

# Navajo Birth Cohort Study



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Helping your baby and future generations to grow in beauty.  
**liná Nizhóní. A beautiful life.**



## Luci Tapahonso's "A Radiant Curve"

Luci Tapahonso, poet, author, lecturer, and poet laureate of the Navajo Nation is officially from Shiprock, NM. Her book of poems *A Radiant Curve* was published in 2008. She is Tódich'í'ni, Bitter Water born for Áshjį́. She is a professor at the University of New Mexico where she earned her bachelor's and master's degrees in English.

Elmer Guy, then president of Navajo Technical College, said the chief role of the Navajo Nation poet laureate is "to encourage other Navajo poets, writers, film makers and artists to realize how important their work is to the continuance and growth of Navajo contemporary Navajo culture" when she was appointed for the role on April 07, 2013.

In Luci's prose poem and short story, "A Radiant Curve" about baby's first laugh represents the ways Navajo families have carried on the traditions handed down from one generation to the next.

She has written five additional books of poetry, *Sáanii Dahataat* (1993), *Blue Horses Rush In* (1997), *A Breeze Swept Through* (1987), *This is How They Were Placed For Us* (1994), and *Seasonal Woman* (1982). She also wrote a children's book titled *Songs of Shiprock Fair* (1999).

The *liná Nizhóní* newsletter completes the complete prose poem and short story "A Radiant Curve" with this issue. The second part of **A Radiant Curve** continues here ...



Benny and Jennifer Benally at their home in Birdsprings, AZ on June 16, 1015 Photo by Malcolm Benally.

## An Oral History of Learning to Live with the Navajo Legacy of Uranium

LEUPP, AZ – As a young boy, Benny Benally grew up on a work camp with his family on an active uranium mine called VCA Mine #2 in southeast Utah near Cane Valley, AZ right at the Arizona and southeast Utah border. He is 71 years old. It was after Benny and his wife listened to the Wednesday evening KTNN AM 660 *liná Nizhóní: A Beautiful Life* radio forum about the Navajo Birth Cohort Study that Benny decided to tell his story.

The full impact of the health effects caused by the Navajo legacy of uranium mining still has yet to be known. It is an issue that spans over eight decades that has received very little media attention.

The Navajo Birth Cohort Study is collecting oral histories from Navajo communities affected by the Navajo legacy of uranium so that when the study provides its final reports, the stories can be used to reflect how the communities want their story told to the greater public.

Sarah Alisabeth Fox's informative history of downwinders in her 2014 book *Downwind: A People's History of the Nuclear West* discusses how affected Navajo family members began to share their stories with one another about living near uranium mines as waves of concern became more evident as people became sick and died.

The exposure to radiation became more evident as traditional Navajo ranchers saw their offspring lambs were stillborn or born deformed from season to season. As the risks from long-term exposure became visually evident, the voices from the affected communities became louder.

To make sense of the Navajo legacy of uranium, the affected communities began to organize; collected information with activists who heard their stories, partnered with scientists, researchers, nearby universities, and demanded an

investigation into the problem of what to do about the now abandoned uranium mines that are widespread throughout Navajo land. Slowly, the stories and concerns about the Navajo mine workers and their families who got sick through time. Their stories help to build a momentum that eventually led the Navajo people to tell their story to the greater public that triggered a hearing within the U.S. Congress in 2007.

Benny Benally, 76, from Birdsprings, AZ tells his story about growing up on a uranium mining camp when he was a young boy and his father worked for Vanadium Corporation of America near a uranium processing mill based in Mexican Hat, Utah about 10 miles away during the 1950s.

On page 4 of this issue, Benny Benally tells his story and "Learning to Live with the Legacy of Uranium Mining" continues.

Benally cont. pg. 4

**A Radiant Curve** - a short story about baby's first laugh from Navajo-Din4 poet Luci Tapahonso.

# Navajo Birth Cohort Study Newsletter

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## liná Nizhóní Newsletter 2014

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*The Navajo Birth Cohort Study is approved and monitored by the University of New Mexico Human Research Review Committee and the Navajo Nation Human Research Review Board*

## Helping Your Baby and Future Generations to Grow in Beauty.

The Navajo Birth Cohort Study began enrolling participants in February 2013. The study enrolls moms-to-be and dads all across the great Navajo Nation.

