

# COVID-19 and Climate Change: Understanding Place, History, and Indigenous Sovereignty in Emergency Response

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# Introduction

## Purpose of the project

This project includes teaching modules focused on Tribal and Indigenous communities' experiences of COVID-19 and climate change, including ethical considerations, case studies, and narratives integrated into the curricula. The modules are geared towards delivering as part of undergraduate courses, including at tribal colleges and universities. The teaching modules will be publicly available through the Natural Hazards Center website and disseminated more broadly to promote equitable emergency management education.

There are nine modules included in the curricula. Modules 1-3 set the foundation for understanding the intersectionality of colonial systems; climate change, COVID-19, and community; and working with Indigenous sovereignty. Modules 4-9 are place-based curricula. Modules 4-6 focus on Nimiipuu place-based identities, preparation and adaptation, and resilience. Modules 7-9 focus on Hawaiian place-based identities, emergency management, and sustainability.

## Learning outcomes

The main learning outcomes of the curricula include to:

- Examine the role that individual and community-level issues and historical context have on properly addressing major events, such as COVID-19 and climate change.
- Gain appreciation for trust as integral to relationship building.
- Gain contextual understanding of Indigenous relationships to place and heterogeneity of place.
- Honor diverse Indigenous worldviews, values, relationships, balance, and responsibility to place in emergency management.
- Gain appreciation for the longstanding practices of, and the role of emergency management in supporting, community resilience through cultural contexts.
- Build foundational knowledge of Indigenous-led solutions to the climate crisis, COVID-19, and colonization.

This is a starting, introductory unit. It is not comprehensive for all understandings of emergency management, Tribal Nations, Indigenous Peoples, COVID-19, and climate change. Each individual Nation has their own experiences. What is provided in these modules is a survey of some elements

that are applicable to some people. We encourage the continued building upon this curriculum to include more people, places, cultures, and contexts.

## Key definitions

Intersectionality: [“Intersectionality is a lens through which you can see where power comes and collides, where it interlocks and intersects. It’s not simply that there’s a race problem here, a gender problem here, and a class or LGBTQ problem there. Many times that framework erases what happens to people who are subject to all of these things.”](#) - Dr. K. Crenshaw, author of *Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics*

Climate justice: A form of environmental justice, climate justice is the fair treatment of all people and the freedom from discrimination in the creation of policies and projects that address climate change as well as the systems that create climate change and perpetuate discrimination. (Climate Generation)

Community health: A medical specialty that focuses on the physical and mental well-being of the people in a specific geographic region. This important subsection of public health includes initiatives to help community members maintain and improve their health, prevent the spread of infectious diseases and prepare for natural disasters. (Rasmussen)

Intergenerational trauma: a phenomenon in which the descendants of a person who has experienced a terrifying event show adverse emotional and behavioral reactions to the event that are similar to those of the person himself or herself. These reactions vary by generation but often include shame, increased anxiety and guilt, a heightened sense of vulnerability and helplessness, low self-esteem, depression, suicidality, substance abuse, dissociation, hypervigilance, intrusive thoughts, difficulty with relationships and attachment to others, difficulty in regulating aggression, and extreme reactivity to stress. The exact mechanisms of the phenomenon remain unknown but are believed to involve effects on relationship skills, personal behavior, and attitudes and beliefs that affect subsequent generations. The role of parental communication about the event and the nature of family functioning appear to be particularly important in trauma transmission. Research on intergenerational trauma concentrated initially on the children, grandchildren, and great-grandchildren of survivors of the Holocaust and Japanese American internment camps, but it has now broadened to include American Indian tribes, the families of Vietnam War veterans, and others. Also called historical trauma; multigenerational trauma; secondary traumatization. (APA Dictionary of Psychology)

AIAN: American Indian and Alaskan Natives: AIAN or is an abbreviation used by the United States Census Bureau to count population within the Native American and Alaska Natives areas within the United States.

Indian Country: The term Indian country is defined in 18 U.S.C. § 1151 and 40 C.F.R. § 171.3 as:

all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;

all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; and

all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

Consistent with the statutory definition of Indian country, as well as federal case law interpreting this statutory language, lands held by the federal government in trust for Indian tribes that exist outside of formal reservations are informal reservations and, thus, are Indian country.

