# TEACHING NOTES

**Oppenheimer**

**By**

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**Learning Objectives**

1. Gain an understanding of how popular media like movies might interpret key historic events like the development of the atomic bomb with a narrative that marginalizes indigenous peoples.
2. Demonstrate an understanding of the role nuclear scientists played in making the bomb.
3. Explore the differences between an indigenous world view and the scientific world view as it was present in the Los Alamos National Laboratory.
4. Demonstrate a critical understanding of how a particular view of science combined with power and patriotism led to continuing and devastating impacts.
5. Articulate an understanding of the environmental and cultural factors involved in the aftermath of the Trinity Test.
6. Develop the ability to generate alternatives that might reduce conflict and impacts to native peoples in defining national security.

## Audience

This case can be adapted for senior high school, college and graduate classes by choosing one of the teaching techniques described here. It is most appropriate for classes in political science, native studies, film, ethnology, medical studies, physics, history, and tribal governance. It could also be used for training government decision-makers and employees in tribal, state and local and federal government.

**Discussion Questions** (organized by level of complexity with tier one questions emphasizing the interpretation and application of factual material)

## Tier One

1. How, when, where and why was the Manhattan Project created?
2. Who was J. Robert Oppenheimer and what role did he play in the Manhattan Project?
3. was affected by the Project? Name some of the Tribes that were impacted in the three major sites of the Manhattan Project.
4. What happens when some peoples are marginalized and left out of the story? What kinds of ideas did the Pueblos express about the Project? How did the

Project utilize them and their resources?

1. What happened to the Pueblo peoples who lived near Los Alamos? What happened to daily lives of the people living within 200 miles of the Trinity Test?
2. Why does the Oppenheimer movie leave out the stories of the local and indigenous peoples that the Manhattan Project impacted?
3. What were the problems with data collection on radiation exposure and intergenerational diseases that resulted from secrecy imposed in making and testing the atomic bomb?
4. How are the problems of continued exposure to radioactivity and to related diseases being handled today?

**Tier Two.** More advanced questions**.**

1. Describe how the movie develops Oppenheimer as a tragic hero and discuss the problems with that characterization.

2. If you were working for the Manhattan Project during the period of 1942 to 1945, how would you justify the actions being taken?

1. Contrast the scientific worldview as expressed in the movie with an indigenous worldview. What are some points of conflict between two worldviews?
2. Based on your answer to #2, discuss the alternative story of what happened with the Manhattan Project and why it was suppressed. Was the suppression of facts and actions justified? Why or why not?
3. Given the checkered history of hidden or lack of data, what is happening now to monitor the impacts on downwinders? What assistance should they receive?
4. Is hiding critical data about health impacts from the Manhattan Project and the Los Alamos National Lab justified today under the cover of national security?
5. How did the Manhattan project change the world? How did it change New Mexico and how does the term nuclear colonization apply?
6. Describe the continuing impacts of the Manhattan Project as it has changed the world. Was it inevitable? Can anything be done?
7. Describe the continuing impacts on indigenous peoples in the Southwest. What should be done to mitigate the damage to people? To lands and waters?

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## Participatory Exercises

Student learning can be enhanced by participating in small group discussion] and sharing perspectives. Breaking the class into groups to consider different questions helps achieve this: group size of 6-8 participants is optimal. The number of groups can be adjusted to class size. Reading the case should be assigned before the participatory exercises.

Completing the tasks can be adapted to online group work if needed for hybrid classes. Reporting out to the full class after completing the tasks makes for meaningful learning through follow up discussions. These discussions often work best for an in- person class, but if faculty is very skillful in online programs, they can be successful online. Video resources are listed that provide background to the alternative Oppenheimer story that contradicts the movie. These resources can be particularly useful for students who have less exposure to tribal issues and rights and impacts especially significant to the Southwest.

## Exercise One: Communication: Composing letters

Students compose a letter in this exercise. They represent a particular interest related to the story of the development of the atomic bomb and the aftermath.

Group One: The United States government is engaging in World War II. Other scientists and policy experts have persuaded Albert Einstein to write a letter about beginning a project to use apply his quantum theory to nuclear science in making an atomic bomb.

Write a letter to President Roosevelt as Albert Einstein about taking this action. What were the circumstances under which he finally agreed to promote atomic bomb research. Include reasons he might have given for doing this and his reservations and qualms about what it might lead to in the future.

Group Two: As a group of independent alternative media journalists and film-makers, write a letter to the New York Times about the Oppenheimer movie . Why should they advocating for the closure of the Los Alamos Lab and ask apology for what the movie left out. Why were the government scientists who worked on nuclear production biased and why does the movie focus only on their story? Discuss why bias in films and the media and affect innocent people who lack voice. What should the movie company due to repair the damage and hide the truth?

Group Three: Write a letter to the current President of the United States as members of Tewa Women United, a Pueblo-based organization that supports women’s health and advocates for the closure of the Los Alamos National Lab and what should happen instead. Discuss the health impacts and the potential for intergenerational disease that continued work at the Lab poses. Present what Pueblo women might advocate for instead in terms of the indigenous worldview.

Group Four: Write a letter as a U.S. Senator from New Mexico about the current status of health problems continuing to emerge from the Los Alamos National Laboratory and what needs to be done in terms of current policy.

Should the new proposal for radioactive pit production continue? Should greater compensation be offered to the New Mexicans who suffered and continue to suffer from the activities of the Lab?

