For Immediate Release:

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<Albuquerque, New Mexico, April 16, 2021>

2021 Cobell Graduate Summer Research Fellowship Recipients Announced

Indigenous Education, Inc. is pleased to announce the 2021 recipients of the distinguished Cobell Graduate Summer Research Fellowship administered on behalf of the Cobell Board of Trustees. Annually, Indigenous Education, Inc. seeks fellowship applications from American Indian/Alaska Native scholars who are in the final phases of their graduate/professional programs. The aim of the Program is to support high achieving student researchers who might not otherwise have access to funds for research and related activities during summer months. Each of the selected research fellows receive a $5,000 stipend to offset remaining costs associated with their final research projects. During the Fellowship period, scholars receive direct guidance from their faculty research advisor and support from the Director of Research and Student Success at Indigenous Education, Inc. Cobell Summer Research Fellows enjoy opportunities to network with other Fellows across the world and engage in future Fellowship activities as new cohorts are selected. We are excited to continue supporting Native scholars representing a variety of tribes and working to indigenize higher education in their respective academic fields. Selected from a highly competitive pool of over 100 graduate applicants, please help us welcome our 5th Summer Research Fellowship cohort to the Cobell Fellowship family.
Shining Examples of American Indian Graduate Student Success:  
Announcing the 2021 Cobell Graduate Summer Research Fellows

The overarching mission and vision of Indigenous Education, Inc. is to support American Indian and Alaska Native student success. The Cobell Graduate Summer Research Fellowship was developed to help support graduate students during the summer months of their final research project – a critical yet often overlooked period of a graduate student’s academic career. We are excited to share with you highlights of the newest cohort of Summer Research Fellows and hope their stories inspire you as much as they have us. Applications for our 6th cohort of 2022 Cobell Summer Graduate Research Fellows open on September 1, 2021.
Cobell Fellow: Lara Jacobs  
Tribal Affiliation: Muscogee (Creek) Nation  
Institution: Oregon State University  
Degree: PhD – Forest Management  
Research Project: Analyzing the effect of E. coli on a Pacific Northwest tribe’s subsistence fishing and other traditional practices

**Detailed Research Project Overview**  
The Quileute Tribe noticed an increase in human fecal matter from outdoor recreationists deposited on two of their ancestral fishing grounds (Second and Third Beaches near La Push, Washington), which are managed by Olympic National Park (ONP). The Tribe is curious if increases in human fecal matter may transfer harmful bacteria (e.g., Escherichia coli) to the shellfish they use for subsistence fishing and other traditional practices. The proposed research is a collaboration with the Tribe to understand the ecological, pathogenic, and cultural impacts on outdoor recreation. We designed a multi-phase project to answer our main question: To what degree are outdoor recreationists on Second and Third beaches in ONP impacting Quileute subsistence foods and traditional fishing grounds? Two secondary questions on the same study site that these phases will address include: What spatial relationship exists between 1) the amount of human waste deposited on the beaches; 2) the concentration of E. coli found in beach sands; and 3) the concentration of E. coli found in selected shellfish? What temporal relationship exists between 1) the amount of human waste; 2) E. coli concentration and distribution in beach sands; and 3) the E. coli concentration and distribution in selected shellfish during the summer tourism season?

The first phase includes a visit or use study to provide information about how many individuals are accessing the beaches and to record the spatial patterns of outdoor recreation (e.g., camping
and locations of fecal matter) on the beaches. We will install infra-red trail counters on both beach trails to document visit or use numbers. Then, we will conduct a spatial survey of visit or use through an adapted observational mapping technique that employs systematic scans of campsites. Fecal matter will be spatially tracked using a controlled intuitive meander approach. AGIS map, including cluster analysis, will be created to illustrate the spatial distribution of campsite use and densities on the beaches and the locations of human fecal matter. Camping permit information will also be acquired from ONP to determine the amount of camping visitors throughout the summer. This phase of research will connect results from future phases of the project to visit or use information. The next phase of research investigates the potential biocontamination of beach sands and shellfish used by the Tribe for subsistence. The beaches will be gridded, and ten sand samples will be taken from each area over multiple time intervals that span throughout the tourism season and into the fall and winter rainy seasons. GPS waypoints will be assigned to each sand collection area, and sand samples will be processed in a site-built laboratory to quantify and isolate presumptive E. coli colonies using culture-based methods. Cellular DNA will be extracted, and the presence of target genes associated with human and local animals’ genetic markers will be confirmed via polymerase chain reaction assays. This step ensures that any E. coli found originated from humans and not other animals. E. coli concentration levels from each sample will be spatially mapped with their associated GPS waypoints, and a dot distribution GPS map will be created to illustrate the magnitude of presumptive E. coli on the beaches.