Indigenous Peoples: United Nations definition: Considering the diversity of indigenous peoples, an official definition of “indigenous” has not been adopted by any UN-system body. Instead the system has developed a modern understanding of this term based on the following:

- Self-identification as indigenous peoples at the individual level and accepted by the community as their member.
- Historical continuity with pre-colonial and/or pre-settler societies
- Strong link to territories and surrounding natural resources
- Distinct social, economic or political systems
- Distinct language, culture and beliefs
- Form non-dominant groups of society
- Resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities.

Sovereignty: Tribal sovereignty refers to the right of American Indians and Alaska Natives to govern themselves. The U.S. Constitution recognizes Indian tribes as distinct governments and they have, with a few exceptions, the same powers as federal and state governments to regulate their internal affairs. Sovereignty for tribes includes the right to establish their own form of government, determine membership requirements, enact legislation and establish law enforcement and court systems. (National Congress of American Indians)

## 7 R's as ethical work, education, and research with Indigenous People: *respect, relevance, reciprocity, responsibility, relatedness, relationships, and redistribution*

Place and all our relations (human/environment/plant/animal) are deeply impacted by climate change and variability and to address these problems requires collaborations, creativity, diverse thinking, and relationships. The 7 R's (Montgomery and Blanchard 2021) can help guide researchers and educators how to appropriately do convergence and collaborative science with and in service to Indigenous communities and their homelands. This can be especially helpful with emergency and disaster management. Historically a one size fits all method has been standardized. While some standardizations are beneficial, the reality of the diverse world around us and diversity of those who are indigenous to places requires some shifts in thinking and doing that support diverse thinking and actions outside of the old norms. By expanding beyond old norms there are opportunities for ethical and inclusive work across cultures, places, and communities.

Scholars have pointed out 4 R's of education and/or research with Indigenous Peoples; respect, relevance, reciprocity, and responsibility (Kirkness and Barnhardt 1991). They are a set of foundational research ethics for others to build on and provide a framework of ethical education and research protocols that value Indigenous Peoples and "respects them for who they are, that is relevant to their view of the world, that offers reciprocity in their relationships with others, and that helps them exercise responsibility over their own lives"(Kovach 2015). By employing an additional three making 7 R's: relatedness, relationships, and redistribution there is a basic foundation for ethical and respectful interactions between Indigenous Peoples and outside entities and agencies to collaborate.

Seven generations thinking refers to the philosophy many Native Peoples have when making decisions that will impact our descendants for generations. Making choices today will impact our children's children, so it is important we consider future generations, all our relations, and as many factors as possible. The goal is to not just to bridge a gap in science and science education, but to someday fill the gap.

The following table, from Montgomery and Blanchard (2021) "Testing Justice: New Ways to Address Environmental Inequalities," describes the 7 R's of Indigenous Research:

<b>7 R's of Indigenous Research</b>		
Respect	RESPECT OF INDIGENOUS PEOPLES CULTURAL INTEGRITY. Respect, not just as individuals, but more fundamentally as a people. We/they are expected to leave the cultural predispositions from	Sovereign nations  spirituality

