

MDSC 203
Inquiry I: Developing Health Research Literacy I

Instructors:

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Office Hours/Policy on Answering Student Emails

All student meetings will be by appointment and scheduled individually. In light of the ongoing and evolving COVID pandemic, these may be conducted in person or by Zoom.

Please note that all course communications must occur through your @ucalgary email, and a response to emails sent via student's @ucalgary emails can be expected within 48 hours.

Teaching Assistants:

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Time and Location:

2021/09/07-2021/12/09

Main sessions in Theatre One

Mondays and Wednesday 9:00am-11:20am

This course will also use Desire2Learn (D2L). If you are unable to attend class for any reason, inform the instructor (in advance if possible) and we may be able to propose an alternative participation activity (e.g., watch a recorded lecture, submit a brief reflection, and actively contribute to the follow-up online discussion).

Prerequisite/Co-Requisite:

Admission to the BHSc Honours program

Course Description:

This course introduces students to the interdisciplinary scope of health research. Through reading, writing assignments, and group presentations, students will acquire the fundamental skills for academic research, and will develop their ability to effectively evaluate scientific information as well as communicate effectively with a scientific audience. Particular emphasis is placed on academic writing and presentation skills through individual and team assignments.

Overarching Theme

Research is the systematic acquisition of knowledge through investigation. This is true whether that research is undertaken in academic (e.g. university), industrial (e.g. technology company), or non-governmental (e.g. thinktank, charity) environments. All improvements in the human condition produced by human activity are based on knowledge in some form, which, in turn, is based on some form of research. Scientific research, in particular, endeavours to the ideals of being cumulative, universally disseminated, and unbiased; the reality, in fact, can often be far more complicated, and influenced by broader social factors.

The Bachelor of Health Science (BHSc) degree is a research-intensive undergraduate degree. The conduct, interpretation, and application of research requires specialized skills. You will develop these skills in the first year of the BHSc program and, as you progress through the years, you will build on these skills by using them in increasingly more complex and specialized research endeavours. The purpose of this course is to build an effective foundation in these skills.

A central skill required to conduct research is the ability to communicate both orally and in writing. Even the most significant discoveries would be lost if the person or team behind them is unable to communicate them effectively to others. Research communication can take on many forms, depending on the purpose and the intended audience: a scientist may share results within a research discipline, researchers from different fields may seek to collaborate or cooperate, or a journalist may transmit researchers' findings to non-specialists. Research is never completed in complete isolation; it is a team effort. This is particularly true in the biomedical sciences, where research is conducted in teams that often span institutions and countries, and in which people with different skill sets must be able to work together effectively towards a common goal. Even when scientists collect and analyze data independently, they converse with fellow scientists by publishing their findings. The ability to work in teams is emphasized throughout the BHSc program. In this course, you will work with your classmates on group presentations that are based on your collective analysis of an important health issue.

Global Objectives

Researchers need to communicate within their research community. In some cases, it is also important to communicate information effectively with researchers working in other fields. One of the challenges facing the health sciences is that many distinct research sub-disciplines that focus on health exist, each with its own perspective and culture, defined by its values, conventions and practices. In practice, cross-cultural communication can often be difficult to achieve. This course will introduce you to three different research cultures and perspectives so that you can begin to appreciate different research styles and contributions. More importantly, you will see how different perspectives can complement each other to create a deeper understanding of important problems, their integration often underlying the most important discoveries.

Course Learning Outcomes

By the end of this course, students will be able to:

- 1) Explain, at the level of an educated layperson, the basic principles of the conceptual foundations of biomedical science and social science health research
- 2) Analyze an academic paper in the health sciences in terms of:
 - a. Whether the paper is a primary research article or a secondary source
 - b. Whether the paper tests a hypothesis
- 3) Explain the concept of a research perspective and its importance.
- 4) Apply academic standards for citation when writing.
- 5) Write a text that is clear and accessible to a well-educated layperson and that conforms to standards of academic writing.
- 6) Work within a group to create and deliver a presentation that is well organized, clear, concise and understandable to an educated layperson.

Recommended Textbooks/Readings

General Reading

1. Latour, B., Woolgar, S. 1975. "An anthropologist visits the laboratory" from *Laboratory Life: The construction of scientific facts*.
2. Bush, V. 1945. *Science: The endless frontier*.
3. Merton, R. 1942. "The Normative Structure of Science" from *The Sociology of Science: Theoretical and empirical investigations*.
4. Panagiotakos, D. 2008. "The Value of p-Value in Biomedical Research." *Open Cardiovascular Medical Journal*. 2: 97-99.

