

SUST 418*/AMST 320/PCST 340/GEOG 499/NATV 450
Nuclear New Mexico: Environmental & Social Impacts

3 Credit Hours
Fall 2020

Tuesday/Thursday 12:30-1:45pm
Location: Remote via Zoom

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Office: Castetter Hall (Biology Building), room 163B

Office Hours: On Zoom by appointment

As the birthplace of the bomb and also as a main player in the current nuclear weapons industry, New Mexico is a rich source of study for all things “nuclear.” In this course, we will explore multiple aspects of nuclearism in the Southwest, including environmental justice issues, environmental racism, radioactive colonialism, atomic tourism, and the global implications of “the bomb.” How does the ubiquitous presence of nuclearism in the Southwest impede our ability to live sustainably? What social justice concerns must we confront and what communities most bear the brunt of those concerns? We will take an interdisciplinary and critical approach to answering these questions and more throughout this course.

Course Objectives:

- To gain a thorough understanding of the historical, environmental, and socio-cultural impacts of nuclear colonialism on our local communities.
- To be able to identify social equity issues regarding race, class, and gender related to nuclearism.
- To strengthen critical thinking skills through intensive writing, reading, and discussion.
- To sharpen students’ ability to ask critical questions and contextualize conversations about sustainability and environmental justice within current activism and scholarship.

Required Texts:

- Leslie Marmon Silko. *Ceremony* Penguin Books, 1986.
- Various articles available on our class UNM Learn website (<https://learn.unm.edu/>).

Grading Scheme:

Undergraduate Students:

Class Participation:	15%
Reading Engagement:	20%
Digital Community Hours:	5%
Op/Ed or Letter to Elected Official:	15%
Field Trip Critical Reflection:	15%
Final Project:	30%

Graduate Students:

Class Participation:	15%
Reading Engagement:	20%
Class Facilitation:	15%
Digital Community Hours:	5%
Two Field Trip Critical Reflections:	10%
Conference paper:	30%

Class Participation:

This class relies on the intellectual commitment and active participation of all students. In order for the course to be effective, you MUST have the reading assignments completed and ready for in-depth discussion for each meeting. Active listening and mutual respect are requirements for this course. Our course covers topics that you may not agree with or may elicit intense and emotional reactions from you. While some readings may challenge you or make you feel uncomfortable, take this as sign that you are learning and pushing the boundaries of what you take for granted. I ask that you keep an open mind and challenge yourself while being respectful of the authors we read, your fellow classmates, and me. Hate speech, constant interruptions, and disrespect will not be tolerated.

*Please turn off and put away all cell phones during class. Refrain from facebook, email, and anything other than a word doc for notetaking as it is distracting to all around you. *This is true for Zoom too! Please be present to our class when we are together: virtually or in-person.**

Reading Engagement:

For classes where reading(s) are assigned, you will be expected to come to our class session with the following items for EACH reading assigned:

1. A discussion question (i.e. a question that will help us unpack the reading as a class)
2. A productive comment regarding something that struck you about the reading (i.e. “I hated it.” Or “I loved it.” are not productive comments in that they do not produce more inquiry or discussion.) What struck you about the reading specifically and why?

Each class session, you will post these two items in the Zoom chat at the beginning of class. I will grade this on a Complete or Incomplete basis. If you are absent or don’t turn in a reading engagement in class and you email me it at a later time, I will give you half credit. It is very important that you stay on top of your readings as this is a discussion-based class.

Important Note: It is my experience that reading & discussing about these topics can lead to “burnout” and/or a time of feeling emotionally overwhelmed. Knowing this, I will allow you to take ONE DAY off of reading engagement with no penalty. Keep this in mind throughout the semester and use it when you need it.

Graduate Students:

Graduate students in SUST 418 are expected to complete all assignments that undergraduates students are required to complete and are also expected to present on one topic related to course themes and facilitate discussion on this topic. Graduate students are expected to complete at least one reading from the “optional” readings each week. Graduate students are required to write short conference-style papers at the end of the course instead of the final projects. The paper’s length and topic will be decided after a consultation with the Instructor.

