

University of Calgary
Department of Communication, Media and Film
COMS 393 (L01): Critical Perspectives on Health and Science
FALL 2021: September 7 to December 9 (excluding Oct. 11 and Nov. 7-13)
Lecture: MoWe 14:00 to 15:15

IMPORTANT NOTE FOR IN-PERSON COURSE DELIVERY

Note: This course will be delivered in-person. If you are unable to participate in-class owing to time differences or geographical location, please arrange to take this course in a future term. The course will involve in-person or asynchronous online review sessions scheduled with the instructor. The course will have an online midterm and an online final exam delivered asynchronously on D2L.

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Web Page:	D2L (access via MyUofC portal)
Office Hours:	Tuesdays 12:30 to 1:30 pm Wednesdays 3:30 to 4:30 pm Both in-person (unless required to move online)

Course Description

Examines the construction and communication of health and science as socio-cultural phenomena and interrogates the ways in which health and science issues are communicated, defined, represented and framed, particularly within contemporary media.

Additional Information

Students will require a free Google account for assignments that require Google Docs and Google Slides. The weekly schedule of topics and readings can be found at the end of this outline or on D2L. Students are responsible for reading and following all course and university policies discussed in this outline.

Objectives of the Course

This course is intended to help students to develop:

1. An understanding of a range of critical approaches taken by communication scholars to the communication of health and science.
2. Skill in applying theoretical frameworks to critically analyze communication artifacts and discourses related to health and science.
3. A greater understanding and respect for the aims, methods, concepts, and challenges of medical and scientific knowledge-making processes.

4. Competence in using and citing sources, developing arguments, delivering oral presentations, and structuring papers, as well as skill in writing clearly, correctly, and concisely.

Throughout the course, we will focus on concepts of persuasion, power, and identity, considering questions such as the following:

- In what ways are health and science rhetorical (persuasive) activities?
- What institutions and voices wield power in discursive representations?
- Whose interests are served (and whose are silenced) in particular texts and frames?
- How do particular representations and discourses shape people's thought processes, attitudes and identities?

Textbooks and Readings

There is no required textbook. Course readings or links to readings will be on D2L, and a preliminary reading list is below. Please come to class having done the required readings and prepared to engage in discussion and participation activities. The lectures will be delivered assuming that you are already familiar with the readings assigned for the day.

Recommended online resources (free): Instructor handouts & instructions files posted to D2L.

Sometimes your assigned readings for the day will include designated peers' assignment drafts or presentations submitted to D2L, and you'll be expected to show the review notes you've made on them in preparation for participation.

Learning Technologies and Requirements

In order to complete online (or blended) courses, University of Calgary students are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security and malware updates, with current antivirus software enabled;
- Broadband internet connection, and a current and updated web browser;
- A webcam (built-in or external), and a microphone and speaker (built-in or external) or headset with microphone.

If you need access to other software programs to complete assignments, your instructor will provide relevant information and links.

If you have technical difficulties, contact IT support services. See <https://www.ucalgary.ca/pubs/calendar/current/student-campus-services-information-technologies-it.html>

Policy on the Use of Electronic Communication Devices

During student presentations, no devices may be displayed or in use. Laptops, tablets, and mobile phones may be used in class and tutorials only for course-related purposes and only if their use is not distracting others or negatively impacting the learning environment.

No audio or video recording is allowed in any class without the instructor's permission. Please familiarize yourself with the University's policy on the recording of lectures, which is outlined at <https://www.ucalgary.ca/pubs/calendar/current/e-6.html>, and carefully review the section on Instructor Copyright at the end of this outline.