	<p>their world at the door and assume the trappings of a new form of reality, a reality which is often substantially different from their own. While this seems simple, many non-Native people are unaware of the vast differences between cultures, political relationships, and social constructs between them and many Indigenous Peoples. Tribes are land-based people who each have nation-to-nation relationships with the federal, states, and other tribes. Most use traditional knowledges and science along with western sciences and technologies. They have histories that predate “America” by thousands of years. It is important to have humility and be respectful of the Peoples and the more-than-human relatives and the relationships of place. Leaders and communities must have trust, consent, and input on all work done in service to peoples and places.</p>	<p>place connectedness</p> <p>histories</p> <p>culture</p> <p>protocols/etiquettes</p> <p>language</p> <p>land</p> <p>individual &amp; communal sovereign</p> <p>gender fluidity</p> <p>differ from other tribes</p> <p>consent/trust</p>
<p>Relevance</p>	<p>Eber Hampton, a Chickasaw originally from Oklahoma has tried to identify some of the qualities that he considers important in constructing an "Indian theory of education." (Hampton, 1988, p. 19) which also applies to other engagements with Indigenous communities and places. He lists the following as twelve "standards" on which to judge any such effort that can be applied to working with Tribes generally: * Spirituality - an appreciation for spiritual relationships. * Service - the purpose of education is to contribute to the people, * Diversity - Indian education must meet the standards of diverse tribes and communities. * Culture - the importance of culturally determined ways of thinking, communicating and living. * Tradition - continuity with tradition. * Respect - the relationship between the individual and the group recognized as mutually empowering. * History - appreciation of the facts of Indian history, including the loss of the continent and continuing racial and political oppression. * Relentlessness - commitment to the struggle for good schools for Indian children, * Vitality - recognition of the strength of Indian people and culture, * Conflict - understanding the dynamics and</p>	<p>there must be purpose of what is studied and learned</p> <p>To community</p> <p>To people</p> <p>To place</p> <p>To the next generations</p> <p>To the land</p> <p>To the more-than-human beings</p>



	<p>consequences of oppression * Place - the importance of 'sense of place, land and territory, * Transformation - commitment to personal and societal change. Is the work or research inclusive and of value to the Peoples and places? How will they benefit? What is the commitment to the People? How does your work and interest support and strengthen their sovereignty and self-determination? Is the work engaging the needs of the community and place the people live, work, and play?</p>	
Reciprocity	<p>create reciprocity in ways that are appropriate to each participant's needs or requests, such as contributing my time and labor to assist with community needs</p> <p>What ways does the research give back to the community? How does your work benefit Indigenous People and place? Are they included in the development of the questions, methods, and collection of data? If you are asking for information or access to information, place, or whatever, what are you giving in return? Does your work empower the community and make their lives better? According to who? Who decides? Who owns the data?</p>	<p>Giving back to;</p> <p>Place</p> <p>More-than-human beings</p> <p>Community</p> <p>Families</p> <p>Individuals</p> <p>No extractive research</p>
Responsibility	<p>Knowledge has responsibilities and one extra part of responsibility is accountability. The days of dropping into a community, extracting information and leaving to never return is gone. There is so knowleges not for outsiders and researchers must accept this and support Indigenous rights to their own knowledges. You as the researchers must be accountable and respectful of where you are and be mindful that you are a visitor. You are not allowed to publish whatever you feel like because some information can be detrimental to the people you are working with. You are responsible to empower not hurt and violate Peoples and Places with your research, methods, analysis, and assumptions. If your work doesn't center the community and place needs, why are you</p>	<p>Not all information and knowledge are for consumption</p> <p>Knowledge is responsibility not power. They are not synonymous</p> <p>Accountability is part of the responsibilities to place and each other</p>

	doing the work? Who is benefiting?	
Relatedness	there must be acknowledgment of connectedness to all beings of place and the relationships of reciprocity that exists between all entities of place. What appears to be chaos is often collaboration between species. Systems and patterns are the ways of life everything is dependent on for survival, identities, and especially the important part of the relationship of place by recognizing how all things are connected and related, an interdependence if you may.	<p>All things are related. Things like water and rocks have essences that can be considered life. Energy is life.</p> <p>All things are related, minerals, and other elements of the Earth are shared and necessary for health and all communities to thrive.</p>
Relationships	Western science considers any kind of relationship with research subjects as biases and Indigenous science considers relationships. Like any relationship there is work. Relationships between all beings, human and more-than-human beings require respect, understanding, nurturing, and care. If you care for place, the place cares for you by providing shelter, food, water and other necessities needed for life to thrive. Relationships are interactive and not limited to humans. Animals and plants have relationships of reciprocity or interdependence.	relationships of reciprocity exist between all entities of place. In relationships, there must be purpose, relevance, care, opportunities to thrive and grow
Redistribution	<p>Information learned must be shared so that all in the community can access, understand, and implement what is learned into their lives as it is useful to them.</p> <p>Information must be in a format that is appropriate for them and their systems of knowledge exchange and is transmittable easily across generations and exchangeable with other neighboring communities</p>	<p>Written</p> <p>In their language</p> <p>As art/pictures/painting</p> <p>Song</p> <p>Dance</p> <p>Story/storytelling</p>

