

## **SIOC 209 Subversive Science - DRAFT**

200-320PM Tuesdays/Thursdays || OAR 150

### **Instructor**

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Professor of Environmental Physics and Complex Systems

Scripps Institution of Oceanography

Teaching Professor in Critical Gender Studies

Faculty Affiliate in Ethnic Studies and UCSD Labor Center

**Office Hours** (tentative – check web site for changes)

Tuesdays 100-150PM Mandeville Cafe

Thursdays 400-500PM Mandeville Cafe



*SIOC 209 will be conducted on stolen, colonized, occupied, unceded Kumeyaay Land. ¡La Lucha Sigue!*

**Course Web Site:** <https://courses.complex-systems-laboratory.org/sioc209>

### **Synopsis**

Western science originated and developed within societies characterized by concentrations of power and wealth, anti-Blackness and racism, cis-heteropatriarchy, exploitation of the more-than-human world and marginalized human populations, and associated injustices. SIOC 209 Subversive Science explores how justice might be foregrounded in the Earth and Oceanographic sciences using recent scholarship and experience with how to do so from a range of perspectives.

### **Beyond Brave Spaces**

The instructor of this course is dedicated to creating a learning environment of critical thinking and practice, where we collectively share, learn and produce knowledge. Drawing from Black Feminist Thinker bell hooks, I am committed to facilitating a collective space that includes:

- 'transgressing' to disrupt and dismantle the status quo;
- honoring and acknowledging the ways that people with different abilities learn, communicate, participate and interact;
- recognizing students' varying mobilities and lived experiences as sources of knowledge;
- working towards an accessible collective learning environment;
- supporting students through difficult conversations and creating an environment in which everyone might grapple with these topics and potentially move towards action;
- explicitly prioritizing nonlinear ways of learning and building relationships with each other.

### **Accountability**

"In order to have accountability you must be in a relationship with that person." – Mia Mingus

In this sense, part of the work of this course will be to develop relationships that go beyond the transactionalism of taking a course/receiving a grade and teaching a course/assigning grades.

Instructor: I welcome constructive comments and suggestions about the class to better make it a space for productively working, learning and growing together. I will provide class time to receive those suggestions. I will provide timely feedback to the best of my ability.

Students: Active engagement, doing the reading and completing assignments on time to the best of their ability. Contributing to class discussions, accepting responsibility for the learning of your classmates and of yourself. Aspects of the transactional part are outlined below.

### *Grading:*

- Engagement – includes participation during class verbally or in writing, posting comments to forums before or after class or/and actively assisting other students with their learning/providing learning mutual aid. **30%**
- Presentation on Subversive Science Methods – research an approach to foregrounding justice in STEM and present your findings to the class **30%**
- Presentation on Application of Subversive Science Methods – apply one or more of the subversive science methods discussed to a research/educational problem you are working on or interested in **40%**

A step-by-step instruction sheet for each of the assignments will be provided.

### **Attendance and Participation**

Learning in this class depends heavily on class discussions and working with and talking in groups, and attendance is strongly encouraged. Please actively participate verbally or with written comments during class. If illness, employment/fieldwork, childcare or caregiving responsibilities do not permit you to attend class in-person, please participate in the online forums and group discussion shared documents. Contact bt so we can work out a plan for you to maximize your participation.

Here are some principles for participation in SIOC 209:

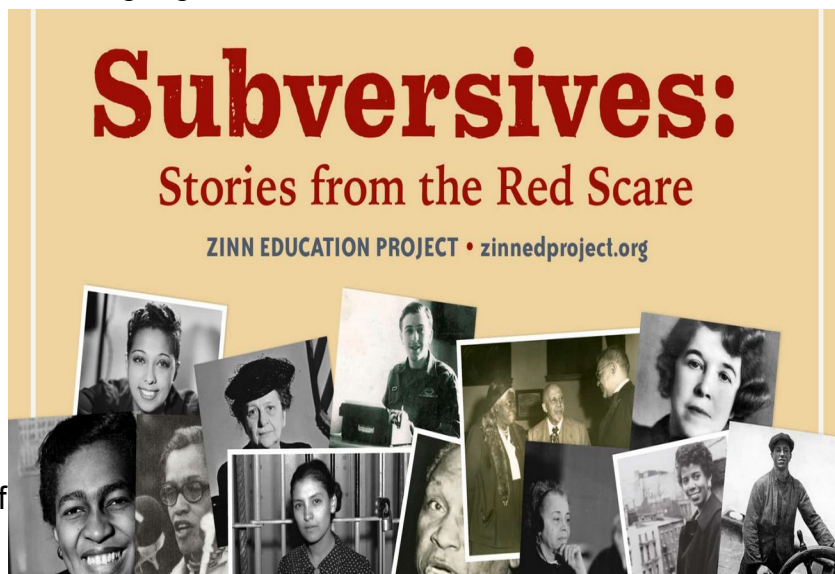
- Be physically and mentally present for yourself, for us, and for your classmates.
- Respect is key. Respect yourself, your classmates, and the academic goals of the course. Please do not interrupt others while they are speaking.
- Participation is not just speaking/typing but also active listening/reading – we are coming from different perspectives, backgrounds, and positionalities and we all have something to contribute to how we understand the readings and concepts.
- Step Up, Step Back: if you are participating more than others, step back and let others contribute; if you are participating less than others and have something to contribute, step up and participate more.
- Commit yourself to critically engage the material. Be an active participant in your education.
- Support your arguments by engaging the texts (academic settings necessitate scholarly claims).
- Although electronic devices make it easy for us to multi-task, if at all possible, please don't.
- The number one ground rule which we will all follow is to engage in respectful critical analysis and discussion in the classroom. Abusive and harsh language will not be tolerated.

### **Academic Integrity**

Plagiarism is not acceptable. AI is not critical and reflects harmful biases present in academic and broader societal discourses. AI draws upon the efforts of numerous unacknowledged others, and its use in SIOC 209 is considered to be plagiarism. Please refer to the “UCSD Policy on Integrity of Scholarship.”

### **Communications with Instructor**

Please let me know if you go by a different name than what is on your UCSD record. If you would like, I am happy to adjust your login to your preferred name.



## Sexual Violence and Sexual Harassment

In this class, we will discuss issues that many find difficult, painful and triggering. I invite you to relate your personal experiences where relevant to the academic discussion. However, I want you to be aware that UCSD requires instructors to file a report with the University's Title IX Officer if any students relate experiences with sexual harassment or sexual violence in class discussions, e-mail or written assignments, whether or not that occurred on campus. This could result in an investigation without that student's participation or consent.

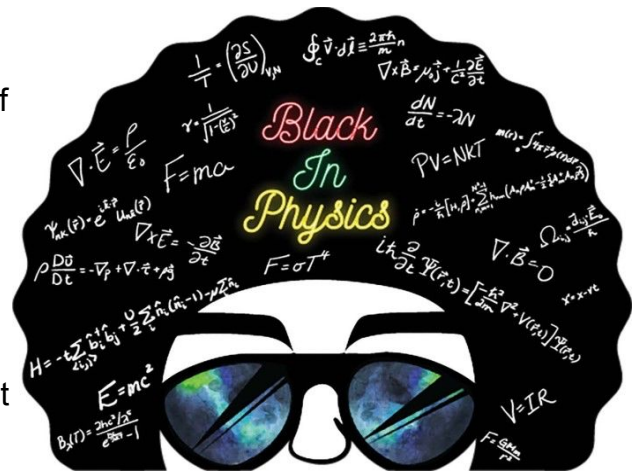
Campus Advocacy, Resources, and Education at the Sexual Assault Resource Center (CARE at SARC) -- CARE at SARC is an independent confidential campus resource for individuals impacted by sexual assault, relationship violence, and stalking. CARE at SARC also provides comprehensive prevention education and trainings for UC San Diego students, staff, faculty, organizations, and departments. CARE at SARC provides free and confidential services for students, staff and faculty who are survivors, or those supporting survivors. CARE at SARC serves as the primary point of contact for victims and survivors who need advocacy, support services and/or assistance with reporting options. CARE at SARC is on-call 24 hours a day and on weekends throughout the year. If you are in need of urgent support during non-business hours, weekends, or holidays, please call them at (858) 534-5793. <https://care.ucsd.edu/>

## Office Hours

If you have any questions regarding the readings and or assignments please connect with bt during office hours. If you cannot attend the scheduled office hours I also am available to connect by appointment. Please email me with your availability to request an appointment.