Assignments and Evaluation

Weight	Assessed Components	Due
15%	<p>Participation. 5% per phase, as scheduled. Regular quality contributions to in-class or online discussion, activities, peer reviews of drafts or journal entries, group project collaboration efforts. Evidence includes attendance, speaking, active listening, written notes or comments, and group work in Google files. Graded for quality, quantity, and regularity.</p>	<p>Phases end:</p> <p>Sep 29, Nov 03, Dec 08</p>
20%	<p>Individual analytical essay. 1200 w. Analyze a different artifact than the ones you will analyze for your group's case study. Artifact: one or more online health or science articles totaling 1500-2000 words, OR one or more videos of a person delivering a health or science oral presentation (totaling 10-20 minutes). Write a unified, focused analysis essay on the artifact(s) that applies course-related concepts from rhetoric or framing.</p> <p>DRAFT (required): Submit a 600+ word .docx file via D2L to your designated group area by the deadline. A penalty may be applied to the final assignment score if the draft is late or incomplete. Follow instructions to give and receive peer reviews of drafts.</p> <p>FINAL: Submit .docx to the appropriate dropbox by the deadline.</p>	<p>Req.Draft: Sep 27</p> <p>Peer Review: Sep 29</p> <p>Final. Oct 04</p>
10%	<p>Midterm Exam. The exam is based on lectures and readings to date. It will be an online, open-book exam delivered asynchronously on D2L with an estimated time of 1 hour and 10 minutes plus 50% additional time for technical difficulties. The exam will be available before 12:00 am on Oct. 12. Therefore, you will have >24 hours to complete the exam after it is made available. Save your answers as you work on it. Submit it before the end of our usual class time 3:15pm on Oct. 13th (our exam time will replace this scheduled class period).</p> <p>The exam consists of multi-select and short-answer critical thinking questions. The question set will be randomly generated from a confidential question library so that each student will have a unique set of questions at the same level of difficulty.</p> <p>Contingency plans for technology problems and other issues may include (but are not limited to) additional time for completion of the assessment, or an alternative time to complete the assessment for students that experienced issues. Contact the instructor in advance if you know you will encounter a problem, and contact the instructor immediately if you have a problem during the exam period, providing relevant verifiable documentation when possible.</p>	<p>Available: Oct 12</p> <p>Due: Oct 13, 3:15pm</p>
20%	<p>Group presentation video. Up to 22 minutes depending on group size (max. 4 members, see "Group Policies" below). This presentation functions as a group progress report. The body provides a focused selection of each individual's research findings to date.</p> <p>Collaborate within a Google Slides file shared with the instructor, which serves as part of the record of your group participation.</p>	<p>Req.Draft: Oct 25</p> <p>Final video(s): Nov 01</p>

	<p>DRAFT of slides + notes (required): Download the draft from Google Slides as a PDF and submit it in your Presentation assignment dropbox. It should be a single set of presentation slides with explanatory notes in the “notes pane” under each content slide. A penalty may apply to a group’s or individual’s final assignment score for a draft that is late or incomplete.</p> <p>FINAL: Co-produce a single video (preferred) or a set of videos by separate group members lined up to be played in sequence. Submit the final file(s) in D2L Presentation Discussion area as a link to a post (for the peer response activity), AND in your Group Presentation assignment dropbox.</p>	Peer response: Nov. 03
10%	<p>Final Exam. The open-book online exam is based on lectures and readings since the midterm. The format, estimated time, and contingency plans are the same as for the midterm (see above).</p> <p>The exam will be available before 12:00 am on Nov. 16 and is due before the end of our usual class time 3:15pm on Nov. 17th (our exam time will replace this scheduled class period).</p>	Available: Nov 16 Due: Nov 17, 3:15pm
25%	<p>Group research report. 1400-5000w depending on group size (max 4 students, see “Group Policies” below). This report sets up the issue and background and a small corpus of primary public media and/or scientific artifacts on a unified topic or issue. Each member analyzes a different portion of the corpus or analyzes it from a slightly different theoretical perspective in their own subsection(s) of the report. The discussion draws on course-related theories from cited secondary sources to yield insights into health and/or science communication.</p> <p>During the term, groups collaboratively author the report within a Google Docs file shared with the instructor, which serves as part of the record of one’s group participation.</p> <p>DRAFT (required): Download the draft from Google Docs as a Word .docx file and submit to your designated peer review group. A penalty may apply to a group’s or individual’s final assignment score for drafts that are late or incomplete. Follow instructions to give and receive peer reviews of drafts during class time as scheduled.</p> <p>FINAL: The entire document is downloaded and formatted in MS Word prior to submission as a .docx file to the group’s submission area in D2L.</p>	Req.Draft: Nov 24 Peer Review: Nov 29 Final: Dec 08

