

Class 1.2: Preliminary Project Information Search*

Sheldon Green, Ph.D., P.Eng.

green@mech.ubc.ca

Please email me to arrange an appointment.

My current availability is: Mon 9:00-10:45; Wed 9:00-10:45; Thurs. 9:00-17:00

* Thanks to Professor Hodgson who provided me with a preliminary draft of this presentation!

Agenda

- Reconfiguration into teams
- Project Information Search
 - Possible search approaches
 - Class collation
- Meeting your instructor and TA
 - Introductions, contact information

Teams

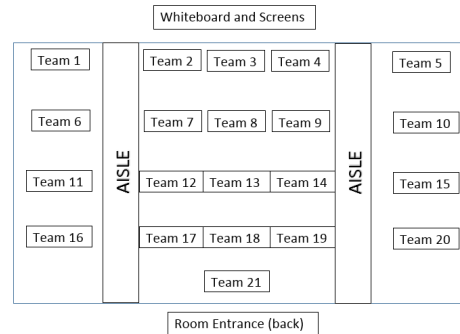
Surname	Preferred Name	Team Number
Gao	Jingxuan	1
Jones	Brendan	1
Lam	Allysia	1
Rae	Kevin	1
Runesson	Noah	1
Stewart	David	1
Lai	Michelle	2
Lee	Arin	2
Mainardis	Sebastiaan	2
Miguel	Lukengo	2
Rajagopal	Sridaran	2
Yang	Kevin	2
Bai	Hanyu	3
Park	Ahram	3
Robertson	Cole	3
Schropter	Daniel	3
Situ	Henry	3
Zhu	Charlie	3
Niu	Myra	4
Rose	Jacob	4
Skinner	Julian	4
Song	Yizhen	4
Waal	Alexander	4
Zhang	Zishun	4
Hong	Joohyung	5

Mair Garcia	Tania	5
Stevens	Cole	5
Sutanto	Chris	5
Virginillo	Tara	5
Zheng	Chenyi	5
Iqbal	Hassan	6
Lin	Ken	6
Neufeld	Charmaine	6
Suriawan	Michael	6
Yan	Michelle	6
Yuen	Jamie	6
Chen	Yujian	7
Kang	Yiling	7
Schellenberg	Connor	7
Wadi	Seif	7
Yeganeh	Kevin	7
Zhang	Farmissia	7
Aziz	Hamayun	8
Chow	Christy	8
Hinshaw	Dylan	8
Liu	Kevin	8
Rowe	Graham	8
Waslen	Alexander	8
Coleman	Melissa	9
Fox	James	9
Guruprasad	Ashwin	9
Jiang	Yizhe	9
Sun	Martin	9
Yoon	Jeff	9

Abraham	Stephen	10	Casey	Adam	14			
Escoto	Andrea	10	Deutsch	Dana	14			
Hopkins	Carson	10	Eagleton	Miguel	14	Dixon	Brent	18
Prakitpong	Ratthamnoon	10	Gowe	Breanna	14	Lawson	Janelle	18
Slotman	Lukas	10	Li	Belva	14	Lim	David	18
Zhuravleva	Julia	10	Zhang	Edward	14	Thiessen	Scott	18
Abdallahamid	Mahmoud	11	Guan	Gary	15	Chen	Iris	19
Gross	Johanna	11	Kölmel	Tibo	15	Choudhury	Sachin	19
Lai	Kenji	11	Maras	Stephan	15	Lam	Adrian	19
Park	Jongan	11	McCulloch	Steven	15	Lee	Noel	19
Souksamlane	Brendan	11	Rutckij	Nick	15	Shi	Harry	19
Webb	Stuart	11	Stetsko-Kallin	Kyle	15	Wu	Felix	19
Asfour	Ricky	12	Bunka	Sam	16	Dai	Xiwen	20
Chan	Jasper	12	Buonassisi	Anthony	16	Goto	Eric	20
Chang	Jacky	12	Fok	Jonathan	16	Hui	Vivien	20
Hendricks	Nathan	12	Goh	Xi Wen	16	Parsi	Bahram	20
Patterson	Shane	12	Leung	Elaine	16	Shi	Raymond	20
Woods	Hamish	12	Vanderhorst	Kyle	16	Wei	Daisy	20
Chisholm	Robert	13	Grabowski	Thomas	17	Baalbaki	Osman	21
Co	Gianni	13	Gross	Nicole	17	Flett	Rhys	21
Sun	Haozhe	13	Heieis	Josh	17	Jones	Alden	21
Thiesen	Travis	13	Morris	Emily	17	Jung	Brandon	21
Wu	Nan	13	Thiesien	Philippe	17	Rohland	Zach	21
			Shiu	Antony	17	Sled	Jason	21
			Zhao	Daniel	17			
			Alatas	Husein	18			
			Ayissi	Philippe	18			

Room Configuration by Team Number

- Teams have about 6 students. If all 6 students are in a row, conversation will be a challenge. Please arrange in two adjacent rows.

