McGill University is located on land that has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. McGill honours, recognizes, and respects these nations as the traditional stewards of the lands and waters on which we meet today. In our course, let's discuss how our projects and individual practices can work toward Truth and Reconciliation Commission's calls to action https://www.mcgill.ca/indigenous/.

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FSCI 500   Science Communication and Outreach   Winter 2023
Course Start and End Dates: Friday, January 6th to Friday, April 7th
Class Times: 11:35 am-2:25 pm
Location: BIRKS 205 (Bring inside shoes or wear warm socks—we're asked to leave our winter footwear at the entrance to Birks.)

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Instructor: Dr. Diane Dechief (pronounced deCHEF)
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Office Hours: by appointment
Email: diane.dechief@mcgill.ca

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Course Description and Objectives: Welcome to the second run of FSCI 500! We're excited to have you here. In this course, we will examine, critique, and imagine opportunities and mechanisms for the public to engage with the processes and outcomes of scientific research. Guided by theory and research in science education, science communication, and science outreach studies, we will question and potentially unsettle our current perspectives of science by thinking critically about representations of science as objective, acultural, and value-free. We'll focus especially on how outreach and science communication can raise important questions and, through practice and critique, make science more accountable and inclusive. Together, we will consider who has been historically overlooked in efforts to engage the public in scientific knowledge, and we will work to address this by exploring possibilities for inclusive practices in science communication and outreach.

FSCI 500 is structured as a series of weekly opportunities to learn about the theory and practice of science communication and outreach. Several guests will share their perspectives and experiences to help us consider the ways that of science communication and outreach can either reproduce or disrupt traditional representations and forms of engagement in science. We will reflect on our individual values in relation to science and inclusion vis-a-vis our own participation in these practices.

Our course goal is that by the end of the term, you will be able to:
· Think and communicate critically about science practices, outreach, and communication
· Engage with theories and research in the fields of science communication, science education, outreach studies, communication studies
· Plan for potential participants' or audiences' needs

· Recognize biases in science practices and ways in which science communication and outreach can be exclusionary
· Create science learning experiences that are inclusive and accessible
· Communicate deliberately and compellingly about scientific research and practices
· Plan and promote science communication or outreach activities for particular or diverse audiences

Major assignments include planning and promoting an outreach event or science communication project, an audio or visual "explainer" and a critique.

Course materials: Weekly readings, podcasts, or videos will be posted on myCourses. These materials are varied and will serve as theory, instruction, and examples.

Assignments	Due date	Value	Length
Engagement	Ongoing	20%	--
Inclusive summary	Jan. 30	10%	250 words + planning form
Science explainer	Feb. 13	20%	1-2 page infographic or 2-3 minute audio recording
Team project: proposal	Feb. ~24	5%	300 words
Team project: plan	March 24	20%	2500 words
Team project: promotion	March 27	10%	1000 words
Critique	Apr. 7	15%	500 words

(Note: One double-spaced page, excluding images, is roughly equivalent to 250 words.)

Engagement activities 20%
Each week, there will be one required engagement activity. It may be an output from a group activity (e.g., a summary or feedback) or a small individual activity to help you reflect, prepare, or scaffold your learning for the larger assignments. Guidelines will be provided in class and shared on myCourses. These activities will be marked for completion and will comprise 20% of your mark.

Inclusive summary (250 words + complete form) 10%
Why? Brief summaries of academic research articles written for non-specialist audiences are increasingly mandated by academic journals. In FSCI 500, we have an opportunity to practice crafting and critiquing these short but important texts.
How? Following a presentation by the science librarian(s) working on FSCI 500, you'll have an opportunity to select a journal article and to summarize it for a non-specialist audience. Consider the writing choices that you'll need to make to share the most significant findings of the paper in an inclusive manner.