By the winter of 2016 and over the span of three years, the Navajo Birth Cohort Study has now recruited over 575 participants!

Participants must give consent for the collection of home environmental and biological samples (blood and urine) during and after their pregnancy. The child's development will be evaluated up to 12 months of age.

The outcome of this study is to provide the first Nation wide documentation of the possible associations between environmental uranium and other heavy metal exposures and birth outcomes and child development.

The data from the study maybe used to improve future birth outcomes and services.

The project currently enrolls pregnant women between the ages of 14 and 45 years of age who have lived on the Navajo reservation for a minimum of 5 years. Moms-to-be must have a confirmed pregnancy and plan to deliver their baby at one of the five Indian Health Services facilities on the Navajo reservation. Parents must be willing to have their child involved in the research for the baby's first year which includes collections of small amounts of blood and urine, and answers questions about baby's developmental milestones.

Our community updates are designed for all stakeholders including community groups, community-based organizations, health care professionals, chapter officials, community planners, and many more.

For more information, please call 1 (877) 545 - 6775.



**Life is Beautiful**

### Navajo Birth Cohort Study Part XVIII: Community Voices

The Navajo Birth Cohort Study Part XVIII Community Voices shares important study information about the effects of uranium (and 16 other heavy metals) on the development of children on the Navajo reservation.

This short video provides a short story told in an oral history by Benny Benally from Birdsprings, AZ who lived as a small boy on a uranium mining camp at VCA # 2 mine near Mexican Hat, Utah, an outdoor uranium mine camp for Vanadium Corporation of America. Benny shares the stories of many families and friends also affected by the Navajo legacy of uranium mining.

You Tube link is <https://youtu.be/iiFI2LDesCM>

### Navajo Birth Cohort Study Part XIX: Year 2016

The Navajo Birth Cohort Study enters its fourth year of recruitment in the study and continues environmental monitoring in participant's homes. This short video provides up-to-date contact information in its effort to recruit over 1,500 participants.

You Tube link is <https://youtu.be/Y7bIXuTP8X8>

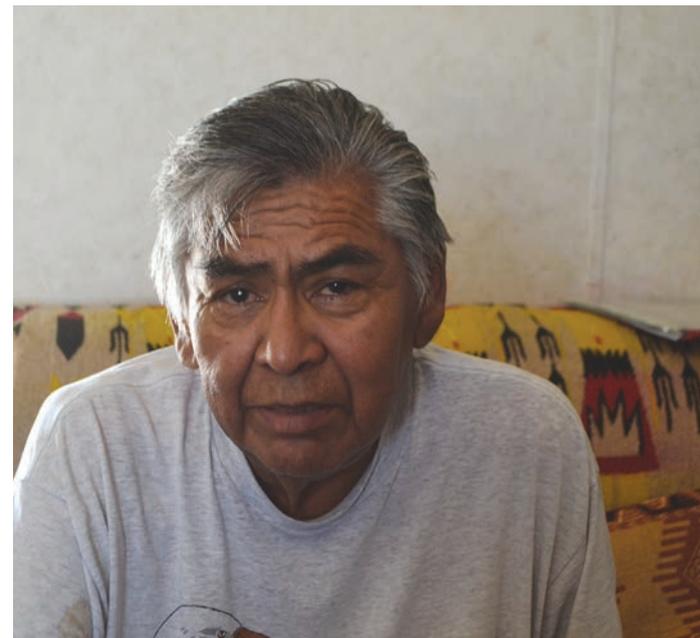
# "lin1 Nizh0n7. Life is Beautiful."



Mya Benale, Big Mountain, AZ, is the model for our Kinaalda photo essay, and proud big sister of first year NBCS participant Leia Benale, 1 years old. Photo by Malcolm Benally



Mae-Gilene Begay, NDOH CHR/Outreach Program Director, NN Vice-President Jonathan Nez, CHERS Program Supervisor and staff member, Window Rock, AZ, 2015. Photo by Malcolm Benally



Benny Benally, 76, Birdsprings, AZ, June 2015. Photo by Malcolm Benally

baby's happiness and emphasizes the import of a sense of humor.