While testing beach sands, a concurrent study will commence that focuses on the potential biocontamination of shellfish. Twenty samples of multiple shellfish varieties will be randomly sampled using the same gridded boundary as the sand survey during varied time intervals in the summer and fall. GIS waypoints will be assigned to shellfish collection areas. Field researchers will follow established guidelines for monitoring bacteriological contamination of shellfish to clean and prepare samples for testing. Next, 50g sample pools of each species will be blended, and serial dilutions will be plated on agar plates. This will be followed by DNA extraction and target gene analyses of presumptive E. coli colonies, as described above in the sand testing section. GIS waypoints will be used to build GIS maps that illustrate temporal, spatial, and presumptive biocontamination of shellfish. This research contributes widely to the field of recreation ecology by bringing in a cultural focus and by adding information about recreation in marine systems, shellfish, and pathogens. Most importantly, this research contributes crucial knowledge to the Tribe, who will learn how to conduct these methods to protect their people in the future. It will provide them with information on how their traditional lands are being managed by ONP.
Cobell Fellow: Charlotte Logan  
Tribal Affiliation: Saint Regis Mohawk Tribe  
Institution: Cornell University  
Degree: PhD – American Indian/Native American Language  
Research Project: Pilot study of the Haudenosaunee Language Documentation and Conservation Initiative

Detailed Research Project Overview
Since its inception in 1865, Cornell University’s founding under the 1862 Morrill Act has been a prominent example of the kind of wealth and power conveyed through Indigenous Land dispossession. Cornell was built over the main village of the Lower Cayuga People after their removal by one of the largest U.S. expeditions ever mounted against North American Indigenous people. This took place throughout the Spring of 1779, continuing late into the Fall and was known as the Clinton-Sullivan Campaign. In spite of these efforts, Haudenosaunee people persist in the face of great loss and displacement.

This work will be the pilot project of a lifetime of work which I shall refer to in this proposal as the Haudenosaunee Language Documentation and Conservation Initiative (HLDCI). This work is critical to the reversal and revitalization of what was lost, and this effort aims to re-establish roots for our language within our traditional homelands. Haudenosaunee youth must have
access and options for language learning at all levels where they are being educated, beginning first within their own communities.

There are 6 remaining L1 (first language) speakers of Onondaga and 15 L1 speakers of Cayuga as of 2021, as reported by the Six Nations language community. The speakers that we plan to work with will be those remaining L1 speakers already working with the Cayuga and Onondaga Language Programs in the community of Six Nations of the Grand River. As a doctoral student at Cornell, I remain within the Traditional Territory of my Haudenosaunee people, and an active member of my language community for my education. This has allowed me to keep my relationships strong, but also to guide my work from a perspective of what language learners need most from linguistic documentation.

My advisors within the Linguistics Department support and encourage fieldwork with Haudenosaunee language communities, and are invaluable for consultation. This training will play a major role in the development of vernacular language education programs within our Haudenosaunee communities, at both the grassroots and academic levels. First and foremost, my hopes are to strengthen Haudenosaunee Language Revitalization efforts through the development of Iroquoian Language programming and coursework, specifically the Cayuga Language Program and the Endangered and Indigenous Language Program at Cornell University. Long term goals for this work will be to enrich the Immersion Programs of both the Onondaga and Cayuga Nations through collaboration on this documentation, but also through establishing a strong relationship between the University and our Haudenosaunee language communities.

