educational use

Lumsden, James[1]; Ortega-Sanchez, Cesar[1]

Source: *IEEE Region 10 Annual International Conference, Proceedings/TENCON*, p 1577-1582, 2010, *TENCON 2010 - 2010 IEEE Region 10 Conference*; **ISBN-13:** 9781424468904; **DOI:** 10.1109/TENCON.2010.5686047; **Article number:** 5686047; **Conference:** 2010 IEEE Region 10 Conference, TENCON 2010, November 21, 2010 - November 24, 2010; **Sponsor:** IEEE Fukuoka Section; IEEE Region 10; **Publisher:** Institute of Electrical and Electronics Engineers Inc.

Author affiliation:

[1] Electrical and Computer Engineering, Curtin University, Perth, Australia

Abstract:

Robotics is a field that continues to grow as robots become common in environments as varied as households and the battlefield. This paper presents a low cost robotics development platform using commercial off-the-shelf parts for educational and academic use. It is a direct response to the high cost and limited functionality of existing platforms. A navigation and obstacle-avoidance Fuzzy Controller is provided to accelerate the typical development process for a mobile robot. The fundamental aim is to facilitate future robotics projects by producing an inexpensive, modular and highly accessible platform that improves upon existing commercial offerings. ©2010 IEEE.(36 refs)

Main heading: Robots

Controlled terms: Education - Navigation - Navigation systems - Robotics

Uncontrolled terms: Autonomous navigation - Autonomous robotics - Commercial off the shelves - Development platform - Direct response - Educational robotics - Educational use - Fuzzy controllers - High costs - Low costs - Obstacle avoidance - Typical development

Classification Code: 434.4 Waterway Navigation - 716.3 Radio Systems and Equipment - 731.5 Robotics - 901.2 Education

Database: Compendex

Google legged robot

Scholar About 40,900 results (**0.07** sec)

Articles
Case law
Any time

Design, control, and energetics of an electrically actuated **legged robot**
P Gregorio, M Ahmadi, M Buehler - Systems, Man, and ..., 1997 - ieeexplore.ieee.org
Abstract To study the design, control and energetics of autonomous dynamically stable **legged** machines we have built a planar one-**legged robot**, the ARL Monopod. Its top running speed of 4.3 km/h (1.2 m/s) makes it the fastest electrically actuated **legged robot** ...
Cited by 156 Related articles All 10 versions Cite

References

Gregorio, P., Ahmadi, M., & Buehler, M. (1997). Design, control, and energetics of an electrically actuated legged robot. *Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on, 27*(4), 626-634.