Source: Montgomery and Blanchard, 2021

## 7 R's of Indigenous Research References

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Montgomery, M. and P. Blanchard (2021). Testing Justice: New Ways to Address Environmental Inequalities. *The Solutions Journal*, 1 March, <https://thesolutionsjournal.com/2021/03/01/testing-justice-new-ways-to-address-environmental-inequalities/>

## Trauma Statement

For all who may learn from this work, and for all of the Peoples and Places that are interconnected within this shared space, this Trauma Statement is meant as an acknowledgement of the emotional and psychological encounters which have led to this moment, and to act forward with conscientiousness and grace. Engaging these knowledges through learning, synthesis, and integration of these shared curricula as a means to mitigate harms and find greater connections through experience, recognize that in this endeavor *You* become *Us*, and that *We* as learners and educators must acknowledge our heterogeneity, our human frailty, and our collective growth as Peoples. We all come from a broad diversity of backgrounds, experiences, and countless generations of ancestors. As part of our individual, and shared lives thus far, it could be that our experiences may have included tragedy and violence; events that were (and are) so deeply disturbing that they have left scars or still-open wounds, on our spirits or psyche, that may not be perceptible by simple sense. *Trauma* is a part of the experience of any conscious being, and in this context it is important to acknowledge that there is no singular defining aspect nor way of experiencing trauma, no single qualifier for what constitutes “deeply disturbing,” and thus no one way of healing. To move forward, it is paramount that we engage with each other in a way that is *trauma-informed*. Put simply, there are two parts to this form of education: understanding trauma and its effects on learning (i.e. effects on attention span), and knowing what to do about it.

The lasting effects of experiencing something traumatic can vary based on the amount of agency we have in those situations. It is also important to remember that actions affect different populations and environments differently, and that some may not have experienced traumatic events with uniform impacts on learning. Trauma also exists in scale, and through dimensions of both time and place, as well as both cognitive perceptions and physiological reverberation: for instance, epigenetic scientists are continuing to research the impact of *transgenerational trauma* – a phenomenon that may describe the transference of trauma from ancestor to descendant via epigenetics. Some of us have ancestors who have experienced genocide, famine, abuse, and other violences, and these inheritances are often interwoven with the systems of a particular place, such as education, social

norms, religions, and other hegemonies and dogmas. Another complexity to the impacts of trauma as a phenomenon is that the events which result in trauma may not be a singular moment nor explicit action. As the United States continues to occupy Indigenous lands, and through the collective histories of broken treaties, ethnic and cultural genocide, violation and appropriation of sovereignties, as well as social corpora which continue to prioritize acquisition, growth, and homogenization, over the health and protection of our natural resources – our relatives – these “systems of oppression” are an affect – a tangible impact to the minds, bodies, and Spirits of Indigenous Communities.

Understanding this in context to the work within this curriculum is a first step to understanding the persons who have worked collectively to produce this work. Our team comes from many Peoples and Identities, Places and Environs, yet with a common thread of impacts of colonization and asymmetrical power dynamics which have in some significant way impacted the ancestry, homelands, and individual and shared psyches that comprise each consciousness. The Indigenous scholars who comprise our team not only carry these types of trauma (and potentially more), but we have also engaged in heavy, oftentimes heartbreaking material to put these modules together for future emergency management agents to learn. Those educators and learners who engage this curriculum, and those who may be served by the knowledges within this work, may also share these sorts of broad - yet deeply personal - traumatic experiences. All too many of us have also been exposed to our own traumatic situations of violence, neglect, abandonment, and/or witnessing. Because these modules focus on the impacts of climate change and COVID-19 on Indigenous communities, our team was faced with the intersection of both witnessing and experiencing trauma in the forms of death in our communities or families, and climate-related loss of homelands. The pandemic alone has opened many historical wounds in us as the descendants of survivors of pandemics spread by colonial settlers. Coupled with the task of scholarly work, we have witnessed trauma through these materials, and so will you. However, understanding this, and understanding how to navigate these hardships through a trauma-informed approach, can lead to amelioration of some of these ongoing harms, and together may lead to healing old wounds.