Explainer visual (1-2 pages) or audio recording (2-3 minutes) 20%
Why? Practice communicating with an audience that you have selected about a research or scientific topic that matters to you and of which you are knowledgeable.
How? Consider what kinds of information your selected audience will be most interested in (e.g., findings of research, methods, context, significance for the future) and craft this information in a way that your audience will find compelling. Consider order of information, level of detail, word choice (e.g., avoiding jargon), and visual, audio, and story elements.

Science communication or outreach proposal, plan, and promotion (Team Project) Total 35%
Why? In groups of 3 to 4, you will practice planning and promoting an outreach activity of your choosing. This assignment will help your understanding of how to sequence activities, orchestrate discussions, and plan for instruction around Big Ideas of science.
How? With attention to your audience or participants, propose an outreach or science communication activity in a short assignment. We will provide feedback on your activity, and suggestions for structure and delivery. You will then draft the assignment including information about who your audience is, what you hope they will learn from the activity, what Big Ideas of science this event addresses, a justification for the sequence of activities, and the kinds of questions and "discourse tools" you will use to engage your audience in meaningful science talk. In the final part of this assignment, you will develop a plan for promoting the event. Here you will discuss considerations for equity, diversity and inclusion (EDI), and how you will reach out to communities through various forms of media.

Critique (500 words) 15%
Why? Your final assignment asks you to critique an existing outreach or science communication project by engaging the frameworks and strategies that you've been learning about.
How? Select an outreach event or science communication medium that has your attention and write a short, succinct critique for the audience of this course.

Requirements, Policies, and Procedures:
- **Completing engagement activities is a must for success in this course—these are low-stakes activities that are marked for completion. You will have one week to complete each activity, but most can be finalized during class time. Details can be found in the Engagement folder on myCourses.**
- **Assignment Submission:** All assignments must be submitted, on their due date, to the correct folder on myCourses. Accordingly, assignments submitted via e-mail or in any other medium will not be accepted unless we have given prior written permission.
- **Format:** Unless otherwise stated, all assignments should be submitted double-spaced, in Times New Roman 12-point font, left-aligned, with page numbers in the bottom right corner of every page. When a citation format is required, please use APA 7.
- **Consequences of Late Submission:** Late work (i.e., work not submitted by the deadline in the appropriate format) will be penalized by 2% per day, including weekends. If you know that it will be difficult to meet one of the deadlines that is set out in the syllabus, please write to your instructor in advance. Exceptions that have already been determined to be acceptable include documented medical, family, and personal emergencies and observance of holy days. Students planning to observe holy days should notify the instructor by email **at the beginning of the course.** Holy days that are already acknowledged at McGill are listed here: https://www.mcgill.ca/importantdates/holy-days-0**.**
- **This course is administered via *myCourses***. Students are advised *to check myCourses on weekdays*. Failure to do so may result in your missing important information. **Neither absence from class nor failure to check *myCourses* is an acceptable excuse for being unaware of important course-related information**.
- Please be sure to submit only your own original work in our course. None of the assignments can be generated by AI tools unless that is the focus of one of your projects and you are sharing examples. Please refer to the Academic Integrity details at the end of this document for the University's guidelines.
- **Recording class activities:** Students may not record any class proceedings or collect any electronic data (including photos and videos) from class activities without the express consent of the instructors.
- **Instructor generated course materials** (e.g., handouts, notes, summaries, test questions, recorded lectures, etc.) are **protected by law** and may not be copied or distributed in any form or in any medium without the explicit permission of the instructor. Note that infringements of copyright can be subject to follow up by the University under the Code of Student Conduct and Disciplinary Procedures.