Registrar-scheduled Final Examination: No

Note: You do not have to complete all the assignments and exams in order to receive a passing grade in this course.

Assignment Length

Time length of presentations and word length of essays are given as hard minimums or as min.-max. ranges. Word counts are automatically calculated by selecting text in MS Word or Google Docs.

In writing assignments, official word length only includes a student author's original sentences within paragraphs in the body. Word count commonly excludes some derivative or non-original content required by an academic assignment such as title pages, reference lists, figure or table captions, explanatory footnotes, data tables, appendices, and long "block" quotations of 40 words or more.

Penalties may begin to accrue after falling below the minimum and may rise for every 10% below the minimum. An assignment or section may be up to 10% longer without penalty. If a passage includes many in-text citations (author, year, page numbers), it may mildly exceed the 10% excess length to accommodate this ethical requirement.

Submission of Assignments

Please submit all assignments in class or by uploading them to the designated D2L dropbox. Include your name and ID number on all assignments (except omit ID number on materials to be shared with peers). Be sure to keep a copy of each submitted assignment and to submit the proper version.

Private information related to individual students is treated with the utmost regard by University of Calgary faculty. Student assignments will be accessible only by the authorized course faculty, and personal information is collected in accordance with the *Freedom of Information and Protection of Privacy (FOIP) Act*. Please note that instructors may use audio or video recording for lesson capture, assessment of student learning, and self-assessment of teaching practices.

Policy for Late Assignments

All final graded assignments (except for drafts) will have a 24-hour grace period for late online submission without penalty. Assignments submitted after the deadline or after the grace period may be penalized with the loss of 5% or a partial letter grade (e.g.: A- to B+) for each day late. If you must reschedule your presentation or a presentation-review date without a valid excuse, -5% per reschedule. Late take-home exams will receive -5% for every hour late.

Student Accommodations

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS); SAS will process the request and issue letters of accommodation to instructors. For information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/. Students who require an accommodation based on a protected ground other than disability should communicate this need in writing to their Instructor. For the full policy on Student Accommodations, see <https://www.ucalgary.ca/legal-services/university-policies-procedures/student-accommodation-policy>

Students seeking accommodation for transient illnesses (e.g., the flu) or another legitimate reason should contact their instructors. Whenever possible, students should provide supporting documentation to support their request; however, instructors may not require a medical note. For information on the use of a statutory declaration, see the *University Calendar*: <https://www.ucalgary.ca/pubs/calendar/current/m-1.html>

Group policies

If a student has valid reasons for performing the group assignments as an individual, they must receive instructor approval before groups are formed. After group formation, a student may at any time become ill, drop the course, not fulfill their share of responsibilities, or fail to meet internal group deadlines or course deadlines. Some students will inevitably make higher quality and quantity contributions than others. These factors are not fully within the control of the instructor or the group. Therefore, accommodations are built into the course.

If necessary, groups or individuals are invited to make a request to the instructor to change their group composition by two checkpoints for each group assignment: no later than 3 days after a Draft submission, or no later than 5 days before the Final submission. There is no grade penalty for a group composition change, but penalties specified above apply to incomplete or late group drafts or individuals' missing or incomplete sections of drafts. Handling a group change as responsibly and ethically as possible may be reflected in individuals' participation scores.

The instructor may make a change to group composition at any time. Decisions may involve the instructor's review of the draft's process of collaboration in shared Google files. Full details of a decision may need to remain confidential because some reasons may be of a private nature, such as documented health problems.