Many relatives and friends are invited so that the baby will never experience loneliness and will always be surrounded by the love and concern of many. The Holy People wanted to ensure that the baby would be aware of her extended family and the larger Diné community.

The ceremony also honors Old Salt Woman, because she taught that one needs áshjìh, salt, to remain strong and healthy. In fact, medicine man Raymond Jim Redhouse, who specializes in the *Wind Way* and *Blessing Way* ceremony, teaches that we need nine types of salt to exist. Old Salt Woman is a role model of Diné ideals: remaining physically healthy, maintaining a positive attitude, and attaining old age.

Sometimes it is suggested that a person who is sullen be given a dose of salt; this makes members of the Salt Clan happy. But it is also said that the Áshjìhí are naturally good-natured and generous - a tribute to Áshjìh 'Asdzáan Sání, as she is the progenitor of the Salt Clan.

The various beings and Diyin Dine'é took part in White Shell Girl's upbringing. She was taught songs and prayers about every facet of daily life: cooking songs, weaving songs, songs to keep animals healthy, songs for fixing one's hair, hooghan songs, songs for birds and other creatures, and planting songs. Parents are complimented when someone says, "Your children are well-behaved and respectful; you must really talk to them." In "talking to" a child, our traditional beliefs are passed on in a respectful and spiritual way, as this was how White Shell Girl was treated.

When we listen to 'Álk'idáá' hane', stories from the beginning of Diné time, we respect and continue to adhere to the Holy People's teachings. They laid out a diagram of life for us, the Diné to follow, and no matter where we live or what path we undertake, their teaching always guide us.

\* \* \*

The hane' concluded that evening: the second day after Shisóí Isaiah laughed. Our children and grandchildren got up to leave, and they checked things one more time in the living room. They had corn pollen for prayers at dawn.

After they left and the house became quiet, joyful expectation lingered in the air. I whispered a prayer of gratitude for gift baskets, the huge bowls of fruit, the rearranged room, the blanket-draped furniture, and the many containers of prepared food. I recalled the First Laugh Ceremonies of my children, then my grandchildren, and the ways they embodied, perhaps without knowing it, the many qualities that Changing Woman/Old Salt Woman and the

Holy People hoped to instill: respect, sharing, and appreciation of family and kin. This must have been how First Woman and First Man felt, I thought, as they prepared for Old Salt Woman's arrival. They were thankful and happy, and they believed in what the future held for them and their descendants.

\* \* \*

Early the next morning, though the sun was obscured by thick mist, I offered prayers on the front porch. When we looked for a home in Lawrence, I told the realtor that a major consideration was that the front door face east. In each home we have lived, this has been the case. Though we live away from Dinétah, this is one way to maintain the traditions regarding the hooghan, the home.

This concept of the east and sunrise relates to the day when First Man found the baby who was a "white shell held by glistening mist," and when the Diyin Dine'é created Blanca Peak and the other sacred mountains. All prayers and songs begin with references to Blanca Peak and White Shell Girl, among other aspects, and so one enters a ceremonial hooghan from the east and proceeds in a clockwise pattern. So the "proper way" to begin any task or project is to start in the east, then south, then west, and finally, north. This idea can be applied to cleaning a home, stirring a pot of food, leading a discussion, developing a project, or in this case, preparing for a First Laugh dinner.

On the day of the ceremony, as Misty and Lloyd greeted people, the grandchildren took turns offering coffee, water, or soft drinks. Shisóí Isaiah was very observant and curious about the attention directed at him. We had arranged the ceremony in the afternoon after his usual nap, so he would be alert. He shook hands politely with everyone when his parents said, "Yá'át'ééh diní" (shake hands "hello"). Though he didn't smile readily at the guests, he had an open and thoughtful expression.

After the meal, we gathered in the living room. Since some guests were not Diné, I spoke about the origins of the tradition. In abbreviated form, I spoke about White Shell Girl and the intentions of the Holy People, emphasizing how everyone's presence would benefit Isaiah, as well as our family.