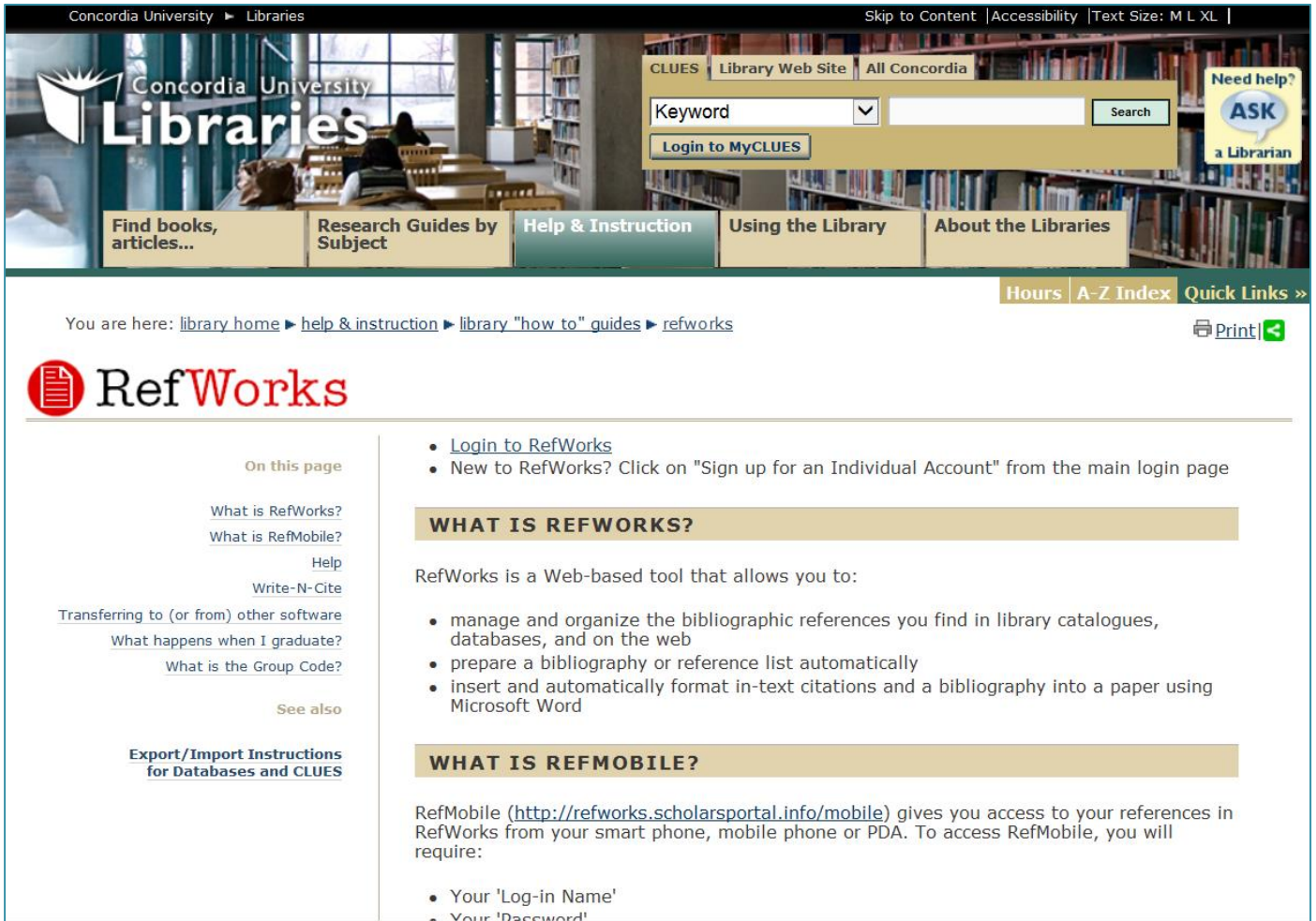
Lumsden, J., & Ortega-Sanchez, C. (2010). Modular autonomous robotics platform for educational use. *2010 IEEE Region 10 Conference (TENCON 2010)*, 1577-82. doi: 10.1109/TENCON.2010.5686047

Presher, A. (2013). Robotic advances in aerospace manufacturing. *Design News, 68*(4), 42-47.

Rosen, J., Hannaford, B., Satava, R. M., & SpringerLink. (2011). *Surgical robotics*. Boston, MA: Springer Science+Business Media, LLC.

Accessing RefWorks

- http://library.concordia.ca/help/howto/refworks.php



Your turn

Topic: flexible forming of sheet metal using lasers

1. Find concepts
2. Try searching Compendex/INSPEC (via Engineering Village)
3. Try searching Web of Science
4. Try searching ProQuest Dissertations & Abstracts

Locating your sources

- Click on "Find it @ Concordia"

- Search title of article in "quotes" (add author's name if necessary) in Google –**must have VPN** if off campus
- Check CLUES: http://clues.concordia.ca/
  - Journal title
  - Conference title
  - Book title

Todd, Litman. "Bicycling and transportation demand management". Transportation Research Record 1441 (1994): 134-140.

Locating your sources

- What to do if Concordia doesn't have what you want and you can't find it on the Web?
  - CREPUQ card
    http://library.concordia.ca/services/circulation/crepuq.html
  - Interlibrary Loans (Colombo)
    http://library.concordia.ca/research/ill/

Getting help

- Library website
- Subject guides
- Ask a Librarian services
- Me: andrea.harland@concordia.ca