Field Trip Critical Reflections:

A central facet of this course in non-pandemic times is travelling to sites around the state significant to the development of nuclear colonialism. For safety, we will not be physically visiting any of these sites, however you will be required to view a number of videos of these sites as a replacement. This includes: the Trinity Site, the National Museum of Nuclear Science and History, Los Alamos, and more. After virtually “attending” these field trips, you will write a critical reflection in which you compare the sites you visited, and tie in your original observations with our course material. This paper is due on November 3rd. The reflection must follow the specific guidelines that will be provided on Learn.

Community Hours:

In non-Covid 19 times, we would be spending a considerable amount of time off campus, connecting to community groups and events in Albuquerque and beyond. In order to stay safe, I will not require any in-person “community hours” this semester. Instead, you will be required to complete 5 hours of digital community outreach and education. There are a number of free webinars, events, and trainings available right now online which connect directly to our course topics. I will provide a list of these webinars and if you come across one you think might apply, please email me to receive my approval. You will write one paragraph for each webinar/online event or training you complete describing how it enhanced your education and submit that paper (total 5 hours) at the end of the semester. This will be submitted on Learn.

Op/Ed or Letter to an Elected Official:

You will write an op/ed style opinion paper (600-800 words) about an issue of your choice in connection with our class topics. This could be a local, national or international issue. Alternatively, you can choose an elected official to write to. Your op/ed or letter must present a convincing argument as to why this is an important issue of environmental justice and how the inequality is/was created –what are the relevant social, political and/or economic factors? Your piece must also make a case for why this issue must be addressed, and you should suggest potential solutions or paths to a solution -perhaps a policy or social movement tactic. Your goal is to be persuasive and to mobilize support and shift opinions. Thus, your writing should be concise and clear – op/ed pieces are not complicated. Their goal is to make a coherent and convincing point that will engage and persuade the reading audience. Please also submit information on this issue (for example, a newspaper article or a snippet from another credible source) to provide me with context and background. We will discuss examples in class. Everyone will post their op/ed or letter on Learn. You are required to then post at least one comment on another student’s op/ed or letter. I will also provide feedback so that you can revise and submit your op/ed to the newspaper or blog of your choice for publication or mail to your elected official. This will be due on October 27th.

Final Projects:

Students will have the opportunity to create original projects that align with our course topics. You will have the option to pair with one or two other students in your project, or to work alone. Ideally, your projects will respond creatively to the social/environmental justice issues brought up by our discussions, speakers, and reading material and also be useful to communities beyond our classroom. Past projects include: creating a website with information about the health impacts of radiation, art projects responding creatively to nuclearism, mapping projects visualizing the impacts of nuclearism on the land, organizing a panel discussion with local activists on nuclear issues...the sky is the limit. Go with your passions and as well as your gifts.

You will turn in a proposal for your project on September 17th and then discuss your project and progress with me during one outside-of-class meeting scheduled during the semester. You will present your final project on December 10th and turn in a short reflection paper about the work you did over the semester. With your permission, I will post your project on our class website: www.nuclearnewmexico.com.

Attendance Policy and Late Work:

Regular attendance is crucial to maintaining a committed and vibrant intellectual atmosphere. You are allowed TWO absences, and after two absences **your overall participation grade will be lowered by 5 points for each additional absence.** *Documented* medical and family emergencies are not included. (Note: Stellar participation in class has the potential to raise a borderline grade. Attendance problems or lack of engagement can lower your grade.) Unless you have made prior arrangements with me, late papers will be graded after a 10% reduction **for each day past the due date.** This does not apply to documented medical or family emergencies. Late reading engagements will receive half credit.

Trigger warning: sexual assault and related issues:

According to UNM policy I am a "mandatory reporter" required to report sexual assault, misconduct, and harassment they observe or learn of through communications with students. Students who bring such information to my attention may become subject of an investigation by the Office of Equal Opportunity. Your option is to first contact a confidential reporting location such as LoboRESPECT Advocacy Center, WRC, or LGBTQ office to assess your options without creating automatic actions beyond your control. Nonetheless, I remain a resource and direct contact with UNM if you so desire.