A line formed as Isaiah sat on his mother's lap and listened calmly to the various wishes of his guests. Lloyd helped him place salt in their palms and, after they had pronounced their wishes, offer gifts and fruit. As each person knelt in front of him, Shisóí was calm and quiet. Perhaps White Shell Girl did, he was beginning to understand his role as a Diné person.

As mentioned earlier, this ceremony was first performed for White Shell Girl, who grew to become Changing Woman. It was said that White Shell Girl was the first Diné to have human form. Before she existed, our ancestors journeyed through three prior worlds and did not acquire physical form until they emerged in the present fourth world. (In some stories, this world is referred to as the fifth world, depending upon the storyteller and his or her age and on regional differences.) They were then called the nihookáá Dine'é, or Earth Surface People, because the Diyin Dine'é, the Holy Ones, decided this is where the Diné would live. The designation as Earth Surface People is linked with White Shell Girl because, in some accounts, when First Man first found her, she did not assume human form until she was placed in First Woman's arms.

In a more familiar version, it is said that there were three worlds through which the original Diné and various beings journeyed before they emerged into the fourth world in northwest New Mexico. These worlds were black, blue, yellow, and white. The journeys were filled with fear, starvation, hunger, and other dangers. Unseen holy beings guided the people through each world as they experienced warfare, chaos, and other extreme perils. As they traveled, they realized that their survival, and that of their descendants depended upon the knowledge and wisdom that they acquired during this time. They attained skills such as tool making, food preparation, farming, and hunting; they also learned that respect for all living things was essential. This early body of hane' comprised the origin of Diné philosophy and teachings and demonstrated that the ability to remember, to pay attention to details - including landscape and language - and to relay this information accurately was crucial.



*A Radiant Curve cont. on page 8.*



# Living With the Navajo Legacy of Uranium

Yá'át'éełh ląq nihaa noo' áázhígíí. Shí éiyá Benny Benally dashijini dóó "seventy one" shináahai. Áádóó Tsi'naajini éi nishítj. Hashítí'shnií éi báhshichíín. Ta'neeshahnii éi dashicheii. Tséniyékiní éiyá dashináál. Ákót'áo éi Diné nishítj. "Birdsprings" hoolyé, áadi éiyá shí'dizh'ch'j' t'áa Diné k'eho éi Tsídiito'í hoolyé áádóó éi hoséłj'.

Áádóó t'áa'ąaní dli k'óq baach'ihonish'aahígí éi doo t'óó "jini" jinííóó áadi atah honishl'óq nit'ée'. "It was about ...1952" yéqéq'á shizhé'é áadi naalnishgo "Tséhaagééd" dahojini. Bilagáanaa k'ehjigo shí' éi "VCA Mine Number Two" dahojini ní'tée'. T'áadoo éiyá "Dii báhádzdí" danihi'doo'niida áadin. "Kó'ootíit." "Dii kót'áo até'é'tj." Doo ha'niida. Doo bee bich'j' bee yádaati'da nihahastóí dóó nidajinishíi ákwe'é. Haashí' néelq'á' t'óó béésiikai. Bitda'iidq'á dóó t'áa ákót'áo tó da bitdeiidq'á.

\* VCA Number Two: also known as Monument # 2, a uranium mine company leased out by Vanadium Corporation of America (VCA) from the Navajo Nation near Cane Valley, AZ beginning on August 3, 1943.

Hello to our visitors today. My name is Benny Benally and I am 71 years old. My first clan is Black Forest Streak. I am born for the Mud clan. The Yucca Fruit Strung Out In A Line is my maternal grand-mother's clan. The Rock House clan is my paternal grandmother's clan. This is how I am a man. There is a place called Birdsprings, Arizona where I was born.