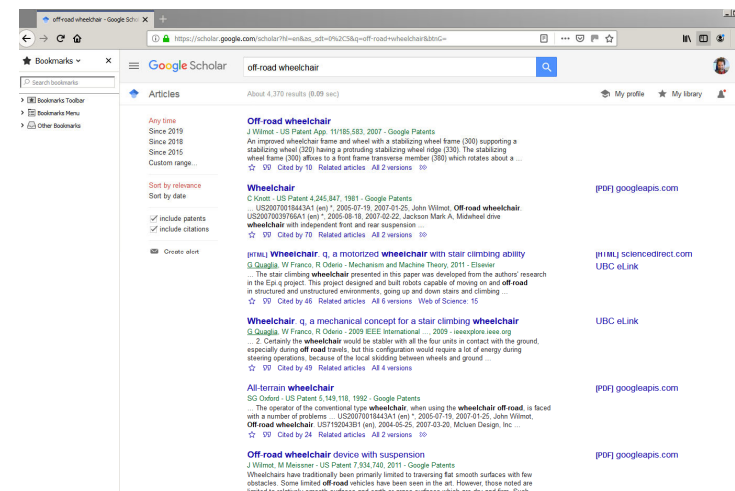


Where Should I Search for Technical Information?

1. Wikipedia
2. Google Scholar
3. Textbooks
4. Standards
5. UBC Library
6. Patents

What Search Terms Might Be Good?

1. mobility
2. accessibility
3. outdoors / trails
4. client - search for client's web presence
5. "all-terrain vehicles" or "off-road vehicles"
6. wheelchairs



Google Scholar

wheelchair biomechanics

Articles

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[PDF] Filter frequency selection for manual **wheelchair biomechanics**
RA Cooper, CP DiGirolamo... - Journal of ... 2002 - pdfs.semanticscholar.org
Wheelchair locomotion is an important form of mobility for many individuals with spinal cord injury. However, manual **wheelchair** propulsion can lead to upper-limb pain and can be very inefficient. This has led investigators to apply **biomechanics** to the study of **wheelchair** use ...
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[HTML] Manual **wheelchair** pushrim **biomechanics** and axle position
ML Boninger, M Baldwin, RA Cooper, A Koontz... - Archives of physical ... 2000 - Elsevier
Abstract Boninger ML, Baldwin M, Cooper RA, Koontz A, Chan L. Manual **wheelchair** pushrim **biomechanics** and axle position. Arch Phys Med Rehabil 2000; 81: 608-13.
Objective: The **biomechanics** of **wheelchair** propulsion have been linked to upper extremity ...
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Wheelchair propulsion biomechanics
Y Vanlandewijck, D Thiaison, D Daly - Sports medicine, 2001 - Springer
The aim of this article is to provide the reader with a state-of-the-art review on **biomechanics** in hand rim **wheelchair** propulsion, with special attention to sport-specific implications. Biomechanical studies in **wheelchair** sports mainly aim at optimising sport performance or ...
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[HTML] Propulsion patterns and pushrim **biomechanics** in manual **wheelchair** propulsion
ML Boninger, AL Souza, RA Cooper... - Archives of physical ... 2002 - Elsevier
Abstract Boninger ML, Souza AL, Cooper RA, Fitzgerald SG, Koontz AM, Fay BT. Propulsion patterns and pushrim **biomechanics** in manual **wheelchair** propulsion. Arch Phys Med Rehabil 2002; 83: 718-23. Objectives: To classify stroke patterns of manual **wheelchair** ...
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Note on Searching Journals

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keywords

Search

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Engineering Village

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Quick search: All Fields for off-road wheelchair

Suggested terms: Off Road Vehicles Wheelchairs Storage Battery Vehicles - Off Road Operation Bicycles Lawn Mowers

Turn on AutoSuggest | Add search field | Reset form

Databases Date Language Document type Sort by Browse indexes Autostemming Discipline

Treatment

19 records found in Compendex for 1666-2020: (off-road wheelchair) WN ALL 1 of 1 pages

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Sort by: Relevance

Display: 25 results per page

Refine

By physical property
Filter results by physical properties such as size, temperature, pressure and many more.