Group Five: Write a letter to the current President of the United States from the All Pueblo Council, a group of Pueblo Indian government representatives who speak out on policy affecting the Pueblos. Outline why producing more nuclear pit triggers at Los Alamos Lab is a poor idea.

Discuss the current environmental problems and draw from the indigenous perspective on the relationship to the land. Discuss the supporting concerns of affected rural residents, health advocacy groups and environmental groups to demonstrate the political importance of this issue.

Group Six: Write a letter to the current President of the United States from a group of Defense Department Scientists about why continued nuclear

production is needed in the world today. Discuss how undesirable it might be, but the tradeoff of national security that closing the Lab might cause and the difficulty of turning back history. Discuss how the operation of the Lab could be improved. Discuss impacts to the Pueblos and locals and how they can be mitigated. Argue for new transparency from the Lab.

Group Seven: Write a letter to Environmental Protection Agency about the history of hidden or non-existent data from the Lab. Include continuing concerns about impacts to health, land and water. Suggest actions like increased monitoring, more permitting procedures for new activities at the Lab, remediation and enforcement of applicable laws and more transparency.

Group Eight: Write a letter to the Director of the movie Oppenheimer. Discuss the ethical questions the movie raises and the potential discrimination and coverup created by completely leaving out the role of indigenous peoples and the impacts to them that the Manhattan Project posed. Discuss what the movie making industry should have included in the movie in order to tell the full story. Who should they have interviewed and where should they looked for resources on the alternative story? Cover why it is important for movies to bring out the story of marginalized peoples and what are the consequences of not doing so.

# Exercise Two: Nuclear Summit Scenario on the Impacts of atomic bomb development and research on indigenous peoples

Students imagine that they are at a Nuclear Summit, presenting the impacts of the atomic bomb on indigenous peoples in the U.S. They will break into groups and report on questions like what were the past and continuing impacts of nuclear research and bomb production. Several different groups represent the main contributors to the discussion.

Group One: Make a list of the main Tribes affected by the Manhattan Project and Lab. Identify the kinds of impacts that occurred and why this was allowed to happen. Discuss the lapsed responsibility of those who knew of

the impacts, but concealed them at the Trinity Test Site. What were the consequences of that secrecy?

Group Two: Discuss the concept of national security. List some of the facts that were and are being covered up in the name of national security. Discuss the concept of national security and whether or not it was ethical to use the concept to hide, destroy or fail to gather data about the impacts to indigenous and local peoples and why the Oppenheimer movie continued to suppress that knowledge..

Group Three: Discuss the role of the media in telling the story. What happens if it furthers nuclear colonization? What if it tells the alternative story of what happened to indigenous people in the Oppenheimer movie. How were indigenous people represented/not represented in the movie?

How can social media help tell the key parts of the story that the movie leave out. What should media do to contribute to equity and diversity in the future? What can advocacy due to point out instances when movies leave out such large parts of the story? Can the backlash be valuable?

Group Four: Discuss the indigenous worldview and indigenous rights. How should they guide nuclear research activities? What would nuclear science look like if true stewardship of the environment and concern for indigenous peoples was considered? Should institutions like the Los Alamos National Lab continue to be located on lands that are needed for indigenous and local use?

Group Five: What are the dangers of the concept of national security when it is applied broadly and without restriction to scientific research. What are the effects on data collection, transparency, indigenous rights and health when this occurs? How did the idea of complementarity explain the way some facts were ignored or hidden in the development of the atomic bomb?

Group Six: What can be done now to mitigate the continuing impacts of nuclear research? List some actions that were not taken and some actions that should be taken now. Who is responsible for mitigating the impacts? Who is responsible for the health of those who have related diseases? Who is responsible for restoring the land and water?

# Final Discussion questions

After completing the scenario, the whole class can gather to discuss questions that overview what they learned from the case.

1. What ideas and facts presented in the Oppenheimer movie leave out: what critical components of the history was left out? Why does the movie leave out the alternative indigenous story?
2. What should people remember about the full story of the Manhattan Project and its aftermath? What are future considerations that would avoid nuclear colonization of indigenous and local peoples?

## Additional Visual and Audio Resources

All of these resources can be accessed through links on the website of Tewa Women United at tewawomenunited.org Some resources may require membership or signing on to various organizations.

* 1. *Los Alamos, New Mexico and Native Sacred Lands.* Core Light Films (Featuring Marian Naranjo) on YouTube
  2. *The Shadow on the Hill.* Marion Naranjo Shuffle Collective shuffle.do
  3. *Radio-Active New Mexico.* Pueblo Indian Cultural Center YouTube
  4. *Tewa History of the Manhattan Project.* Dmitri Brown On Colores, Rocky Mountain PBS, a local public broadcasting station. 26 min. 23 sec.
  5. *Dismantling the Nuclear Beast*—a 12 part video playlist documenting the landmark 2017 symposium held at the University of New Mexico. Elder Kathy Sanchez of Tewa Women United speaks on the Saturday/5 video. YouTube
  6. *The Grandmothers Circle.* Elder Kathy “Won Povi” Sanchez and Heather Bryan. In this episode Kathy talks about growing up in close proximity to the Los Alamos National Lab which was built in her community’s sacred mountains and where nuclear waste was stored in sacred underground kivas. The Nerve: Conversations with Movement Elders sites.libsyn.com

## MAP

*Water, Land and Air: A Sacred Trust.* A work in progress that documents primarily the energy and nuclear-related sources of pollution, although other factors are at work.

Nuclearactive.org The link to the map is available on Tewa Women United under the section on its website and the category “Oppenheimer and the Other Side of the Story. Tewawomenunited.org

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