The story that I'm going to tell is very real because I am going to talk about the place where I used to live. It was about 1952 my father worked at a "rock mine". In the English language, this uranium mine was called "VCA Number Two". No one ever told us, "This place is dangerous." No "Hazardous" signs. "It can make you sick." No one ever said this. The men who worked there were not warned of the dangers. Many of us were exposed to this. We ate near the mining and drank water from there. Dynamites

Nigháíj' da'dildqno t'áa ák'óq "campus." "Camp" nahalióo t'áa ák'óq keedahwiit'j'io. Atné'é'ááh bich'j' hodilzhisho da'dildongo yááhiitdaas aadéé'. Áko ch'aha'oh t'éiyá kin ádaalyaa t'óó tsiihineeshj'í' athiidaasnilo, níbaalda naaznilo. T'óógóo da'iidq'. T'áa shí' ákót'áo bitda'iidq'. Tóda shí' t'áa ákót'áo bit deiidq'á áko. T'áa ákót'áo táyi'da bit nideiina' teh níléi atchíní yázhí daniidlóo. Áko t'áadoo nidi bee nihich'j' ha'oodziida: "Dii kó'ootíit," doo nihí'doo'niida áadin. T'óó ákwe'é t'óó da'iniish áko t'áa lq'í náahai áko. Haashí' néelq'á Diné ák'óq kéedahat'j' ák'óq deiiniish naanish t'éiyá binahji. Haashí' nítso hach'j' nidahalyéo. Bilagáana niłjn'gí éi t'áa áyisíi t'áadoo nihich'j' deeyáada áajj'. Éi shí' t'áa iídq'á daats'í hotbéedahózin hóla.

Áko Bilagáanaa nihitah yigáat doleet iyisíi bee bídahótíih

were blasting near the campus. We set up camp here as a family. Around noontime dynamite would explode into the air. We had set up shade with used lumber and small tents were up everywhere. We ate outside. We probably ate with all that downwind. The water we drank was probably tainted, too. The same way, we played in the water puddles when we were children. No one ever came around to tell us: "The dust can harm you." No one gave us any warning. Our parents worked there for many years. Many Diné families were at the job site to work for the uranium mine. I do not know how much money people were paid. Not one Anglo person ever came by to visit us at the camps near the uranium mines even when they probably already knew about the dangers.†

Not one Anglo person in charge of the mining operations ever came

† According to Arizona Geologic Services website Monument 2 produced more uranium from 1947 to 1970 than any other mine in the state of Arizona, with estimates ranging from 773,132 tons to 766,998 tons according to production history records. Cited from [repository.azgs.gov/category/place-keywords/cane-valley](http://repository.azgs.gov/category/place-keywords/cane-valley)

## Research conference begins by providing top 15 mortality rates on Navajo Nation.

Ramona Antone-Nez, the acting Executive Director of Navajo Department of Health shared the top fifteen leading causes of mortality among Navajo people as a part of her opening remarks at the Navajo Nation Research Conference at the Navajo Nation Museum in Window Rock, AZ on Wednesday, October 22, 2015. She shared this information to get the audience to think about ways that health care professionals can provide preventive care that may help people to make healthier choices and learn more about their environment.

The top fifteen mortality rates among the Navajo people comes from the findings provided by the Arizona and New Mexico Department of Health in a three year study from 2006 to 2009.

1. Unintentional injuries.
2. Cancer.
3. Heart Disease
4. Diabetes
5. Chronic liver disease and cirrhosis.
6. Pneumonia and Influenza.
7. Suicide.
8. Stroke.
9. Emphysema.
10. Dementia.
11. Assault.
12. Alcohol dependence syndrome.
13. Renal failure.
14. Hypertensive disease.

15. Chronic obstructive pulmonary disease.

The NDOH director Anselm-Nez reminded everyone in attendance that the findings she shared with health care professionals and conference participants will help educate people to know more about their environment, and "hopefully, provide the tools necessary to make changes in their lives."

The Navajo Epidemiology Center has a website that page that provides all the research findings that are published about Navajo health and wellness at this website: [www.nec.navajo-nsn.gov](http://www.nec.navajo-nsn.gov). All the publications that are found at this website have been approved by the Navajo Nation Research Review Board.