By category Download all

Limit to Exclude

Add a term

Document type Journal article (8)

- ☐ **A novel rugged all-terrain wheelchair: Opening the door to outdoor recreation and off-road travel for people with mobility impairments**
Owens, Jesse L (WWAMI Biomedical Program, University of Alaska, 3211 Providence Drive, Anchorage, AK 99508, United States) Sources: i-CREATE 2008 - International Convention on Rehabilitation Engineering and Assistive Technology 2008, p 43-46, 2008, i-CREATE 2008 - International Convention on Rehabilitation Engineering and Assistive Technology 2008
Databases: Compendex
Document types: Conference article (CA)
Detailed Show preview UBC library
- ☐ **VARIABLE-HEIGHT-POWERED WHEELCHAIR FOR THE QUADRIPLLEGIC DRIVER.**
Cunningham, Don M. Sources: Bulletin of Prosthetics Research, p 337-369, Fall 1974
Databases: Compendex
Document types: Journal article (JA)

All-Terrain Wheelchair

By Janez Podobnik, Jure Riejc, Sebastian Šlepah, Marko Munih, and Matjaž Mihelj

State-of-the-art technologies empower people with motor disabilities to carry out activities of daily living, thus enabling a better quality of life. Personal mobility is crucial for the well-being of individuals with motor impairments. In fact, studies have shown that, among people with motor disabilities, those having better mobility report greater satisfaction with their quality of life than those having lower mobility [1]–[3]. Motor functions can be improved, recovered, or partially substituted with various robot-based technologies, such as robotic prostheses, exoskeletons, and electric wheelchairs. Robotic wheelchairs allow those with motor disabilities practical and efficient electric mobility.

A team of students and mentors from the University of Ljubljana, Slovenia, developed the concept and prototype for a hybrid robotic wheelchair that allows the user to traverse obstacles, such as stairs and ramps commonly found in urban and rural environments, by utilizing both wheeled and tracked propulsion. Additionally, the team's prototype incorporates a wheel-drive system designed for enhanced maneuverability in indoor spaces. The prototype was put to test at the Cybathlon, a competition that promotes the development of advanced robotic devices for people with disabilities, in 2016. The team from the University of Ljubljana successfully finished the competition, winning a bronze medal in the powered wheelchair race.

While lost lower limb functions can sometimes be restored with intensive rehabilitation, wheelchairs are often the only practical means of transportation for disabled people who find it difficult or are unable to walk. The fundamental role of wheelchairs is to improve the mobility of users, thus enhancing their ability to participate in activities of daily life [4]. Because it is important for people with

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1070-4652/17/02017000

Project Information Search

- Google Docs Spreadsheet:
<https://docs.google.com/spreadsheets/d/1ud0Dij7885JjApFVB6Ag3-DM4vojY8W7gY9MO--B4yQ/edit#gid=0>
- Purpose: to collect as much background information as possible as quickly as possible!
- Ask relevant questions as a group
- Find some preliminary answers
- Each group is expected to contribute at seven pieces of information under each of three headings:
 - Info Sources (copy and paste a URL)
 - Key Issues (a few words, e.g. required power, stability, etc.)
 - Interesting Information (a few words, e.g. Design A tested and failed)

Meeting TA

- Each TA has three groups; assignments posted on Canvas
- Exchange contact info
 - Consider creating gmail or similar address for your group; use convention such as 2019MECH328G#@gmail.com
- Introduce yourselves
- TA will briefly review expectations for first meeting
 - NOTE: FIRST REPORT DUE THIS WEEKEND (SORRY, MONDAY MEETING PEOPLE)

Switching Teams

Though we discourage this, we are willing to consider 'trade' requests under the following conditions:

1. You need to find someone who is willing to switch
2. The person with whom you are switching must be in the same option as you are
3. You must present a written note indicating a desire to switch, signed by both people, to the MECH office by 4 PM Thursday (ask receptionist to deposit in Markus Fengler's box)