The HLDCI has three major objectives. The first is to provide high-quality documentation of the critically endangered and under-documented languages of both Onondaga and Cayuga. The second is to promote collaborative research efforts among linguists, native speakers of Cayuga and Onondaga, and other interested parties. The third is to facilitate the free and open exchange of ideas among all those working in language revitalization. Aim 1: Audio/video documentation of Cayuga and Onondaga, IPA transcription, and Phonetic Analysis Cayuga and Onondaga languages are acoustically under-documented and only hold the language of a handful of speakers. Our first efforts will be to expand upon these resources through state-of-the-art electronic documentation of approximately 20 hours of audio and video per language. Written phonetic documentation is also limited to the present-day orthography. Careful electronic documentation followed by up-to-date phonetic analysis of Cayuga and Onondaga are critical to language revitalization efforts within both communities. All recordings will be transcribed and translated into texts and made available to language programs within the Onondaga and Cayuga language communities as teaching and learning resources. Aim 2. Spontaneous Conversational Analysis Natural speech data is severely lacking and conversational data between two or more skilled L1 speakers is nonexistent for both the Onondaga and Cayuga languages. In addition to
this L1 documentation, we will document spontaneous free speech between two high level L2 learners in order to measure conservation, of such crucial features as particle usage, morphology, and prosody. Also from these studies we will attempt to document spontaneous free speech between two skilled L2 speakers to learn how second language learners change language. This information will allow language learners to self-evaluate and make informed decisions about how to further address these issues by building curricula based on improving phonological, morphological, and idiomatic usage similar to those of L1 speakers.

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**Cobell Fellow:** Christina Thomas  
**Tribal Affiliation:** Reno Sparks Indian Colony  
**Institution:** University of California - Davis  
**Degree:** PhD – American Indian Studies  
**Research Project:** Great Basin Song and Story Project

**Detailed Research Project Overview**  
Since time immemorial, Numu Yadooana [Northern Paiute language] relates the human, more-than human, and environmental realities unique to Kooyooe Tukadu [what is currently known as the Pyramid Lake region in Northern Nevada]. With the onset of settler colonialism in 1844...
Numu Yadooana was prohibited and fell into a deep stage of sleep. Considered critically endangered by linguists, Numu Yadooana is often framed by non-Numu in terms of deficit and loss. Yet the knowledge of our elders and ancestors persists through the work of 400 fluent Numu Yadooana speakers in the world. Numu Yadooana songs and stories carry our natunetooe [teachings], and our Indigeneity. As an Indigenous woman, I have a responsibility to take on leadership roles within my community to affect change for future generations. My research both enacts and documents (re)vitalization strategies that weave together language and applied practices in Native American language, music, and dance.