## Email Policy

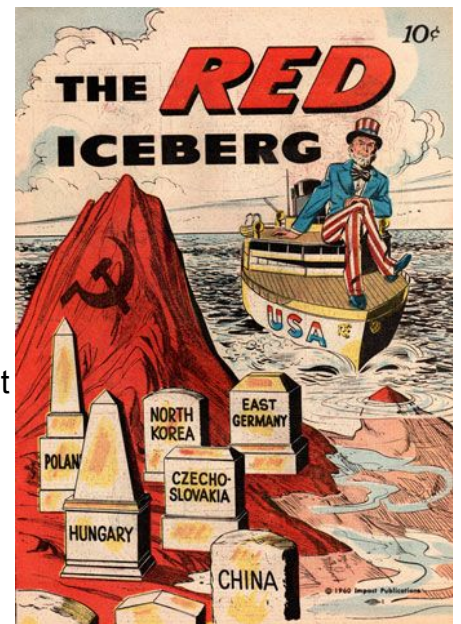
Please do not hesitate to e-mail me with any questions and or concerns. I check email during normal university hours and will respond within ~24 hours, however, I might not respond to emails over weekends.



Email is a good way for you to ask short, logistical questions and general inquiries about assignments. If you have questions that require an in-depth answer or conversation, please connect with me during office hours. Finally, I strongly encourage you to ask syllabus and assignment related questions in class. If you have a question it is likely that others also have the same question. When emailing include SIOC 209 as part of the subject line or header.

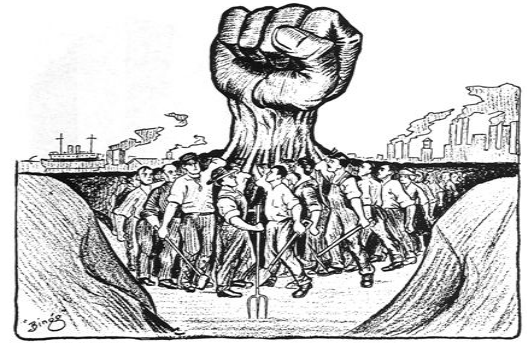
## Resources

In these stressful times, I believe that taking care of ourselves and supporting those around us, our friends and our family and our classmates and colleagues is more important than anything else. To that end, we will spend time in class checking in and endeavor to form a supportive community, despite the alienation of our isolation at a neoliberal university. If you need assistance in locating additional resources for disability accommodations, health, food, stress, transitional support, well-being, mental health, financial aid, job preparation, and community building do not hesitate to consult your instructor.



## Accommodations

If you need any accommodations for disability, illness, or any other reason please contact me so I can create an accommodation plan for your success. If you have a disability or other condition that compromises your ability to complete the requirements of this course, please inform me asap of your needs. I will make all reasonable efforts to accommodate you. Everyone should be able to take and thrive in SIOC 209!



## Email Exchange

If you miss a class, contact your peers for support!

Collaboration with your peers is a part of learning--this is **NOT** a competition! Check out the forums on the course web site.

new friend: \_\_\_\_\_ new friend's e-mail: \_\_\_\_\_

new friend: \_\_\_\_\_ new friend's e-mail: \_\_\_\_\_

new friend: \_\_\_\_\_ new friend's e-mail: \_\_\_\_\_

## Student Privacy

The SIOC 209 classroom is a place where students can express, explore and experiment with diverse viewpoints that might not be favored by systems of power. For that reason, please do not repeat and attribute ideas expressed in SIOC 209 outside the classroom, without permission. Additionally, audio, video or image recording in the SIOC 209 classroom are strictly prohibited.

## Tech Stuff

To download course materials or upload assignments, you must be logged in to the course web site:

<https://courses.complex-systems-laboratory.org/sioc209>

You will receive an e-mail from bt with login information during the first week of spring quarter.

Click on the login link at the top/left and fill in the login name and password that bt sent you. If it doesn't work, e-mail bt to reset the login/password or diagnose the problem. Note the automatic e-mail link for forgetting your password does not work. You must have cookies enabled, All web site features have been tested with Safari and Firefox.

## Reading/Viewing

Links for all reading/viewing is provided on the course web site. Please check the posted links as different editions/versions for some of the reading exist. I will provide a template to help take notes and with questions to think about for each reading assignment: downloadable from the Reading page.

## Student Safety

Some of the topics we discuss in SIOC 209 will be challenging and difficult for many of you. Your instructor and your fellow participants are here to support you through those difficult conversations. However, if you need to step outside the classroom, please feel free to do so.