Group assignments are structured in a modular fashion to separate individually-authored sections from group-authored sections. This structure also permits the individual sections of departing group members to be removed if a group change is necessary, while group material co-authored prior to a group split may be inherited by all its authors.

By default, everyone in the group receives the same grade based on assignment quality. However, based on authorship of sections and group members' declared roles, an individual group member may receive a confidential grade adjustment after the assignment is graded and returned to the group. An individual's higher-quality contributions may be rewarded with a bonus so that they do not suffer an unfair penalty for the poorer-quality work of other group members, while another individual's poorer-quality work or late sections may receive appropriately lower individual scores and individual penalties.

Expectations for Writing

Department policy directs that all written assignments and, to a lesser extent, written exam responses be assessed at least partly on writing skills. Writing skills include not only surface correctness (grammar, punctuation, sentence structure, etc.) but also general clarity and organization and proper documentation of research sources. For further information, please refer to the *University of Calgary Calendar* section on writing across the curriculum: <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>

Grading & Department of Communication, Media and Film Grade Scale

The following table outlines the grade scale percentage equivalents used in the Department of Communication, Media and Film. Final grades are reported as letter grades. For components graded using percentages or numerical scores, those values will be used directly in calculating the final course grade, while for components graded using letter grades, the letter grades will be converted to the midpoint values listed in the final column of the table below in calculating the final course grade.

In this course, letter grades will be used for presentations and written assignments, and it is possible to receive a borderline grade on an assignment, i.e. A-/B+, 85%. Percentage or numerical grades will be used for exams and participation grades.

Group members will normally receive the same grade on assignments. However, the instructor reserves the right to award differential grades based on group peer reviews or information indicating significantly uneven contributions by group members (see “Group Policies” above).

Grade Point Value	Description	Grade	Dept of CMF grade scale equivalents*	Letter grade % equivalent for calculations*
4.00	Outstanding performance	A+	96 - 100%	98.0%
4.00	Excellent performance	A	90 - 95.99%	93.0%
3.70	Approaching excellent performance	A -	85 - 89.99%	87.5%
3.30	Exceeding good performance	B+	80 - 84.99%	82.5%
3.00	Good performance	B	75 - 79.99%	77.5%
2.70	Approaching good performance	B-	70 - 74.99%	72.5%
2.30	Exceeding satisfactory performance	C+	65 - 69.99%	67.5%
2.00	Satisfactory performance	C	60 - 64.99%	62.5%
1.70	Approaching satisfactory performance	C-	55 - 59.99%	57.5%
1.30	Marginal pass. Insufficient preparation for subsequent courses in the same subject	D+	53 - 54.99%	54.0%
1.00	Minimal pass. Insufficient preparation for subsequent courses in the same subject	D	50 - 52.99%	51.5%
0.00	Failure. Did not meet course requirements.	F	0 - 49.99%	0%

* Column 4: If percentages are used to calculate final grades, then grades falling within these ranges will be translated to the corresponding letter grades. Column 5: These percentage equivalents will be used for calculating final grades unless an alternative method of final grade calculation is outlined above.

Plagiarism

Using any source whatsoever without clearly documenting it is a serious academic offense. Consequences include failure on the assignment, failure in the course and possibly suspension or expulsion from the university. These requirements apply to all assignments and sources, including those in non-traditional formats such as Web pages or visual media.

You must document not only direct quotations but also paraphrases and ideas where they appear in your text. A reference list at the end is insufficient by itself. **In-text citations must be provided, and readers must be able to tell exactly where your words and ideas end and other people’s words and ideas begin.** Wording taken directly from a source must be enclosed within quotation marks (or, for long quotations, presented in the format prescribed

by the documentation style you are using). Paraphrased information must not follow the original wording and sentence structure with only slight word substitutions here and there.