My work will benefit my community, other tribes, and institutions throughout the Great Basin region. As a Cobell Graduate Summer Research Fellow I plan to advance the Great Basin Song and Story Project I began in February 2019 as an Undergraduate student at the University of Nevada, Reno. My intellectual foundation is rooted in Numu Yadooana and natunetooe and seeks to integrate Numu perspectives and methodologies into Nevada state histories. These integrations will achieve a much-needed densification of academia in terms of more diverse populations and more diverse methodologies in higher education. This past summer I was able continue this project as a 2020 Mellon Public Scholar Fellow. Because of COVID-19 my research project changed due to social distancing as well as a means to keep elders in my community safe. Numu Nugadu [Our Dances], is a project that advances Numu-centered performing arts and language curriculum with, by, and for Numu Peoples. My primary fields of study are historical musicology and linguistics. My research amplifies Numu ways of doing music history --privileging Numu knowledges and languages --as a means to Indigenize music studies curriculum. In June 2021, I will have completed my PhD coursework at UC Davis, and I will return home to Nevada to live closer to my communities on the Pyramid Lake Paiute Reservation and the Reno-Sparks Indian Colony (RSIC). I will spend the summer gathering, creating, and sharing song-based research with community Elders and youth. Numu Nugadu incorporates equal parts historical/archival and performative/engaged research methodologies, all of which will be Numu-led and community-based. More broadly speaking, this collaborative and public arts + humanities project aims to amplify Numu histories and practices, long assumed lost or silenced, to advance community health and well-being via narratives of resurgence. Phase I of Numu Nugadu: I will focus on interviewing and consulting with Elders to collaboratively gather songs and histories regarding a Numu cultural resurgence immediately following the settler colonial banning of Numu cultural practices between 1844-1931. There are Elders alive today who participated in dance groups from this post-ban resurgence era, and their first-person testimonies comprise the core of this project. I will also consult community and government archives to contextualize colonial and Indigenous narratives about the effects of cultural bans and reservation confinements on the retention of Numu language, songs, and dances. These archives include: the RSIC Archives and Records, Pyramid Lake Cultural Museum, UNR Special Collections, Nevada Historical Society, Stewart Indian School, and the Nevada State Museum.
Phase II of Numu Nugadu: The second phase will shift to collaboratively creating studio recordings and a critical edition of Numu resurgence songs to share with other Numu communities across the Great Basin region.

Following performance workshops with community Elders and youth, I plan to create new studio recordings of 24 songs that can be shared with local dance groups and schools for language revitalization units. I will then draft and produce a critical edition of Numu songs that will be transcribed, translated, and drafting Numu-led analytical essays. These recordings and critical edition will be significant for historical musicology, as one of a few Indigenous-led and Indigeneity-centered works, but also for Numu people as many of our Numu Hoobea/Nugadu [Paiute songs and dances] have been lost.

Cobell Fellow: Kendra Greendeer
Tribal Affiliation: Ho Chunk Nation
Institution: University of Wisconsin - Madison
Degree: PhD – Art History Criticism & Conservation
Research Project: Rematriating Indigeneity in Contemporary Native Arts

Detailed Research Project Overview
My dissertation research will explore the proposition that, in the work of contemporary Native women artists who enact Indigenous place-making strategies in confrontation with the settler-colonial land practices on which the museum is premised, an important pre-European contact
ethics is enacted, giving power and voice back to Native women. As Robin Wall Kimmerer discusses in her landmark study, Braiding Sweetgrass, land is more than a commodified good for ownership and exploitation; it is a source that allows for survival and gives more than humans could reciprocate, and thus gratitude and respect must be given in our interactions with the land. It is a key contention of this dissertation, Rematriating Indigeneity in Contemporary Native Arts, that this understanding is grounded and transmitted in cultural teachings and lives through visual and material culture, including the materials used, content, and artistic intents of contemporary Native arts. Contemporary Native arts by women artists, thus, play a crucial role in the movement towards enduring Indigeneity, which is a return to an identity based on land engagement and self-sufficiency, which has not been able to be enacted since our ancestors’ way of life was oppressed and settler-colonial agencies prohibited their connections to ancestral lands, therefore disrupting harvests, practices, and way of life.

This study is to build on the still undertheorized and understudied work of North American women artists whose work both enacts and fosters Indigenous place-making. The main Indigenous concepts regarding the living nature of land recognize women as having a closer connection to earth are evident in the pre-contact art mediums that Indigenous people continue to practice. These examples of art-making practices that connect to earth come from the work of the artists themselves that acknowledge that their artform is the result of ancestors’ cultural teachings that recognize how “dependent we are on nature,” and that materials must be harvested.

in the right way. Nonetheless, while scholars recognize place-making as an important aspect of the work of potters, sculptors, and other practitioners of “traditional” artforms, most Native American art scholarship perpetuates the settler-colonial privileging of male artists.