In these challenging times, to insure the physical safety of all participants, please plan to attempt to arrive before the start of class and leave after class ends. Only registered students, students on the waitlist and those who have been approved by bt (at least one day notice) can enter the classroom, which is not a public space. Please defer to bt wrt who can be authorized to enter the classroom.

Thank you!

The SIOC Subversive Science syllabus is subject to change as needed. Reading and activities might be adjusted to take advantage of learning opportunities related to the content of SIOC 209. Office hours' location and times might vary throughout the quarter to best meet the needs of all students. :) Check the course web site for updates!

## **Course Flow**

Assigned Reading might change – if reading ahead, please consult bt!

## **Week One**

Tuesday: Course and People Introductions

Thursday: Basic Questions

What is Justice? What's the Problem? What is Subversion?

- BT Werner (2023) SIOC 209 Subversive Science Course Proposal
- Brian Clifton, Sam Lavigne and Francis Tseng (2024) White Collar Crime Risk Zones, The New Inquiry Magazine, Vol. 59: ABOLISH.

## **Week Two: Western Science, Colonialism, Ant-Blackness and Extractivism**

Tuesday

- Linda Tuhiwai Smith (1999) Decolonizing Methodologies: Research and Indigenous Peoples, Zed Books, Chapter 3, Colonizing Knowledges, 58-77.
- Gustave Lester and Tamara Pico (2021) The Colonial History of Geology in the United States, Insurrect! Part One and Part Two.
- Leanne Simpson and Naomi Klein (2013) Dancing the World into Being: A Conversation with Idle No More's Leanne Simpson, Yes! Magazine, March 6.

Thursday

- Max Liboiron (2021) Pollution is Colonialism, Duke University Press, Introduction p 1-35.
- Kyle Whyte (2018) Settler Colonialism, Ecology, and Environmental Injustice, Environment and Society, 9(1), 125-144.

## **Week Three: Western Science, Colonialism, Ant-Blackness and Extractivism**

Tuesday

- James Poskett (2021) Racial Science, In The Routledge Handbook of Science and Empire, 35-46. Routledge.
- Ruha Benjamin (2019) Race After Technology, Polity Books, Chapter 1: The New Jim Code.

Thursday

- T. Elon Dancy II, Kirsten T. Edwards and James Earl Davis (2018) Historically White Universities and Plantation Politics: Anti-Blackness and Higher Education in the Black Lives Matter Era, Urban Education, 53(2), 176–219.
- Apriel K. Hodari, Shayna B. Krammes, Chanda Prescod-Weinstein, Brian D. Nord, Jessica N. Esquivel, and Kétévi A. Assamagan (2022) Power dynamics in physics." arXiv preprint arXiv:2203.11513.

## **Weeks Four-Six: Research Subversive Approaches to Foregrounding Justice in STEM**

In groups of 2-3, research one of these topics and present your findings to the class during Week Six.

### Indigenous Environmental Science

- Kyle Whyte (2018) Critical Investigations of Resilience: A Brief Introduction to Indigenous Environmental Studies and Sciences, *Daedalus*, 147(2), 136-147.
- Kyle Whyte (2017) Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene, *English Language Notes*, 55(1), 153-162.
- Kyle Powys Whyte, Joseph P. Brewer and Jay T. Johnson (2016) Weaving Indigenous science, protocols and sustainability science." *Sustainability Science*, 11, 25-32.
- Kekuhi Kealiikanakaolehaililani, Natalie Kurashima, Kainana S. Francisco, Christian P. Giardina, Renee Pualani Louis, Heather McMillen, C. Kalā Asing, Kayla Asing, Tabettha A. Block, Mililani Browning, Kualii Camara, Lahela Camara, Melanie Leila Dudley, Monika Frazier, Noah Gomes, Amy Elizabeth Gordon, Marc Gordon, Linnea Heu, Aliah Irvine, Nohea Kaawa, Sean Kirkpatrick, Emily Leucht, Cheyenne Hiapo Perry, John Replogle, Lasha-Lynn Salbosa, Aimee Sato, Linda Schubert, Amelie Sterling, Amanda L. Uowolo, Jermy Uowolo, Bridget Walker, A. Na maka Whitehead and Darcy Yogi (2018) Ritual+ Sustainability Science? A Portal into the Science of Aloha, *Sustainability*, 10(10), 3478.
- Clare Wilkinson, Daniel CH Hikuroa, Angus H Macraflane and Matthew W Hughes (2020) Mātauranga Māori in Geomorphology: Existing Frameworks, Case Studies, and Recommendations for Incorporating Indigenous Knowledge in Earth Science, *Earth Surface Dynamics*, 8(3), 596-618.
- Lyla June Jonhston (2022) Architects of Abundance: Indigenous Regenerative Food and Land Management Systems and the Excavation of Hidden History, Ph D Dissertation, University of Alaska Fairbanks.