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doleefígí doo áádí nidajikaida. T'óó há nidaalnishí t'óó bich'í' naal'a'á dajilínígí éí t'éí áají' nihitah nídadikah. Tsxjito t'óó kót'áo. Áko naanishjii t'éí yilwot. Áájí Diné deiylínísh áko. Íídáqá' Diné haashjii néeláqá Diné bééhasin Dennehotso dóó. Áádóó lq'ída ashíiké dajilí íídáqá' índa éí dahastóí daazjii' áají' adahwiishzhizhgo nidajilnish. Éí yéé íídáqá' Diné nidaashnishéé doota' naagháada k'ad. Haashjii néeláqá' Diné náábidiídlá. Aqadahaz'áanii bee díí ajáí naagháagi índa nídahidiidzihi. K'ad shí ákónisht'é áko k'óq. Doo naasháagóó áshíilaa daats'í hóláa t'óó ákót'éhí díí shitahígi. Índa náhidiisdziih nitch'ih at'qá át'éeego k'óq sétnel níláhóó t'áá níléigóó atsinilt'ish baa anált'ihíí.

Áko díí yáshiti'ígí nidi náásgóó yáshiti' dooteelígí t'áá bąq ch'ééhnídíshdáh nahalin. T'áá yéego nítzil nahalingo áko kót'áo shich'í' ánáhóót'i' siljii'. Áko hastóí béédahasinéé ákódaaníó. Holaa kónisht'eh la' ts'ídá doola' ínisht'eedane' daanígoda bich'í' nídahwii'náo ábídaiyiská.

Ákot'áo béésikái áko yéego éí béé'ásdee'. Áadoo éí díí báhádziid áadoo danihi'dooniida áadoo bínanihi'dineestáqá'da. Doo bindaho'dineestáqá'da. Ádin. T'óó bíi'ooldee' siljii'. Naanishígí bits'áádéé' béeso nídidoót'ááto, "Dóó hait'áo sha'átchíní yee kééhnídadidool'is?" Kót'áo shjii nitsídajikeeso áko naanishígí t'áá bit béésikái ákódzaa jidáqá'.

Shizhé'éyeyé ákódziidzaa hąqah'dahoo'a'. Naanish bits'ázhniyáádóó kodi Birdspringsai nániikaigo bich'í' hodeeznáá'. Hatsá'áshk'azhígí áádóó náhizidizihii áadoo hajéí t'áá éí hajéí ninítt'ad qadahaz'á níilnígí hajéí ninítt'ad áko. Shimáhąq t'áá ákónánádzaa. T'áá ákót'éeego "cancer" wolyéhígí baatihiyá. Áádéé' yínáyáhąq shjii kót'áo nibiniitgo' áajii'. Kót'áo nihidiné nihits'áqá' anídahaskai. Doo ádaadzaagóó doo ádaat'éhígóó

to talk to us. Only people who worked for those in charge bothered to come around to our camps. They came through in a rush. But, the work continued. Diné people kept on working. I knew many Diné people from Dennehotso. Many were young men who became older men while working there. Many of the men who worked at the uranium mines are no longer alive. A lot of people have died. People had heart problems and trouble with breathing. This is the way I am now. I cannot really walk anymore and this has affected my overall health. Even to breathe right I am in need of these oxygen tanks that help me by plugging it into an electrical outlet.

Even the way I talk, if I was going to talk for a long time it is going to make me tired. It seems like it is getting harder for me to talk at length now. Even the men I used to know say the same thing. They talked about how they lived with no health problems then they slowly became sick and died.\*

This is what happened when people were exposed. No one took the time educate us about the dangers of the mining. No meetings were held. Nothing. We just walked into it. The people only thought about the need for work to make money, "How can I put shoes on my children's feet?" This is probably how people were thinking and this how we were exposed.

My father got sick from working at the mine. After he retired we came home to Birdsprings and that is when he began to suffer. First he had kidney problems, then breathing problems, and slowly his heart troubles gave him a heart attack. Then my mom got sick and died. She became very sick again from a disease called "cancer". Whatever she was exposed to at that mine killed her. A lot of our people died in this way. If our men and women were not exposed to

shjii éí k'ad sáníiyéé sání, hastóída daazjii' doo nít'éeé'. Áko díí t'óó ákót'áo béésikáiígí binahjii'go shí sézjii'gí ákósdzaa áko. Ákót'áo éí shináá' bee yiitstáqádóó ákót'áo éiyá doo t'óó "jini" jini dishnió ádishníida díí. T'áá'qanií éí ákódzaa. T'áá yéé qadahaz'á bit ahaach'iniikai kodi. Ákót'áo éí baahashne'go ádishní díí.