When scholars have attempted to discuss “place” in Native arts the focus remains primarily on Native men. By emphasizing the work of women, a decolonial framework is put in place that not only challenges how women are recognized in settler-colonial art history but, my intent is that this will also transform the Indigenous communities in which the artists are working. I am particularly interested in what happens when the place-making work of North American women artists encounters the museum space, a setting founded on the display of colonialist powers and the cultures they have “dominated.” The dynamic encounter catalyzed by the presentation of work by women artists exploring Indigenous themes in museum spaces cannot be disentangled from the history of colonial contact and legacy of encounters and, thus, can be understood as engaging in an active process of survivance where works by North American women artists are infiltrating colonial museum and gallery spaces with artwork as a stand in for the physical presence of survival of Indigenous North American women, but the need for Native women artists’ presence is also a movement for equity.
Cobell Fellow: Richelle Thomas
Tribal Affiliation: Navajo Nation
Institution: University of Arizona
Degree: PhD – Environmental Science
Research Project: Interactions between heavy metals and medicinal plants, with a focus on the public health of medicinal plant usage in Indigenous lands with heavy metal contamination due to legacy mining

Detailed Research Project Overview
Medicinal plants are critical to the continuation of Native American and Indigenous communities’ identity and culture. Unfortunately, heavy metal uptake by medicinal plants poses a potential health risk, as metal uptake by plants and subsequent exposure to humans are unknown. Heavy metal contamination to soils can result from anthropogenic activities; this has occurred within many indigenous communities because of colonial mineral and energy mining development on Native lands. This research project will identify how traditional medicinal plants react to heavy metals within soils and will construct an exposure assessment to predict human health risk to heavy metals, including arsenic and uranium. Findings will be shared with the Diné community for use in developing medicinal plant harvesting practices and usage guidelines that are
protective of community health. It is expected that the developed environmental justice guidelines will be transferable to other indigenous peoples and communities, as they share medicinal plants and similar histories of legacy mining.

The main objective of this project is to understand the interactions between heavy metals and medicinal plants, with a focus on the public health of medicinal plant usage in indigenous lands with heavy metal contamination due to legacy mining. The Navajo Nation has a mining history that began in the early 1940’s with uranium and eventually coal mining. These areas and mines are left unremediated and pose a significant health risk to residents and individuals who harvest medicinal plants on these lands. Currently, the uptake of heavy metals by traditional medicinal plants and subsequent human exposure is unknown. Plants such as Sage are used widely for medicinal and spiritual purposes in indigenous communities, and the Navajo community of over 150,000 people is no exception.

A history of exploitation of natural resources in indigenous communities from mining and colonial development that has led to anthropogenic contamination of many natural resources, including soils. Many indigenous communities are affected by the potential use of heavy metal contaminated plants. The project solution will utilize advanced analytical chemistry (ICP-MS, X-ray fluorescence) and biological techniques (plant root border cell detoxification activity) to detect, quantify and visualize uranium and arsenic in plant and soil samples, specifically Salvia and Thelesperma. Greenhouse experiments and potted plants will be implemented to control for external factors. There will be control pots/plants (no heavy metal exposure), and additional pots with plants exposed to varying levels of toxic arsenic and uranium. ICP-MS will give a direct quantification of the translocation of the heavy metals from soil to various plant parts. Handheld X-ray fluorescence will be used as a screening tool to identify soils with elevated arsenic and uranium. Root border cell techniques will be implemented to understand the defense mechanisms against heavy metal toxicity in the root zone of Salvia and Thelesperma. This will be the first study bringing together cutting-edge analytical techniques to understand the interactions between heavy metals and medicinal plant interactions. My long-term vision is to ensure the safety of medicinal plant usage of Diné people and indigenous people, and to ensure cultural longevity and resiliency despite colonial development on indigenous lands.
Cobell Fellow: Clementine Bordeaux
Tribal Affiliation: Rosebud Sioux
Institution: University of California – Los Angeles
Degree: American Indian/Native American Studies
Research Project: Examining the intersection of Lakota art and culture to articulate the relationships to land