Course Schedule—updates will be posted as a MyCourses Announcement

	Date	In-Class Content	Due/to do
1	January 6	What are the goals and challenges of science communication and outreach? -Introductions of people and course topics -River of Experience activity	
2	January 13	Sharing specialized science -Accessing sources | Guests: Science librarian April Colosimo and Data librarian Giovanna Badia -Inclusive summaries guidelines	
3	January 20	What kinds of outreach and science communication are happening at or near McGill? -Science Outreach/Communication panel -Inclusive summaries peer feedback	
4	January 27	Making science compelling -Visual and audio explainer assignments introduced Guest: Rackeb Tesfaye	Due: Inclusive summary (Jan 30)
5	February 3	What is the "nature" of science and the value of talking about science? Guest: Dr. Allison Gonsalves -Feedback: discuss explainer assignments in small groups	
6	February 10	What is inquiry? -How to plan an inquiry-focussed outreach project Guest: Rebeca Esquivel -Plan teams for project	Due: Explainer (Feb 13)
7	February 17	-Begin project planning -mid-term course check-in	
8	February 24	Project planning +	Due: Project proposal (~Feb 24th)
	Feb 27-March 3	**READING WEEK**	TAKE A BREAK
9	March 10	Misinformation	
10	March 17	Science collaboration with Indigenous communities	
11	March 24	Anti-racist STEM outreach	**Due: Project and promotion**
12	March 31	Science meets art Guest: Victoria Glynn Presentations of work Receive feedback on plan and promotion	
13	April 7	Presentations of work	**Final critique due**

General reference: Carpenter, S. (2020). *The Craft of Science Writing: Selections from The Open Notebook.* The Open Notebook.

Grading System

Letter Grade	Numerical Range
A	85-100
A-	80-84
B+	75-79
B	70-74
B-	65-69
C+	60-64
C	55-59
D	50-54

McGill Scientific Writing Initiative (MSWI)

Are you interested in science communication and want to get involved in the McGill community? The McGill Scientific Writing Initiative (MSWI) is an student-led group of passionate students from all fields and programs at McGill. We work to provide resources and workshops for students to help them navigate McGill student life as well as the intricacies of scientific communication and outreach. We welcome you to join us and get involved by attending our workshops, visiting our website (https://www.mcgill-mswi.com), signing up for our annual SciComm Case Competition (https://www.mcgill-mswi.com/scicomm), or by joining our supportive team to help other students continue to hone their communication skills. Contact us by simply sending an email to mcgill.swi@gmail.com to see how you can get more involved!

University Policies, Procedures, and Resources

1. McGill Resources for Academic Success

(a) Inclusive Learning Environment
McGill is committed to providing an inclusive and supportive learning environment. If you experience barriers to learning in this course, do not hesitate to discuss them with your instructor. If you have a special learning need or disability, you are encouraged to contact the Office for Students with Disabilities: https://www.mcgill.ca/osd/.

(b) Health and Wellness
Student wellbeing is a priority for the University. To help students find the support they need as quickly as possible, all of McGill's health and wellness resources have been integrated into a single Student Wellness Hub, a one-stop shop for everything related to physical and mental health. If you need access to services or would like more information, you are strongly encouraged to visit the Virtual Hub: https://www.mcgill.ca/wellness-hub/.

(c) McGill Writing Centre Tutorial Service
Writing well is key to both academic and professional success. The McGill Writing Centre (MWC) offers credit courses in academic and professional writing, and a tutorial service open to all McGill students: https://www.mcgill.ca/mwc/tutorial-service. The tutorial service offers one-to-one sessions with seasoned instructors and experienced tutors who will work with you at any stage of the writing process.

During the campus closure period, there will be no tutors on site and no administrative staff at the MWC to answer inquiries. Tutoring sessions will be conducted online via the Microsoft Teams platform. This application is available for free to all students through Office 365: https://www.mcgill.ca/it/office365-software. For information about how to book an appointment through Microsoft Teams, please go to https://www.mcgill.ca/mwc/tutorial-service.

(d) McGill Library
Discover the McGill Library's rich array of resources. Watch a short welcome video in English, French, Arabic, Chinese, Hindi, Persian, Spanish, or Urdu: https://www.mcgill.ca/library/orientation.

2. Academic Conduct

(a) Academic Integrity

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism, and other academic offences under the *Code of Student Conduct and Disciplinary Procedures:* https://www.mcgill.ca/students/srr/honest.

L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le *Code de conduite de l'étudiant et des procédures disciplinaires :* https://www.mcgill.ca/students/srr/honest).