For information on citation and documentation styles (MLA, APA, Chicago, IEEE, etc.), visit the Student Success Centre resource links at <https://ucalgary.ca/student-services/student-success/writing-support> or the Purdue Online Writing Lab (OWL) Research and Citation Resources at https://owl.purdue.edu/owl/research_and_citation/resources.html

If you need help with your writing or have questions about citing sources, consult your instructor or visit the Student Success Centre, Taylor Family Digital Library. To book an appointment, go to <https://ucalgary.ca/student-services/student-success/writing-support>

Instructor Intellectual Property & Copyright Legislation

Course materials created by the instructor (including lectures, 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 instructor. 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 same course section and term may be allowed under fair dealing. Check with the instructor if you have any questions about sharing materials with classmates.

To ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes & electronic versions of textbooks), all students are required to read the *University of Calgary Policy on Acceptable Use of Material Protected by Copyright* at <https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy> and the requirements of the *Copyright Act* (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

Academic Misconduct

For information on academic misconduct and its consequences, please see the *University of Calgary Calendar* at <http://www.ucalgary.ca/pubs/calendar/current/k.html>

Research Ethics

Whenever you perform research with human participants, including surveys, interviews, or observations as part of your university studies, you are responsible for obtaining research ethics approval and for following university research ethics guidelines. In some cases, your instructors may apply for course-based research ethics approval for certain assignments, and in those cases, they must review and approve your research plans and supervise your research. For more information about your research ethics responsibilities, please see <https://arts.ucalgary.ca/research/arts-researchers/resources-researchers-and-instructors/ethics>

This course involves a course-based research activity (See Assignments and Evaluation) for which the instructor is in the process of gaining official approval **from the Faculty of Arts Research Ethics Committee** as of August 16, 2021.

<https://research.ucalgary.ca/sites/default/files/RSO%20Docs/CFREB/instructor-guidance-course-based-July-4-2020.pdf>

Deferrals of Course Work and Requests for Reappraisal

For university regulations and procedures related to deferral of term work, see <https://www.ucalgary.ca/pubs/calendar/current/g-7.html>

For information about deferrals of final examinations, see <https://www.ucalgary.ca/pubs/calendar/current/g-6.html>

For information about requesting a reappraisal of course work or of a final grade, see <https://www.ucalgary.ca/pubs/calendar/current/i.html>

Student Support Services and Resources

Please see <https://www.ucalgary.ca/registrar/registration/course-outlines> for information about student support services and resources, including Wellness and Mental Health Resources, Student Success programs and services, the Student Ombuds Office, the Student Union, and Safewalk. For resources on D2L, Zoom, Yuja, etc., see <https://elearn.ucalgary.ca/desire2learn/home/students>. (Find the topic menu under the icon to the left of the ELEARN banner.)

Schedule of Lecture Topics and Readings

This is a draft of the schedule. The official schedule will be kept up to date online at <https://docs.google.com/spreadsheets/d/1Lvwiu8Y9NI24-UINq7hRnaZfr-ieJ66tFbRrU8NzZuU/edit#gid=0>

Date	Day	Deadlines	%	Readings for homework, lecture topics
2021-09-08	Wed			Intro to course, issues in health and science communication, scientific literacy. (Veritasium videos on clickbait in science, misconceptions about global warming; Koehrsen on how [not] to lie with statistics.)
2021-09-13	Mon			Health communication theory & research (Elliot 2014, Gwyn 2001); Lecture and advice on researching and conducting a critical analysis, Group and individual assignments
2021-09-15	Wed			Rhetorical analysis of health & science comm (Booth 2004 preface, Defossez 2016 rhetorics of patient agency)
2021-09-20	Mon			Framing analysis of health communication (Entman 1993 on framing; Lucyk, 2016 Framing of social determinants of health in news media)
2021-09-22	Wed			Developing a draft (Lecture/handouts), Rhetological fallacies
2021-09-27	Mon	Draft of individual essay	Req	Reviewing a draft for content, argument, structure (Lecture / handouts)
2021-09-29	Wed	In-class peer review, Phase 1 participation ends	req.	Lecture on sharpening your style, APA citation and references; Time in class for peer review
2021-10-04	Mon	Individual essay due	20%	Intro to scientific and medical literacy for the purpose of critical analysis and performing citizen/media communication (Lecture/handouts)
2021-10-06	Wed			Groups and individuals in medicine, public scientific debate (Kent & Hayward 2017 when averages hide; Fisher et al 2018 Group to individual generalizability, and two brief letters in reply to Fisher)
2021-10-11	Mon	No classes: Thanksgiving		