Detailed Research Project Overview
On October 16, 2020, Camp Mní LúzhAŋ was being erected on public land in Rapid City, South Dakota to address the need for winter shelter for unhoused relatives. Within hours militarized police arrived to demand the four tipis be taken down and anyone affiliated with the camp leave. Houselessness and access to safer shelter has been an issue since the Očhéthi Šakówiŋ people were moved onto Reservations in 1889. Although Mní LúzhAŋ Othúŋwahe (Rapid City) exists within the historic territory of the 1868 Fort Laramie Treaty, it has become a landscape controlled and influenced by settler colonial logics. Why are Lakota people who have an intergenerational relationship with Mní LúzhAŋ experiencing violence? I follow the lead of the community activists and artists that believe that the houseless relatives are not a threat to the settler municipal space, instead our relatives are entitled to live in their historic homeland and exist in their ancestral place.

The purpose of my dissertation research is to articulate the simple and current ways Lakota people signal relationships to land through the intersection of art and culture. I ask, how Lakota people have continued to first and foremost express a relationship to land and place through art and cultural expression? Artists/activists provide a way to understand the social phenomenon of the settler cityscape within Lakota homelands. I approach from three perspectives. First asking, where did I learn that connection to land/place was important? I must define Lakota relationality
from my own understanding of place (land) and center physical interaction with sacred sites. Second, I have to express how Lakota culture communicates the relationship between art making and place. I consider how the creation of specific art pieces expresses cultural relationships. Finally, I ask, how resource extraction can be articulated through visual material like film? I need to prove that images of Lakota relationality result in moving images of land, water, and other-than-human life.

On October 1, 2020, Rapid City Mayor, Steve Allender, in a press conference, stated that “homeless” individuals are addicts and inferred that the local Reservations should bring a bus to the city to take the unsheltered home. Settler leaders like Allender treat Lakota people as threats. Within Očhéthi Šakówiŋ territory, laws continue to displace and dispossess Lakota communities. My project aims to sidestep conversations of settler law and policy because that research is extensive, while many political leaders work on that front. I continue to engage with art practices to demonstrate a continued cultural relationship with land that cannot be expressed through settler law.

As a Lakota woman, scholar, artist, and language learner I continue to grow in understanding how my ethnographic approach to my own histories as well as the history of a Lakota art provides a new connection to language and data. I turn to the breadth of Lakota/Dakota scholars to ground my inquiries (Albers and Medicine, 1983; Deloria,1986; Deloria, 1988; Medicine and Jacobs, 2001; Cook-Lynn, 2007; TallBear, 2011;Marshall, 2012; Estes, 2019). I shape the collection of data through personal and cultural connections to land/place, especially my upbringing in a rural setting. More specifically, I will use a territorial seasonal approach as a lens and guide. I utilize Lakota cultural reference points to guide my research goals. I begin with Blokétu (summer) followed by Ptaŋyétu (fall), Waníyetu (winter), and Wétu (spring). I am influenced by concepts found in ceremonial protocol, preparation for the change of seasons, a time for reflection and an appreciation of nonhuman renewal.

Summer data collection will include using personal histories, document analysis, participant-observation, informal interviews, and self-reflection. For Lakota people and myself, the seasons provide a different perspective of the environment and information(data) available. Summer is the start of ceremonial time and the Lakota Wiwáŋyaŋg Wačhípi (Sundance), which marks a new ceremonial year. Blokétu will be a re-introduction to my home territory and the start of a focused research relationship with my community and land. I am approaching research with the same dedication that further reflects the commitment an individual would give to the Wiwáŋyaŋg Wačhípi. Beginning in July, I re-introduce myself to place and community; establishing and reinforcing an accountability to the knowledge I am gathering and analyzing.
About Indigenous Education, Inc.
Created in 2016 for the express purpose to administer the Cobell Scholarship Program, Indigenous Education, Inc. provides elevated opportunities for Native college students through empowering them with an impactful scholarship experience designed to support their success in higher education. Since the program’s beginning, it has supported nearly 3,000 students with more than $20,000,000 in scholarships. To learn more about IEI and the Cobell Scholarship, visit cobellscholar.org.

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