Biomedical Perspective (mechanisms)

1. Massoud, T.F., Hademenos, G.J., Young, W.L. et al. (1998) Principles and philosophy of modeling in biomedical research. *FASEB Journal*. 12: 275-285. <https://www.fasebj.org.ezproxy.lib.ualgary.ca/doi/pdf/10.1096/fasebj.12.3.275>
2. Richard, D. (2015) Cognitive and autonomic determinants of energy homeostasis in obesity. *Nature Reviews Endocrinology*. 11: 489–501. <http://www.nature.com.ezproxy.lib.ualgary.ca/articles/nrendo.2015.103.pdf>
3. Badman, M.K., and Flier, J.S. (2005) The gut and energy balance: Visceral allies in the obesity wars. *Science*. 307: 1909-1914. <http://science.sciencemag.org.ezproxy.lib.ualgary.ca/content/307/5717/1909/tab-pdf>
4. Zheng, H. and Berthoud H-R. (2007) Eating for pleasure or calories. *Current Opinion in Pharmacology*. 7: 607–612. <http://www.ncbi-nlm-nihgov.ezproxy.lib.ualgary.ca/pmc/articles/PMC2194753/pdf/nihms36005.pdf>

Evolutionary Perspective (origins)

1. Lieberman, D.E. (2015) Is exercise really medicine? An evolutionary perspective. *Current Sports Medicine Reports*. 14: 313-319.
<http://ovidsp.ovid.com.ezproxy.lib.ucalgary.ca/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&AN=00149619-201507000-00013&D=ovft&PDF=y> (cut and paste to address to internet search)
2. Nesse, R.M., Bergstrom, C.T., Ellison, P.T., et al. (2010) Evolution in health and medicine Sackler colloquium: Making evolutionary biology a basic science for medicine. *Proceedings of the National Academy of the United States of America*. 107 Suppl 1: 1800-1807.
http://www.pnas.org.ezproxy.lib.ucalgary.ca/content/pnas/107/suppl_1/1800.full.pdf

Health & Society Perspective

1. Mikkonen, J. and Raphael, D. (2010) Social determinants of health: The Canadian facts. Toronto: York University School of Health Policy and Management. Available online at: <http://www.thecanadianfacts.org>
2. Tremblay, M.S. and Willms, J.D. (2003) Is the Canadian childhood obesity epidemic related to physical inactivity? *International Journal of Obesity*. 27(9): 1100-1105.
<http://www.nature.com.ezproxy.lib.ucalgary.ca/articles/0802376.pdf>
3. Raphael, D. (2006) Social determinants of health: Present status, unanswered questions, and future directions. *International Journal of Health Services*. 36: 651-677.
<http://journals.sagepub.com.ezproxy.lib.ucalgary.ca/doi/pdf/10.2190/3MW4-1EK3-DGRQ-2CRF>
4. Braveman, P.A., Egerter, S.A. and Mockenhaupt, R.E. (2011) Broadening the focus: The need to address the social determinants of health. *American Journal of Preventative Medicine*. 40 Suppl 1: S4-S18.
<https://www.sciencedirect-com.ezproxy.lib.ucalgary.ca/science/article/pii/S0749379710005635>
5. Larsen, K. and Gilliland, J. (2008) Mapping the evolution of 'food deserts' in a Canadian city: Supermarket accessibility in London, Ontario, 1961-2005. *International Journal of Health Geography*. 7:16. <https://ij-healthgeographics.biomedcentral.com/track/pdf/10.1186/1476-072X-7-16>

Learning Technology Requirements

Brightspace (by D2L) is located on the University of Calgary server and will be used extensively for communication with students. **It is the student's responsibility to ensure that they receive all posted communications and documents and that they receive emails sent by instructors or fellow students through D2L.** Only your @ucalgary.ca email address may be linked to D2L. Please ensure that you are regularly checking your @ucalgary.ca account.

Evaluation

The University policy on grading and related matters is described in section F of the 2021-2022 Calendar.

Group Work

You will be assigned to a small group to work with for the course of the semester. You will meet at least once a week during scheduled time with your group and a course preceptor and are strongly encouraged to use extra time outside of class to prepare group presentations. Each student in the group receives the same presentation grade.