2021-10-13	Wed	Midterm exam due 3:15p	10%	Class time is being used for the online exam.
2021-10-18	Mon			Analyzing and interpreting data, arguments (Veritasium on the science of thinking; Whyte & Kelly 2018, The reference range)
2021-10-20	Wed			Data visualization (Weissberger, 2015, Beyond bar and line graphs)
2021-10-25	Mon	Presentation slides due	req.	Time for group work; Schedule next week's consultation with prof.
2021-10-27	Wed	(No peer review of draft)		Study design, research methods (Veritasium, 2016 on cognitive ease; Goldberg et al, 2013 on medical research designs)
2021-11-01	Mon	Group presentation video(s) due	20%	Groups have an appointment with prof this week to consult over progress in research
2021-11-03	Wed	Phase 2 participation ends	5%	Analyzing clinical trials, scientific publishing (Veritasium, 2016 on error in published research; Deaton & Cartwright, 2018, Critiquing randomized controlled trials (RCTs))
2021-11-08	Mon	Reading week		
2021-11-10	Wed	Reading week		
2021-11-15	Mon			Public dialogue about science, future prospects (Reincke et al, 2020 From deficit to dialogue)
2021-11-17	Wed	Final exam due 3:15p	10%	Class time is being used for the online exam.
2021-11-22	Mon			Time for group work; Prof available for consultation
2021-11-24	Wed	Draft of report due	Req.	Time for group work; Prof available for consultation
2021-11-29	Mon	Peer review of group drafts		Time in class for peer review
2021-12-01	Wed			Tips for finalizing and formatting the final report in MS word. Course evaluations.
2021-12-06	Mon			Time for group work; Prof available for consultation
2021-12-08	Wed	Group report due	25%	
		Phase 3 participation ends	5%	

Preliminary Reading list

NOTE: Minor changes may be made during the term. See the online version of the schedule.

Adolf, J. K., & Fried, E. I. (2019). [Letter in reply to Fisher] Ergodicity is sufficient but not necessary for group-to-individual generalizability. *Proceedings of the National Academy of Sciences*, 116(14), 6540–6541.
<https://doi.org/10.1073/pnas.1818675116>