## Understanding Trauma and the Mind

A human brain responds to changes in stress, not only to immediate threat, but also during childhood development and throughout one’s lifetime. While we are “hard-wired” to perceive dangers and avoid it as a means of survival, this is not to say that we are mere creatures of biological impulse; it is important however that when speaking of *stress* that it is specifically framed as a neurological effect. When recognizing that different minds may react differently to the same threat, it introduces the necessity of careful consideration of the language, actions, and considerations of interpersonal engagements, even if only in literary or other media. Thus, the subjective nature of recognizing trauma, from a consciousness perspective, is to recognize that emotion and memory are interlinked, “our feelings inform our beliefs; our beliefs reinforce our feelings” (Levine 2015). Thus, a simple objective “trigger warning” while well intentioned, is to discount the heterogeneity of peoples, especially those who may be most likely subject to historical and ongoing traumatic experiences. With this in mind, it can be helpful to recognize that there are

many differentiations of what makes an experience traumatic - ranging through the many developmental phases of a person, as well as the communities, and the generations which comprise them - with the hope that the care taken regarding interactions may also have a healing component, and at the very least a way to reduce harm as much as possible.

Emotion as a function of memory serves many aspects to a conscious mind when thinking of how to act, particularly when thinking of emotion as a sensory experience. How a person feels about a situation will determine significantly how they will respond, particularly if they've felt the same way in a similar situation. At the extremes, during traumatic experiences there can be not only an amplification of the memory of the experience, but also when the source of traumatic experiences is ongoing and a person loses power or the ability to escape the experience, it can lead to survival-based, defensive, habits as a norm; when a source of trauma is unresolved over long periods of time, "such maladaptive, habitual reactions leave the individual entangled in unresolved emotional angst, disembodiment, and confusion" (Levine 2015). In *Trauma and memory: Brain and body in a search for the living past: A practical guide for understanding and working with traumatic memory* by Peter Levine, the responses to threat have been mapped out:

"Emotional arousal in response to threat exists on a continuum, but with abrupt amplifications at certain points within that spectrum... the sequence of evoked motor patterns and their associated emotions is as follows: (1) Arrest and alert - alerted with curiosity, (2) Stiffen and orient - associated with focused attention, interest, and preparedness; (3) Assess - associated with intense interest, friendliness, or repulsion. This assessment is informed by our genetic memory banks, as well as our personal histories; (4) Approach and avoid - associated with pleasure and displeasure. In the more intense activation states, there is an abrupt shift to the powerfully compelling emotions of fear, rage, terror, and horror that erupt into all-out action, immobilization or collapse: (5) Fight-or-flight-experienced as fear. When these active responses are thwarted we: (6) Freeze, as in "scared stiff" - associated with terror; (7) "Fold" and collapse - associated with helpless/hopeless horror" (2015, p.44).

With this understanding, you may practice mindfulness of your own emotional responses to some of the content contained within this presentation. Stress can be useful, so when you feel an "alert of curiosity" see it as an opportunity to de-escalate any potentially maladaptive thoughts, and remember the position that this work is intended to help communities and respond to emergency situations with a heightened conscientiousness. At the very least, should you find yourself at an "avoidance" response, it is best to step away from the material as the noncognitive associations of displeasure coupled with integrating this new information may lead to potential negative biases. Regroup, reflect upon the objectives, and then return.

## Acknowledging Trauma and Navigating Conscientiously

The first part of knowing what to do with trauma, is acknowledging and validating it. Beyond a mechanistic view of trauma-informed process, recognize one's Self not only in the greater context of education, but also as part of our shared human experience amongst generations that lead to Us,

and for those yet to come, touched by our actions, our words and content, and especially our Character. Vine Deloria Jr. wrote,

“The psychological side of education sums itself up, of course, in a consideration of character. It is commonplace to say that the development of character is the end of all school work. The difficulty lies in the execution of the idea. And an underlying difficulty in this execution is the lack of a clear conception of what character means. This may seem an extreme statement. If so the idea may be conveyed by saying that we generally conceive of character simply in terms of results; we have no clear conception of it in psychological terms - that is, as a process, as working or dynamic. We know that character means in terms of the actions which proceed from it, but we have not a definition conception of it on its inner side, as a system of working forces” (Deloria and Wildcat 2001)