Group Presentations

You cannot choose COVID-19 as the disease or health topic for your group assignment.

1. Group Presentation #1: Choose a disease or health issue. From a biomedical perspective characterize the phenomenon and explain what is known about its etiology. Details on the origins of the disease may be omitted from the presentation; however, the group should be able to field questions on evolutionary factors that have contributed to the existence of the disease today. Include in your presentation current interventions for your chosen disease/health issue and identify any major outstanding questions and/or future directions for research. (detailed instructions available on D2L) **Weight: 15%**

October 21, 26 and 28 during class time

2. Group Presentation #2: Take the same disease/health issue and build on the biomedical perspective by describing the major social determinants related to the disease/health issue. Explain how one or two of those social determinants influence the prevalence or severity of the disease/health issue. Present and defend relevant plausible policy initiatives that arise from these social determinants and that may help with solutions to this disease/health issue. (detailed instructions available on D2L) **Weight: 15%**

November 25 and 30 and December 2 during class time

Note that each student is expected to participate in the delivery of at least one presentation. All students are expected to contribute to the preparation of both presentations and should be able to field questions.

Group Work and Participation (10%):

Each student will receive an individual grade for their contribution to the work of their group. This grade will be based on continuing evaluation by the group preceptors and on feedback from fellow group members [see schedule/D2L for group peer evaluation forms & deadlines]. During each formal meeting, the preceptor will keep notes on individual contributions to the group discussion and work. After each presentation, students will conduct an evaluation of group members and themselves. The final group work grade will be based on an evaluation of the preceptors' notes of each student's contribution to the group and peer evaluations. Potential misunderstandings over commitment can be avoided by informing your preceptor and peers of any absences.

Assignments:

PLEASE NOTE: It is advised that you use your group disease for written assignments 2 and 3; however, you are at liberty to choose an alternative topic of your choice but must discuss this with your preceptor. You cannot choose obesity as the topic for your written assignments. All assignments are to be submitted electronically through D2L.

1. Assignment #1. Paper (750-word limit): Choose a primary research article (a list of choices is contained in the rubric for this assignment, see D2L). Summarize key details of this paper and find 3 additional papers relevant to it. Draw explicit connections between the research reported

in your 3 additional papers and the primary target paper. (detailed instructions available on D2L)
Weight: 15%. Due: Draft September 27 & Final October 11 by 11:59 PM

2. Assignment #2. Paper (900-word limit): Analyze a disease or health issue from a biomedical perspective. Explain what is known about the etiology (causes) of that disease and how it is treated. Identify one or more major outstanding questions about this disease/health. (detailed instructions available on D2L) **Weight: 20%. Due: November 8th by 11:59 PM**
3. Assignment #3. Paper (1100-word limit): Building on the biomedical perspective, discuss how social determinants affect your chosen disease/health issue. Explain one or two major social determinants of your chosen disease/health issue in depth. Explain how these social determinants influence the prevalence or severity of the disease and present and defend relevant plausible policy implications. (detailed instructions available on D2L) **Weight 25%. Due: December 13 by 11:59 PM**

In determining the overall grade in the course, the following weights will be used:

Group work and participation	10%
Assignment 1	15%
Assignment 2	20%
Assignment 3	25%
Group Presentation 1	15%
Group Presentation 2	15%

Late submissions will be penalized 10% per day late, except for legitimate reasons. Refer to the University policy on student absence from courses, tests and examinations. Wherever possible, the course coordinator/group leaders need to be notified ahead of time.

- Traffic jams and late or full busses are now common events in Calgary and are NOT acceptable reasons for late submissions or late arrivals to classes, meetings and examinations. Plan for delays in transportation.
- Re-grading policy: Students must first meet with their preceptor to discuss feedback on their paper. If the student wishes to request an official re-grade of the assignment, requests must be made in writing to their preceptor and the course coordinator with an explanation of why they feel their paper should be re-graded. The assignment will be re-graded by two preceptors and a final grade awarded. Please be aware that the grade may be the same, higher or lower than the original grade. Request for a re-grade must be made **within 10 calendar days** of receiving your graded assignment.

A student's final grade for the course is the sum of the separate assignments. It is not necessary to pass each assignment separately in order to pass the course.