- Booth, W. C. (2004). Preface. In *The rhetoric of rhetoric: The quest for effective communication*. Wiley. <https://download.e-booksshelf.de/download/0000/5793/32/L-G-0000579332-0002344783.pdf>
- Deaton, A., & Cartwright, N. (2018). Understanding and misunderstanding randomized controlled trials. *Social Science & Medicine*, 210, 2–21. <https://doi.org/10.1016/j.socscimed.2017.12.005>
- Defossez, E. (2016). Between control and constraint: Charting three rhetorics of patient agency. *Poroi*, 12(1). <https://doi.org/10.13008/2151-2957.1213>
- Elliott, C. D. (2014). Communication and Health: An Interrogation. *Canadian Journal of Communication*, 39(2), Article 2. <https://doi.org/10.22230/cjc.2014v39n2a2779>
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Fisher, A. J., Medaglia, J. D., & Jeronimus, B. F. (2018). Lack of group-to-individual generalizability is a threat to human subjects research. *Proceedings of the National Academy of Sciences*, 115(27), E6106–E6115. <https://doi.org/10.1073/pnas.1711978115>
- Goldberg, R. J., McManus, D. D., & Allison, J. (2013). Greater knowledge and appreciation of commonly used research study designs. *The American Journal of Medicine*, 126(2), 169.e1-169.e8. <https://doi.org/10.1016/j.amjmed.2012.09.011>
- Gwyn, R. (2001). Chapter 1: The body, disease and discourse. In *Communicating Health and Illness* (pp. 13–37). SAGE. <https://doi.org/10.4135/9781446219553>
- Information is Beautiful. (n.d.) [recommended resource] Rhetological fallacies. <https://www.informationisbeautiful.net/visualizations/rhetological-fallacies/>
- International Committee of Medical Journal Editors. (2018). [not a required reading; a resource] *Recommendations for the conduct, reporting, editing, and publication of scholarly work in medical journals*. <http://www.icmje.org/icmje-recommendations.pdf>
- Kaptchuk, T. J. (2003). Effect of interpretive bias on research evidence. *BMJ: British Medical Journal*, 326(7404), 1453–1455. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1126323/>
- Kent, D., & Hayward, R. (2017, February 6). When averages hide individual differences in clinical trials. *American Scientist*. <https://www.americanscientist.org/article/when-averages-hide-individual-differences-in-clinical-trials>
- Koehrsen, W. (2019, July 28). Lessons from How to Lie with Statistics. *Medium*. <https://towardsdatascience.com/lessons-from-how-to-lie-with-statistics-57060c0d2f19>
- Lucyk, K. (2016). They are not my problem: A content and framing analysis of references to the social determinants of health within Canadian news media, 1993-2014. *Canadian Journal of Communication*, 41(4), Article 4. <https://doi.org/10.22230/cjc.2016v41n4a3034>
- Medaglia, J. D., Jeronimus, B. F., & Fisher, A. J. (2019). [Letter] Reply to Adolf and Fried: Conditional equivalence and imperatives for person-level science. *Proceedings of the National Academy of Sciences*, 116(14), 6542–6543. <https://doi.org/10.1073/pnas.1820221116>
- O'Brien, B. C., Harris, I. B., Beckman, T. J., Reed, D. A., & Cook, D. A. (2014). [not a required reading; a resource] Standards for reporting qualitative research: A synthesis of recommendations. *Academic Medicine: Journal of the Association of*

American Medical Colleges, 89(9), 1245–1251.
<https://doi.org/10.1097/ACM.0000000000000388>

Reincke, C. M., Bredenoord, A. L., & van Mil, M. H. (2020). From deficit to dialogue in science communication: The dialogue communication model requires additional roles from scientists. *EMBO Reports*, 21(9), e51278.
<https://doi.org/10.15252/embr.202051278>

Veritasium. (2014, September 22). [Video] *13 Misconceptions about global warming*.
<https://www.youtube.com/watch?v=OWXoRSIxyIU>

Veritasium. (2016a, July 21). [Video] *The illusion of truth*.
<https://www.youtube.com/watch?v=cebFWOlX848>

Veritasium. (2016b, August 11). [Video] *Is most published research wrong?*
<https://www.youtube.com/watch?v=42QuXLuCH3Q>

Veritasium. (2017, March 2). [Video] *The science of thinking*.
<https://www.youtube.com/watch?v=UBVV8pch1dM>

Veritasium. (2021, August 17). [Video] *Clickbait is unreasonably effective*.
<https://youtu.be/S2xHZPH5Sng>

Weissgerber, T. L., Milic, N. M., Winham, S. J., & Garovic, V. D. (2015). Beyond bar and line graphs: Time for a new data presentation paradigm. *PLOS Biology*, 13(4), e1002128.
<https://doi.org/10.1371/journal.pbio.1002128>

Whyte, M. B., & Kelly, P. (2018). The normal range: It is not normal and it is not a range. *Postgraduate Medical Journal*, 94(1117), 613–616.
<https://doi.org/10.1136/postgradmedj-2018-135983>