Recognizing the character of not only the developers of this content, but also oneself in engaging it, is to center one's *characters* as a means to potentially redress harms through action; through force. However, as no great endeavor may ever be carried out alone, there will always be the inclusion of others in concert. And recognizing that by engaging others and differing social structures and norms, there is also a risk of Secondary Trauma. This vicarious form of trauma is very real. For example, during the assembly of the first module, “The Intersectionality of Colonial Systems,” one of our team members (Rivera) engaged with histories of malnutrition, medical malpractice, broken treaties, subdued justice, incarceration of Indigenous youth and adults, and barrier after barrier in education and income attainment for Indigenous communities. These were not histories Rivera had to experience personally, but there were still enduring effects to engaging with the material: inability to sleep, nightmares, and feelings of helplessness, anger, and apathy. Other members of our team also experienced feelings of heaviness or heartbreak, especially when creating content addressing the colonial history that is responsible for having dispossessed, and dispossessing, Indigenous communities of our homes, our sovereignty, our cultural identities, and our Peoples.

## Helpful Strategies

For some learners or educators, the materials in this curriculum could be traumatizing, or even re-traumatizing. Whether teaching in the classroom or online, there are ways to minimize harm and empower each other. Below is a non-exhaustive list of empowerment strategies, but it is encouraged to conduct further exploration into trauma-informed teaching tools.

- 1. Take it slow.** When the content begins to feel overwhelming, allow yourself and/or your students to decompress using mindfulness exercises, or to simply step away from the material for a moment.
- 2. Share gratitude.** Sometimes engaging in some positive activity at the beginning of a heavy lesson plan can make the material feel more bearable. Two of the blessings that come with being Indigenous is that we are still here, and our homelands are still around. Indigenous or not, participants in your classroom can still reflect on how they benefit from inhabiting the environment or landscape that they do. Also, know that our team is grateful to you for

engaging with and/or teaching these materials. The more individuals who become informed with our histories, the greater impact we can have for our collective futures.

3. **Give students agency.** For educators, allow students to choose their capacity for engaging in the material, especially during the heavier sections. Giving a brief overview of the content ahead (trigger warnings) can help students make informed decisions. Of course, this doesn't mean students can skip over entire modules, but simply that they should be able to choose their pace and intake.
4. **Check in with students.** While the sentiment may be that the whole class is going through this experience together, trauma manifests in ways unique to every student. Checking-in with students can prevent the feeling of hopelessness from setting in and disrupting learning. Sometimes (use your judgement) **be persistent.** Some students may be struggling, but won't want to be a burden, or be vulnerable. It may be best to have an immediate follow-up with a student, depending on the situation.
5. **Prepare for significant dates.** This especially has to do with colonial holidays that fall during the academic year. Examples of days to consider preparing for include: Indigenous Peoples' Day (formerly known as Columbus Day), President's Day, U.S. Independence Day, and Thanksgiving. You may want to prepare for other observances or holidays local to your home state. Statehood Days, for instance, may bring tensions to the classroom.
6. **Do not romanticize trauma or healing.** Trauma can sometimes be romanticized as character building or as ways for others to feel sympathy. This *should not* be the case while teaching or engaging with this curriculum. These histories have indeed carried lasting impacts, but Indigenous communities and efforts deserve more respect than to be pitied or used for "trauma porn." On the opposite end, healing from trauma should not be conveyed as an easy or smooth process. There are indeed instances of healthy and progressional post-traumatic growth, but to highlight these narratives over the narratives of difficulty and relapse does not help those who are struggling. It is better to provide resources than to pass judgement.
7. **Provide Resources.** Know the resources that are available on-campus or on your institution's online format for emotional, mental, and spiritual support. Do your own research into multicultural trauma-informed education and tools. Culture plays a huge part into the particular needs of an individual experiencing trauma, so do your best to find resources outside of the Western pathologized narrative of trauma.

Lastly, be gentle with yourself, with others, and keep an open mind. With these tools, a trauma-informed approach can be utilized to navigate this curriculum with grace, in a way which accounts for the Heart, Mind, and Spirit.