A Note regarding Writing Assignments:

Writing skills are important to academic study in all disciplines. In keeping with the University of Calgary's emphasis on the importance of academic writing in student assignments (section E.2 of 2021-22 Calendar), writing is emphasized, and the grading thereof in determining a student's mark in this course. The Bachelor of Health Sciences values excellence in writing. Competence in writing entails skills in crafting logical, clear, coherent, non-redundant sentences, paragraphs and broader arguments, as well as skills with the mechanics of writing (grammar, spelling, punctuation). Sources used in research papers must be properly documented. The University of Calgary offers instructional services through the Students' Success Centre's Writing Support Services (<http://www.ucalgary.ca/writingsupport/>) for students seeking feedback on assignments or seeking to improve their general writing skills. Students are **strongly encouraged** to take advantage of these programs.

Grading Scheme:

Letter Grade	Description	Percentage
A+	Outstanding performance	96-100
A	Excellent performance	90-95
A-	Approaching excellent performance	85-89
B+	Exceeding good performance	80-84
B	Good performance	75-79
B-	Approaching good performance	70-74
C+	Exceeding satisfactory performance	65-69
C	Satisfactory performance	60-64
C-	Approaching satisfactory performance	57-59
D+	Marginal pass	54-56
D	Minimal pass	50-53
F	Did not meet course requirements	0-49

Course Evaluations and Student Feedback

Student feedback will be sought at the end of the course through the Universal Student Rating of Instruction (USRI) and a qualitative student evaluation. Students are welcome to discuss the process and content of the course at any time with the instructor. Students may also address any concerns they may have with Dr. Ebba Kurz, Associate Dean (Undergraduate Health and Science Education) in the Cumming School of Medicine (kurz@ucalgary.ca).

Attendance

Attendance is expected for each student at all sessions. Please note that while absences are permitted for religious reasons, students are responsible for providing advance notice and adhering to other guidelines on this matter, as outlined in the University Calendar (<https://www.ucalgary.ca/pubs/calendar/current/e-4.html>).

Conduct During Lectures

The classroom should be respected as a safe place to share ideas without judgement - a community in which we can all learn from one another. Students are expected to frame their comments and questions to lecturers in respectful and appropriate language, always maintaining sensitivity towards the topic.

Students, employees, and academic staff are also expected to demonstrate behaviour in class that promotes and maintains a positive and productive learning environment.

As members of the University community, students, employees and academic staff are expected to demonstrate conduct that is consistent with the University of Calgary Calendar, the Code of Conduct and Non-Academic Misconduct policy and procedures, which can be found at <https://www.ucalgary.ca/legal-services/university-policies-procedures>.

Students are expected to take notes during class and should not rely solely on material supplied by the instructors.

Use of Internet and Electronic Communication Devices in Class

The Bachelor of Health Sciences program aims to create a supportive and respectful learning environment for all students. The use of laptop and mobile devices is acceptable when used in a manner appropriate to the course and classroom activities. However, research studies have found that inappropriate/off-topic use of electronic devices in the classroom negatively affects the learning of others during class time.

Students are responsible for being aware of the University's Internet and email use policy, which can be found at <https://www.ucalgary.ca/policies/files/policies/electronic-communications-policy.pdf>.

UNIVERSITY OF CALGARY POLICIES AND SUPPORTS

Copyright

All students are required to reach the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright-policy.pdf>) and requirements of the Copyright Act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes, electronic versions of textbooks, etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy <https://www.ucalgary.ca/pubs/calendar/current/k.html>.

Instructor Intellectual Property

Course materials created by instructors (including course outlines, presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may **NOT** be reproduced, redistributed or copied without the explicit consent of the professor. **The posting of course materials to third-party websites such as note-sharing sites without permission is prohibited.** Sharing of extracts of these course materials with other students enrolled in the course **at the same time** may be allowed under fair dealing.

Academic Accommodations

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is available at <https://ucalgary.ca/student-services/access/prospective-students/academic-accommodations>. Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities (<https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf>). SAS will process the request and issue letters of accommodations to instructors. For

additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/.

Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to Dr. Ebba Kurz (kurz@ucalgary.ca), Associate Dean (Undergraduate Health and Science Education).

Academic Misconduct

The University of Calgary is committed to the highest standards of academic integrity and honesty. The University of Calgary has created rules to govern all its members regarding the creation of knowledge and the demonstration of knowledge having been learned.