### Fugitive Science

- Britt Rusert (2017) *Fugitive Science: Empiricism and Freedom in Early African American Culture*, New York University Press.
- Eric Herschthal (2021) *The Science of Abolition: How Slaveholders Became the Enemies of Progress*, Yale University Press.
- Abolition Science (2017-2021) Abolition Science Podcast.

### Solidarity Science

- Center for Interdisciplinary Environmental Justice: M. Brito-Millán, A. Cheng (J. Ng), E. Harrison, M. Mendoza Martinez, R. Sugla, M. Belmonte, A. Salomón, L. Quintanilla, J. Guzman-Morales, A. Martinez (2019) No Comemos Baterías: Solidarity Science Against False Climate Change Solutions, *Science for the People*, 22(1).
- M Brito-Millán, LF Helland, JG Morales, E Harrison, J Ng L Quintanilla, A Salomón and b werner (2023) Rejecting Green Colonial Solutions: Towards Decolonial Solidarity with Mother Earth's Revolt, *Perspectives on Global Development and Technology*, 21(5-6), 338-359.
- Ivan Illich (2001) *Tools for Conviviality*, Marion Boyers.
- Amy Goodman and Juan González with Corey Sher and Jamon Van Den Hoek (2023) Gaza in Ruins: Satellite Imagery Researchers Say Israel has Destroyed or Damaged 56,000 Buildings, *Democracy Now*, November 22 (14 minute video - external site).
- Yara Asi, David Mills, P. Gregg Greenough, Dennis Kunichoff, Saira Khan, Jamon Van Den Hoek, Corey Scher, Saleem Halabi, Sawsan Abdulrahim, Nadine Bahour, A. Kayum Ahmed, Bram Wispelwey and Weeam Hammoudeh (2024) 'Nowhere and No One is Safe': Spatial Analysis of Damage to Critical Civilian Infrastructure in the Gaza Strip During the First Phase of the Israeli Military Campaign, 7 October to 22 November 2023. *Conflict and Health*, 18, 24.

### Slow Science

- A. Mountz, A. Bonds, B. Mansfield, J. Loyd, J. Hyndman, M. Walton-Roberts, R. Basu, R. Whitson, R. Hawkins, T. Hamilton and W. Curran (2015) For Slow Scholarship: A Feminist Politics of Resistance through Collective Action in the Neoliberal University, ACME: An International Journal for Critical Geographies, 14(4), 1235-1259.
- Isabelle Stengers (2018) Another Science is Possible: A Manifesto for Slow Science, Polity Press.
- Uta Frith (2020) Fast Lane to Slow Science., Trends in Cognitive Sciences, 24(1), 1-2.

### Black Physics

- Chanda Prescod-Weinstein (2022) The Disordered Cosmos: A Journey into Dark Matter, Spacetime, and Dreams Deferred, Bold Type Books.
- Ruha Benjamin (2019) Race After Technology, Polity Books.
- Chanda Prescod-Weinstein (2020) The Rules of the Diversity and Inclusion Racket, The Riveter.

### Palestinian Science

- Gaza Academics and Administrators (2024) Open Letter by Gaza Academics and University Administrators to the World, Al Jazeera, May 29: <https://www.aljazeera.com/opinions/2024/5/29/open-letter-by-gaza-academics-and-university-administrators-to-the-world>.
- A Mahmoud, A. Ali and H Jenen (2023) Science under Occupation, Science for the People, December 10: <https://magazine.scienceforthepeople.org/online/science-under-occupation/>.
- Basma Hajir and Mezna Qato (2025): Academia in a Time of Genocide: Scholasticidal Tendencies and Continuities, Globalisation, Societies and Education, DOI: 10.1080/14767724.2024.2445855. <https://www.tandfonline.com/doi/pdf/10.1080/14767724.2024.2445855>
- brahim Rabaia and Lourdes Abash (2024) Destruction of Higher Education (Educide) in the Gaza Strip: Assessment and Support Mechanisms, Ifpo - Institut français du Proche-Orient. hal-04791215: <https://hal.science/hal-04791215/document>.
- Mazin B. Qumsiyeh, (2017) Nature and Resistance in Palestine, Active Arab Voices: <https://www.palestinature.org/ru/research/qumsiyehpmnhresistance-rm.pdf>.
- Right to Education Campaign, Birzeit University, Ramallah, Palestine: <https://right2edu.birzeit.edu/>.
- Scientists for Palestine Web Site: <https://www.scientists4palestine.org>.
- Scholarships for Ghazza: <https://scholarshipsforghazza.org/>.