## Trauma Statement Resources

COVID-19 and Climate Change: Understanding Place, History, and Indigenous Sovereignty in Emergency Response

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**Jasmine Neosh**

**Research Assistant, Climate Change and Tribes, College of Menominee Nation's Sustainable Development Institute**

Jasmine Neosh is an enrolled member of the Menominee Nation. She is also a student in the Public Administration program at the College of Menominee Nation, where she graduated with high honors in 2019 with an Associate degree in Natural Resources. Jasmine has been a Northeast Climate Science Center Undergraduate Fellow, as well as the first-ever recipient of the Dr. Holly Youngbear-Tibbets Sustainability Fellowship. Jasmine is providing programmatic support to the ongoing climate change research at the College of Menominee Nation's Sustainable Development Institute, including intersections with food sovereignty, environmental justice, communications and imagery, and outreach.

**Hökūlani Rivera**

**Council Member, Climate Adaptation & Mitigation Program Fostering Indigenous Relationships & Education (CAMPFIRE) Council**

Hokulani Rivera is Kanaka Maoli from Pauoa Valley, HI, and is currently living on the traditional lands of the Lummi Nation and Nooksack Tribe. As a recent graduate from Western Washington University with a B.A. in Cultural Anthropology and one in English – Creative Writing, she has a passion for Indigenous storytelling and making a difference through her words. Rivera has a strong dedication to serving Indigenous communities, and hopes to make a career of supporting cultural revitalization efforts. As a Kanaka woman, she wants to inspire her community to reach for their highest education goals, “because no matter where we land, we are always setting our sights on a brighter future.” With a great love of learning Indigenous Knowledge, she hopes to continue her higher education journey focused on Indigenous Studies, and Climate Justice & Education. *I decided to be a part of this project, because I wanted to engage with the intersectionality of systemic harm from an Indigenous perspective. All too often, emergency situations, natural disasters, and other hazards that affect Indigenous communities are reduced to isolated incidents. In reality, it is important that we all move forward with the recognition that any and all events stem from ancestral factors, and are the ancestors of future events.*

**Sapóoq'is Wíit'as Ciarra S. Greene**

**Native Environmental Science Faculty, Northwest Indian College - Nez Perce**

Ciarra Greene is a citizen of the Nez Perce Tribe. Nimiipuu (Nez Perce) culture and traditions emphasize environmental stewardship and drives Ciarra's academic, professional, and personal endeavors. She has her BS in Chemistry from Northern Arizona University (2012), where she researched environmental transport and stabilization of uranium on the Navajo Reservation, and completed internships with the Nez Perce Tribe, Dept. of Energy (Hanford), EPA, and Institute of Tribal Environmental Professionals. Previously she was employed at the Arizona Science Center as STEM instructor, the Nez Perce Tribe Water Resources Division (Wetland Program Field Assistant and Water Resources Specialist), and Wisdom of the Elders (Educator and Workforce Development Coordinator). Ciarra earned her MS degree in Science Teaching at Portland State University (2019), and currently serves on the Nez Perce Tribe General Council Resolutions Committee, was elected to the American Geophysical Union Council as the Early Career Scientist Representative (2021), is founder of Sapóoq'is Wít'as Consulting (promoting the protection and healing of homelands and community through culture, science, and education), and is the Cultural Curriculum and Workforce Development Coordinator for Nez Perce Tourism, LLC.

#### **Dr. Lesley laukea**

##### **Doctorate, University of Hawai'i at Mānoa**

Lesley laukea is a Kanaka Maoli Wahine that comes from the Island of Maui, Hawai'i. She holds two Master's degrees in Pacific Islands Studies and American Studies and recently completed her Ph.D. at the University of Hawai'i Mānoa. Her focus is on Native Science through ancestral knowledge, relocation secondary to climate change, and marginalized communities. She is a member of Rising Voices Center for Indigenous and Earth Sciences at NCAR and works with other scientists and native community members for a collaborative approach in bringing together different perspectives/philosophies for solutions in climate change and dynamics to sustainability.