Academic Misconduct refers to student behaviour that compromises proper assessment of a student's academic activities and includes (but is not limited to): cheating, fabrication, falsification, plagiarism, unauthorized assistance, failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses, and failure to comply with exam regulations applied by the Registrar. **It also includes using of third-party websites/services to access past/current course material, essay/assignment writing services, or real-time assistance in completing assessments, seeking answers to assessment questions and similar, whether paid, bartered or unpaid.**

For information of the Student Academic Misconduct Policy and Procedures, please visit; <https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf>
<https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf>

Additional information is available on the Academic Integrity website at: <https://ucalgary.ca/student-services/student-success/learning/academic-integrity>.

Recording of Lectures

Audio or video recording of lectures (or similar) is prohibited except where explicit permission has been received from the instructor.

Freedom of Information and Protection of Privacy Act

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary

Appeals

If there is a concern with the course, academic matter or a grade, first communicate with the instructor. If these concerns cannot be resolved, students can proceed with an academic appeal, as per Section I of the University Calendar. Students must follow the official reappraisal/appeal process and may contact the Student Ombuds' Office (<http://www.ucalgary.ca/ombuds>) for assistance with this and with any other academic concerns, including academic and non-academic misconduct. Students should be aware that concerns about graded term work may only be initiated **within 10 business days** of first being notified of the grade. <https://www.ucalgary.ca/pubs/calendar/current/i-2.html>

Sexual Violence Policy

The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. The University of Calgary's sexual violence policy guides us in how we respond to incidents of sexual

violence, including supports available to those who have experienced or witnessed sexual violence, or those who are alleged to have committed sexual violence. It provides clear response procedures and timelines, defines complex concepts, and addresses incidents that occur off-campus in certain circumstances. Please see the policy available at <https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>

Resources for Support of Student Learning, Success, Safety and Wellness

Student Success Centre	http://www.ucalgary.ca/ssc/
Student Wellness Centre	http://www.ucalgary.ca/wellnesscentre/
Distress Centre	http://www.distresscentre.com/
Library Resources	http://library.ucalgary.ca

Wellness and Mental Health Resources

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (<https://www.ucalgary.ca/wellnesscentre/services/mental-health-services>) and the Campus Mental Health Strategy (<http://www.ucalgary.ca/mentalhealth/>).

Student Ombuds' Office

The Student Ombuds' Office supports and provides a safe, neutral space for students. For more information, please visit www.ucalgary.ca/ombuds/ or email ombuds@ucalgary.ca

BHSc Student Faculty Liaison Committee (SFLC)

The BHSc SFLC, with elected representatives from all majors, serves to raise issues of interest to BHSc students to the program administration, including items pertaining to curriculum, scheduling and events. A list of current representatives can be found on the BHSc website.

Student Union (SU) Information

The SU Vice-President Academic can be reached at (403) 220-3911 or suvpaca@ucalgary.ca; the SU representatives for the Cumming School of Medicine can be reached at medrep1@su.ucalgary.ca or medrep2@su.ucalgary.ca.

Student Success Centre

The Student Success Centre provides services and programs to ensure students can make the most of their time at the University of Calgary. Our advisors, learning support staff, and writing support staff assist students in enhancing their skills and achieving their academic goals. They provide tailored learning support and advising programs, as well as one-on-one services, free of charge to all undergraduate and graduate students. For more information visit: <https://www.ucalgary.ca/student-services/student-success>

Emergency Evacuation/Assembly Points

As part of the University of Calgary Emergency Evacuation plan, students, faculty, and staff should locate the closest Assembly Point in case of Fire Alarm. Safety signage is posted throughout the campus showing the locations and the possible route to these locations. All students, faculty, and staff are expected to promptly make their way to the nearest Assembly Point if the Fire Alarm is activated. No one is to return into campus facilities until an all clear is given to the warden in charge of the Assembly

Area. For more information, see <https://www.ucalgary.ca/emergencyplan/building-evacuation/assembly-points>

Safewalk

Campus security will escort individuals, day or night, anywhere on campus (including McMahon Stadium, Health Sciences Centre, Student Family Housing, the Alberta Children's Hospital and the University LRT station). Call 403-220-5333 or visit <http://www.ucalgary.ca/security/safewalk>. Use any campus phone, emergency phone or the yellow phone located at most parking lot pay booths. Please ensure your personal safety by taking advantage of this service.