Students are responsible for knowing McGill's rules and regulations concerning academic honesty, which can be found on the Students Rights and Responsibilities website: https://www.mcgill.ca/students/srr/. Violations of academic integrity undermine not only the value of honest students' work, but also the academic integrity of the University and the value of a McGill credential. The Student Rights and Responsibilities website provides resources that can help students avoid dishonest work, and an explanation of the disciplinary measures that go with it.

As of Fall 2019, all newly admitted students must complete the Academic Integrity Tutorial (AIT) in Minerva during their first semester at McGill. Failure to complete the tutorial will place a hold in Minerva and restrict the student from registering for courses in the following semester. The Tutorial can be accessed as follows: **Minerva →Student Menu →Academic Integrity Tutorial.**

(b) Respectful and Professional Communication
This course is designed to help you learn to communicate professionally both during your time at McGill and in your future workplaces. In keeping with McGill's policies on student rights and responsibilities, it is expected that during class discussions and small group interactions you will communicate constructively and respectfully. Sexist, racist, homophobic, ageist, and ableist expressions will not be tolerated in the classroom or during group meetings held outside of class.

(c) Course Evaluations
End-of-course evaluations are one of the ways that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You will be notified by e-mail when the evaluations are available. Please note that a minimum number of responses must be received for results to be available to students. It is extremely important to me that students fill out course evaluations. We read them carefully each year and make changes to my courses in response to student feedback. We will remind you many times to complete these at the end of term!

3. Policy Against Sexual Harassment and Violence
McGill University is committed to creating and sustaining a safe environment through proactive, visible, accessible, and effective approaches that seek to prevent and respond to sexual harassment and sexual violence. *McGill's Policy against Sexual Violence* underlines this commitment and ensures that procedures are in place to address complaints. To learn more, visit the Office for Sexual Violence Response, Support, and Education website: https://www.mcgill.ca/osvrse/.

Sexual Violence Training: "It Takes All of Us"
In accordance with a new law, Bill 151, Policy to Prevent and Fight Sexual Violence in Higher Education Institutions, McGill has implemented training measures for all community members. The online training is mandatory for everyone at McGill–all students, faculty, and administrative and support staff.

As of fall 2019, all newly admitted students must complete the sexual violence training course, called "It Takes All of Us," in *myCourses* during their first semester at McGill. Failure to complete the training will place a hold

in Minerva and restrict the student from registering for courses in the following semester. The training can be accessed through *myCourses* and will appear as a separate course in your profile.

4. Policy on Harassment and Discrimination
McGill University is committed to promoting an equitable environment where the fundamental dignity of all of its members is respected. The objectives of McGill's *Policy on Harassment and Discrimination Prohibited by Law* are to promote education and awareness about equity issues and to ensure that procedures are in place to address complaints: https://www.mcgill.ca/how-to-report/.

5. Inclusivity and safe spaces

As the instructors of this course, we endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me and the Office for Students with Disabilities, 514-398-6009.

We are committed to nurturing a space where students, teaching assistants, lecturers, and professors can all engage in the exchange of ideas and dialogue, without fear of being made to feel unwelcome or unsafe on account of biological sex, sexual orientation, gender identity or expression, race/ethnicity, religion, linguistic and cultural background, age, physical or mental ability, or any other aspect integral to one's personhood. We therefore recognize our responsibility, both individual and collective, to strive to establish and maintain an environment wherein all interactions are based on empathy and mutual respect for the person, acknowledging differences of perspectives, free from judgment, censure, and/or stigma.

6. Guidelines for the Academic Accommodation of Pregnant Students and Students Caring for Dependents
McGill acknowledges the challenges facing pregnant students and students caring for a dependent. McGill supports students in their desire to further their education while meeting their family obligations. A student is who is faced with a conflict between a responsibility in respect of pregnancy, or of care-giving responsibilities toward a dependent, and an academic obligation, may ask the University for academic accommodation in accordance with the guidelines found here: http://www.mcgill.ca/students/records/pregnant-students-and-dependants