Immigration Status:

As an educator, I fully support the rights of undocumented students to an education and to live free from the fear of deportation. I pledge that I will not disclose the immigration status of any student who shares this information with me unless required by a judicial warrant, and I will work with students who require immigration-related accommodations. For more information and/or resources, please contact the New Mexico Dream Team at info@nmdreamteam.org.

Academic Dishonesty:

See pathfinder.unm.edu/common/policies/academic-dishonesty.html for the official policy. Let me know if you have any questions. Always cite your sources (whether you quote directly or paraphrase) to clearly to avoid problems with plagiarism. We will discuss plagiarism in detail at the beginning of the course so as to avoid any confusion.

Accommodation:

Accessibility Services (Mesa Vista Hall 2021, 277-3506) provides academic support to students who have disabilities. If you think you need alternative accessible formats for undertaking and completing coursework, you should contact this service right away to assure your needs are met in a timely manner. If you need local assistance in contacting Accessibility Services, see the Bachelor and Graduate Programs office.

Class Schedule:

***Note*:** I don't plan on it, but I reserve the right to change our schedule if I deem necessary. I will always give as much advance notice as I can and communicate the changes both in class and via email.

Week 1: Introductions, Origin Stories, and Nuclearism

Class 1: Tuesday, Aug. 18th:

Topics:

1. **Introductions**
2. **Go Over Syllabus, Class Structure, Reading Journals, Class Facilitation Sign-Up**
3. **Hiroshima and Nagasaki: The decision to drop the bomb**

Watch the beginning of *Oliver Stone's Untold History of the United States: The Bomb*

(Watch the remainder of the film before Thursday's class on your own)

Class 2: Thursday, Aug. 20th:

Topics:

1. **Post- Cold War New Mexico**
2. **The Manhattan Project**
3. **An Interdisciplinary Introduction to Nuclearism: the Four Characteristics**

Readings:

- Excerpt from *Barefoot Gen* by Keiji Nakazawa

- “Nuclear Legacies: Arrogance, Secrecy, Ignorance, Lies, Silence, Suffering, Action” by Laura Nader and Hugh Gusterson
 - OPTIONAL: “Introduction and The Origins of Los Alamos” from *The Day the Sun Rose Twice* by Ferenc Szasz
 - OPTIONAL: Selections from *Hiroshima* by John Hersey
- Due: Reading engagement questions/comments

Week 2: Health Impacts of Radiation, Uranium, & Indigenous Activism

Class 3: Tuesday, Aug. 25th:

Topics:

1. **Uranium, Nuclear Colonialism, & Indigenous Activism**
2. **The “Front End” of the Nuclear Fuel Cycle**

Readings:

- Excerpts from *Environmental Justice in New Mexico: Counting Coup* by Valerie Rangel

Guest Speaker: Leona Morgan from *The Nuclear Issues Study Group, Diné No Nukes & The Radiation Monitoring Project*

Due: Reading engagement questions/comments

Class 4: Thursday, Aug. 27th:

Topics:

1. **Reference Man**
2. **Radiation 101: “No Safe Amount” Hormesis theory vs. linear threshold**
3. **Radium dial painters, BEIR report, gender & radiation**

Readings:

- “Radiation Basics” from *The Nukes Next Door*
- Excerpts from *Multiple Exposures* by Catherine Caufield
- “The Problem: Nuclear Radiation and its Biological Effects”(p. 15-30 & 41-63) Rosalie Bertell
- OPTIONAL: “Bad to the Bone: Analysis of the Federal Maximum Contaminant Levels for Plutonium-239 and Other Alpha-Emitting Transuranic Radionuclides in Drinking Water” by Arjun Makhijani
- OPTIONAL: “Background Radiation” from *A Field Guide to Radiation*