## **Team Support**

#### **Paulette Blanchard**

##### **PhD Candidate, University of Kansas**

Paulette Blanchard is currently a PhD candidate in the department of Geography at the University of Kansas, and 2018-2020 Diversity and Inclusion Fellow with University Corporation for Atmospheric Research. Her current work addresses Indigenous science and science education, Indigenous led environmental movements and activism. Blanchard's incorporates Indigenous Feminist methodologies, ethics, protocols, and philosophies into her geographic framework. Her work includes social, climate, and reproductive justice for Indigenous Peoples and other intersectional and marginalized populations. Blanchard has interests in how and why science education influences

Native students to stay or leave academic and science spaces, as well as how mentoring contributes to their success.

Blanchard holds a master's in geography from the University of Oklahoma and a bachelor's in Indigenous & American Indian studies from Haskell Indian Nations University. Her work addresses the challenges and opportunities that Indigenous Peoples face in relation to climate change and climate justice.

### **Dr. Michelle Montgomery**

#### **Associate Professor, University of Washington-Tacoma**

Dr. Michelle Montgomery (enrolled Haliwa Saponi/descendant Eastern Band Cherokee) is an Associate Professor at the University of Washington Tacoma, School of Interdisciplinary Arts and Sciences in American Indian Studies and Ethnic, Gender and Labor Studies. She is also the Assistant Director for the Office of Undergraduate Education, the Indigenous curriculum and community advisor for the School of Education. Dr. Montgomery's research focuses on Indigenizing and decolonizing the climate justice narrative, environmental ethics connected to Indigenous Peoples' place-based identities and eco-critical race theory to eliminate racial and environmental oppression.

### **Patrick Freeland**

#### **Project Director, Livelihoods Knowledge Exchange Network (LiKEN)**

*Honor, Pride, and Respect.* These values serve as the foundation to a worldview of knowledge in plural – transdisciplinary understanding and holistic experience – in order to promote proactive change through community-based collaboration. Patrick Austin Freeland, Hvtvltvlke Mvskoke (Wind Clan, Muscogee Creek Nation of Oklahoma) is a graduate of Haskell Indian Nations University and Purdue University, learning of the interrelations of American Indian, Alaska Native, and Indigenous Peoples' adaptation to climate change and preservation of tribal and cultural sovereignty. Through commitment-to-action, Patrick centers his work ethic and civic engagement through intergenerational knowledge-sharing and through the utilization of interdisciplinary sciences, arts, and engineering, as a means to improve human and environmental health, social advancement, and intercultural understanding through reconciliation. Patrick's research and professional development have centered on climate change adaptation and mitigation, noncognitive development in education, and advancement of plural knowledge and conscientiousness. Patrick, a lifelong learner, continues to develop skills in organizational development, program management, social knowledge systems, and intergovernmental policy, as well as strategic planning, assessment, and evaluation. Ultimately in practice, Patrick incorporates an adaptive management style supported by collaboration with an interpersonal focus on healing and peace-making.

## **Dr. Julie Maldonado**

### **Associate Director, Livelihoods Knowledge Exchange Network (LiKEN)**

Dr. Julie Maldonado is the Associate Director for the Livelihoods Knowledge Exchange Network (LiKEN), a non-profit link-tank for policy-relevant research toward post-carbon livelihoods and communities. In this capacity, she serves as co-director of the Rising Voices Center for Indigenous and Earth Sciences, which facilitates intercultural, relational-based approaches for understanding and adapting to extreme weather and climate events, variability, and change. Dr. Maldonado is also a lecturer in the University of California-Santa Barbara's Environmental Studies Program. As a public anthropologist, Julie has consulted for the United Nations Development Programme and World Bank on resettlement, post-disaster needs assessments, and climate change. She worked for the US Global Change Research Program and is an author on the 3rd and 4th US National Climate Assessments. Her recent book, *Seeking Justice in an Energy Sacrifice Zone: Standing on Vanishing Land in Coastal Louisiana*, emerged from years of collaborative work with Tribal communities in coastal Louisiana experiencing and responding to repeat disasters and climate chaos. The book was released shortly before the release of her co-edited volume, *Challenging the Prevailing Paradigm of Displacement and Resettlement: Risks, Impoverishment, Legacies, Solutions*.

## **Contact**

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