### Queer/Feminist Science

- Sig/Sara Giordano (2025) Labs of Our Own: Feminist Tinkerings with Science, Rutgers University Press.
- Dean Spade (2020) Mutual Aid: Building Solidarity During This Crisis (and the Next), Verso.
- Rachel E Friedensen, Ezekiel Kimball, Annemarie Vaccaro, Ryan A Miller and Rachael Forester (2021) Queer Science: Temporality and Futurity for Queer Students in STEM, Time and Society, 30(3), 332-354.

### Crip Science

- Aimi Hamraie and Kelly Fritsch (2019) Crip Technoscience Manifesto, Catalyst: Feminism, Theory, Technoscience, 5(1), 1-33: <https://catalystjournal.org/index.php/catalyst/article/download/29607/24771>.
- Kelly Fritsch, Aimi Hamraie, Mara Mills and David Serlin, Editors (2019) Special Section on Crip Technoscience, Catalyst: Feminism, Theory, Technoscience, 5(1).
- Jenne Schmidt (2023) From Freak Shows to Freaknature: A Crip Critique of the Un/Natural, Journal of Literary and Cultural Disability Studies, 17(4), 453-469.
- Amy D. Robertson (2024) Disability as Politics and Pride: Imagining a Future for Physics Unhooked from Ableism, The Physics Teacher, 62(9), 792-793.
- Alison Kafer (2013) Feminist, Queer, Crip, Indiana University Press: Introduction (Imagined Futures) 1-17 and Chapter 6 (Bodies of Nature: The Environmental Politics of Disability) 129-148.

### Black Ecologies

- J. T. Roane, Megan Femi-Cole, Preeti Nayak and Eve Tuck (2022) The Seeds of a Different World are Already Alive in the Everyday Practices of Ordinary Black and Indigenous people”: An Interview with J.T. Roane, Curriculum Inquiry, 52(2), 129-138
- Justin Hosbey, Hilda Lloréns and J. T. Roane (2022) Introduction: Global Black Ecologies, Environment and Society, 13(1), 1-10.
- J.T. Roane (2022) Black Ecologies, Subaquatic Life, and the Jim Crow Enclosure of the Tidewater, Journal of Rural Studies, 94, 227-238.
- Teona Williams (2021) For “Peace, Quiet, and Respect”: Race, Policing, and Land Grabbing on Chicago’s South Side: The 2018 Clyde Woods Black geographies specialty group graduate student paper award, Antipode, 53(2), 497-523.

### Critical Environmental Justice

- David Naguib Pellow (2017) What is Critical Environmental Justice?, Polity Books.
- Laura Pulido and Juan De Lara (2018) Reimagining ‘Justice’ in Environmental Justice: Radical Ecologies, Decolonial Thought, and the Black Radical Tradition, Environment and Planning E: Nature and Space, 1(1-2), 76-98.
- Michale Warren Murphy, George Weddington, and A. J. Rio-Glick (2021) Black Ecology and Critical Environmental Justice, Environmental Justice, 14(6), 393-397.

### CLEAR Lab

- CLEAR (2021) CLEAR Lab Book: A Living Manual of Our Values, Guidelines, and Protocols, V.03, St. John’s, NL: Civic Laboratory for Environmental Action Research, Memorial University of Newfoundland and Labrador.
- Max Liboiron (2021) Pollution is Colonialism, Duke University Press
- Max Liboiron (2021) Decolonizing Geoscience Requires more than Equity and Inclusion, Nature Geoscience, 14, 876–87.

**Weeks Seven-Nine:** Presentation on Application of Subversive Science Methods – apply one or more of the subversive science methods discussed to a research/educational problem you are working on or interested in (individually or in groups).

### **Week Ten**

#### Tuesday and Thursday

Presentations and Discussion of Applications of Subversive Science and Course Summary.