Due: Reading engagement questions/comments

Week 3: Environmental Racism and Settler Colonialism

Class 5: Tuesday, Sept. 1st:

Topics:

1. **Environmental Racism**

In class film: *The Return of Navajo Boy*

Class 6: Thursday, Sept. 3rd:

Topics:

1. **Settler Colonialism and Radioactive Colonialism**
2. **New Mexico's Three Periods of Colonialism**

Readings:

- “Sacrificial Land” from *Wastelanding: Legacies of Uranium Mining in Navajo Country* by Traci Voyles
- Excerpts from *The Militarization of Indian Country* by Winona LaDuke
- OPTIONAL: “Native America: The Political Economy of Radioactive Colonialism” by Ward Churchill and Winona LaDuke

Due: Reading engagement questions/comments

Week 4: Science as Violence? The Logic of Progress, Human Experimentation
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Class 7: Tuesday, Sept. 8th:

Topics:

1. **Science, Gender, and Violence**

Readings:

- “Science, Nature, and Gender” by Vandana Shiva
- “Science” from *Welcome to the Machine* by Derrick Jensen
- OPTIONAL: “Macho Science” from *The Gendered Atom* by Theodore Roszak

Due: Reading engagement questions/comments

Class 8: Thursday, Sept. 10th:

Topics:

1. **Human Experimentation**
2. **Knowledge at What Cost?**

Readings:

- Selections from *The Plutonium Files* by Eileen Welsome
- OPTIONAL: Selections from *The Nazi Doctors* by Robert Jay Lifton

(FYI: Zimmerman Library has a collection of government documents titled “Human Radiation Experiments”- if you are interested in this topic for your project, talk to me about accessing these documents.)

Due: Reading engagement questions/comments

Week 5: Global Nuclear Testing, Nuclear Accidents, Nuclear Winter
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Class 9: Tuesday, Sept. 15th:

Topics:

1. **Nuclear Winter**

2. Nuclear Accidents/Close-Calls

Readings:

- “The Nuclear Winter” by Carl Sagan
- Selections from “The Limits of Safety” by Scott Sagan
- “Trump and the Nuclear Codes: How to Launch a Nuclear Weapon” Union of Concerned Scientists
- Selections from *The Doomsday Machine: Confessions of a Nuclear War Planner* by Daniel Ellsberg
- OPTIONAL: “Babysitting the Bomb” by Reid Cherlin
- OPTIONAL: Selections from *Broken Arrow*
- OPTIONAL: “Death Wears Bunny Slippers: Hanging Out with the Disgruntled Guys who Babysit Our Aging Nuclear Missiles.” By Josh Harkinson

Due: Reading engagement questions/comments

Class 10: Thursday, Sept. 17th:

Topics:

1. Nuclear Testing/ “Rehearsals”
2. Radionuclides and Bioaccumulation
3. NUKEMAP

Readings:

- “Uranium Mine Workers, Atomic Downwinders, and the Radiation Exposure Compensation Act (RECA): The Nuclear Legacy by Susan Dawson and Gary Madsen
- “From Hell to Breakfast” from *Savage Dreams* by Rebecca Solnit
- “So Long Mom, I’m Off to Drop the Bomb” by Alex Wellerstein
- OPTIONAL: Selections from *Under the Cloud: The Decades of Nuclear Testing* by Richard Miller

Due: Reading engagement questions/comments, **Project Proposals**

Week 6: Operation Crossroads, Bikini Atoll, and Nuclear Waste
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Class 11: Tuesday, Sept. 22nd:

Topics:

1. Nuclear Testing in the Pacific Islands

Reading:

- “The Movement for Environmental Justice in the Pacific Islands” in *The Environmental Justice Reader* by Valerie Kuletz
- OPTIONAL: “ ‘more like us than mice’: Radiation Experiments with Indigenous Peoples” by Barbara Rose Johnston

Watch *Nuclear Savage* (prior to class)
Guest speaker: Lovely Umayam,
Due: Reading engagement questions/comments
and schedule individual meetings with Eileen

Class 12: Thursday, Sept. 24th:

Topics:

- 1. Nuclear Waste: An Overview of the Problem**
- 2. Waste Classification and WIPP**
- 3. International perspectives on nuclear waste**

Reading:

- “Nuclear Wasteland” from *The Tainted Desert* by Valerie Kuletz
 - “This Place is Not a Place of Honor” Sandia National Laboratories Report
 - OPTIONAL: Excerpts from *Nuclear Wastelands*
- Due: Reading engagement questions/comments

Week 7: The Mixed Waste Landfill & CIS: Ongoing Struggles for Clean Air and Water

Class 13: Tuesday, Sept. 29th:

Topics:

- 1. The Mixed Waste Landfill: Albuquerque’s Dangerous Dump**
- 2. Isleta Pueblo and Water Rights**

Reading:

- “Toxic Waste: Everything Has to Go Somewhere” from *The Orphaned Land* by V.B. Price
- Due: Reading engagement questions/comments

Class 14: Thursday, Oct. 1st:

Topics:

- 1. Holtec and proposed CIS nuclear waste storage in NM**
- 2. HLRW Storage in the U.S.**
- 3. Nuclear Energy Overview**

Reading:

- “All Spent Nuclear Fuel in the U.S. Will Soon End Up in One Place” *National Geographic* by Sammy Feldblum
- Selections from *Nuclear Roulette* by Gar Smith

Due: Reading engagement questions/comments

Week 8: Phytoremediation; Anti-Nuclear Movements and Encampments

Class 15: Tuesday, Oct. 6th:

Topics:

- 1. Phytoremediation and nuclear contamination**
- 2. Radical mycology**

Readings:

2. Selection from *Radical Mycology: A Treatise on Seeing & Working with Fungi* by Peter McCoy
Due: Reading engagement questions/comments

Class 16: Thursday, Oct. 8th:

Topics:

1. Civil Rights & Anti-Nuclear Movements: Black Activism

Readings:

3. Selections from *Africans Against the Bomb: Nuclear Weapons, Colonialism, and the Black Freedom Movement* by Vincent Intondi
4. TBA

Due: Reading engagement questions/comments

Week 9: Nukespeak, The Trinity Site & the Tularosa Basin Downwinders

Class 17: Tuesday, Oct. 13th:

Topics:

1. Examining Nuclear Discourse

2. Nukespeak

Readings:

- Selections from *Nukespeak* by Stephen Hilgartner
- OPTIONAL: “The Metaphors of Radiation or, Why a Beautiful Woman is Like a Nuclear Power Plant” by Jane Caputi

Due: Reading engagement questions/comments

Class 18: Thursday, Oct. 15th:

Topics:

1. Tularosa Basin Downwinders

2. Radiation Exposure Compensation Act

Readings:

- Excerpts from *Unknowing, Unwilling, and Uncompensated*
Guest Speaker: Tina Cordova, *Tularosa Basin Downwinders Consortium*

Due: Reading engagement questions/comments

Week 10: Feminist Perspectives on the Bomb

Class 19: Tuesday, Oct. 20th:

Topics:

1. Gendering the Bomb

2. Feminist analysis of discourse

Readings:

- “Sex and Death in the Rational World of Defense Intellectuals”
by Carol Cohn

Due: Reading engagement questions/comments

Class 20: Thursday, Oct. 22nd:

Topics:

- 1. Feminism and Nuclearism**
- 2. Sexual Violence and Nuclearism**

Readings:

- “Explosive Issues: Sex, Women, and the Bomb” from *Homeward Bound* by Elaine Tyler May
- “Hot Spots: Justice, Power, and Gender in the Radioactive Present” from *Wastelanding: Legacies of Uranium Mining in Navajo Country* by Traci Voyles
- OPTIONAL: “From Secrets of Life to Secrets of Death” by Evelyn Fox Keller

Due: Reading engagement questions/comments

Week 11: Atomic Tourism

Class 21: Tuesday, Oct. 27th:

Topics:

- 1. Atomic Tourism and “Consuming” the Bomb**
- 2. Atomic Souvenirs: Power, Representation, and Kitsch**

Readings:

- “Atomic Tourism” Hugh Gusterson

Due: Reading engagement questions/comments, **Op/Ed (or Letter to Elected Official due on Learn**

Class 22: Thursday, Oct. 29th:

In-class field trip to the National Museum of Nuclear Science and History (NMNSH) in Albuquerque

Visit the NMNSH and then http://www.pcf.city.hiroshima.jp/frame/Virtual_e/tour_e/guide2_4.html for a comparison to the Hiroshima Peace Museum and write a brief (3-5 paragraph) response to the field trip comparing these two sites and relating them to our class themes. Due on Learn November 3rd.

Week 12: Public Engagement Through Art and Activism

Class 23: Tuesday, Nov. 3rd:

No Class (Election Day...VOTE!)

Class 24: Thursday, Nov. 5th:

Topics:

- 1. Art as Activism: Judy Chicago, Patrick Nagatani, and more**
- 2. The Billboard Campaign**

Reading:

- “The Billboard Campaign” by Joseph Masco

Due: Reading engagement questions/comments

Week 13: Nuclear Energy: Fukushima, Chernobyl, Church Rock

Class 25: Tuesday, Nov. 10th:

Topics:

1. **Fukushima Daiichi Meltdown**
2. **The Connection Between Nuclear Power and Nuclear Weapons**
3. **International perspectives on nuclear energy**

Readings:

- Excerpts from *Devil's Tango: How I Learned the Fukushima Step by Step* by Cecile Pineda
- Selections from *Nuclear Roulette* by Gar Smith
- OPTIONAL: Reading: *Not in the Name of Climate: Not in Our Name! People in India Resist Nuclear Power* by Kumar Sundaram

Due: Reading engagement questions/comments

Class 26: Thursday, Nov. 12th:

Topics:

1. **Cultural Responses to the Bomb**
2. **Sci-fi, Cold War Films and Beyond**
3. **Informal Project Check-ins**

Reading:

- “Mutant Ecologies: Radioactive Life in Post-Cold War New Mexico”, Joseph Masco
- “The Nuclear Mushroom Cloud as Cultural Image” by Peggy Rosenthal

Due: Reading engagement questions/comments

Week 14: Resistance, Resilience, and Activism
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Class 27: Tuesday, Nov. 17th:

Topics:

1. **The Work that Reconnects: Trauma and Environmental Destruction**
2. **Finding Support and Inspiration: The Great Turning**

Reading:

- “The Greening of the Self” by Joanna Macy
- “Russia: A Path in the Forest” in *Pass It On: Five Stories That Can Change the World* by Joanna Macy

Due: Reading engagement questions/comments

Class 28: Thursday, Nov. 19th:

Topics:

1. **Final Prep and Practice for Presentations**
2. **Integration of the Whole**
3. **Nuclear Guardianship: Rocky Flats**

Reading:

- “Rocky Flats & Nuclear Guardianship”
- Radiation Monitoring Project website
- TBA

Due: Reading engagement questions/comments

Week 15: No Class, Read *Ceremony*

Class 29: Tuesday, Nov. 24th:

Topics:

1. Leslie Marmon Silko’s *Ceremony*

Reading:

- *Ceremony* p.1-78

Due: Reading engagement questions/comments and

Class 30: Thursday, Nov. 26th:

No Class: “Things-taken” Break (read *Ceremony*)

Week 16: *Ceremony* Pt. 2 and Final Projects

Class 31: Tuesday, Dec. 1st:

Topics:

1. Leslie Marmon Silko’s *Ceremony* continued

Reading:

- *Ceremony* p.78- end

Due: Reading engagement questions/comments

Class 32: Thursday, Dec. 3rd:

Topics:

1. Wrapping up loose ends and final presentations

Week 17: Finals Presentations, Final Projects

Class 33: Thursday, Dec. 10th (10am-12pm): **Final presentations and have a wonderful break!**

Due: Final Presentations and papers