Kónít'éeéla shi'di'nío ako azee'lée' áádéé' shaanídeejih éí díishjii'di azee' hashjii'néelte' éí yishdeet. Éí bits'áqádéé' áádéé' kóniilaa lá doo dashitníida. "T'óó naadahaz'á dóó yéego nich'í' ánáhóót'i'. Nitsq'ask'azhígí ta' náchóidoot'eeet nidi nan'di-doolgishígí nijéíígí doo bidziilda doo yich'í' bidziilda. Níláhadi ni'dishgishgo nijéíígí t'óó niidoottit. Kwé'égi doo nánáyá'at'éeéha. Biniinaago éí bíh't'áá ákónít'é t'áá azee' t'éí nildeet doo." Níláhadi "dialysis" dahojini, Dinék'ehjóo shjii éí "dit nábéézh" daats'í wolyé. Áadi atahnáshdáh éí t'éí náasnoodzís-doo daashjii nízádajii' shi'doo'niid. Áko éí shit chohoo'í niljnéé shits'áqá' ádin ákwe'é. Háajii'ída banáá' - doodliitíí ádino siljii'o biniinaa éí t'áá ákóq t'óó átnánáshdáh siljii'.

Índída nitch'í' naagháagi t'áá ákót'é. "Doo t'áá íyisii' yéego náhí-dídziihda. Nitch'í' naazniligí éí choiínit'jidooleet. Tsídá kwe'é sigizo haashjii'néelt'e' naaki daats'í bee áajii' aninánígiso éí t'áá níká análwo'dooleet itwhoosho. T'áá tsxjii' náhidídziih dooleet t'áá náhidídziih yéeyé' át'áo yeeniká análwo'doo," shi'di'nío. Éí ákósh't'í' áko éí ákót'áo t'éé'o níláhóó sét'áníígí shich'í'ghóné' anásh't'ího. Béeso shjii hashjii néeláqá' shjii bąqah íljiniidi t'éé'biighah yilwofo aadéé' shich'í' nitch'í'ígí ch'oosh'jio ákót'éó t'áá yá'át'éeéh áko t'áá haashjii nízahóó ná'iishwhosh. Kwe'é t'éí shíká análwo'. Áadoo shijéí niljníígí díí k'óq ha'íishjii óolyé "defibrillator" daats'í wolyé éí t'éí ákwe'é shijhdeez'á. Níká análwo'dooleet éí

radiation in the mines then our Elders would still be around today. It is because my family lived near the mine that is how I became sick. I saw all this with my own eyes so it is not just a story I heard that I am telling again over and over. It really happened this way. We have to deal with all the sickness. So this is the story I am telling here.

When I found out more about my health problems I now have different prescription pills that I must take daily. The doctors never say what caused my illness. "You have a severe disability. You can receive a new kidney but your heart is too weak to survive the surgery that will be needed for a kidney transplant. The surgery that is needed is likely to cause your heart to stop. This does not look good for you. So, the best thing you can do is to just take your pills from now on." I just go to "dialysis", in Navajo it probably translates into "boiling your blood." This is the only place I can go that is going to keep me alive. All my hopes to be well and healthy again are gone. There is no place I can go where I can regain my health so I just go to my appointments.

Then my breathing is the same way. "Your breathing is not strong. You must use oxygen tanks from now on. You have to turn the oxygen on to the right levels so that the machine can help you breathe while you are sleeping. These oxygen tanks will help you breath as normal as the way you used to breathe," I was told. Every night before I go to sleep I put a tube by my nose to help me breathe right. Even though this probably costs a lot of money to keep the oxygen going all night for me to keep breathing normal and I can get a good night's sleep. This is how it helps me. And for my heart, I have this thing I think that is called a "defibrillator" that they implanted inside of me.<sup>§</sup> I was told that this

<sup>§</sup> Implantable cardioverter defibrillator (ICD): this medical device for heart patients have this surgically implanted in the chest for in the abdomen. A defibrillator is used by doctors to treat patients who have arrhythmias (irregular heart beats) or have sudden cardiac arrest. <http://www.nhlbi.nih.gov/health/health-topics/topics/icd>

\* The New England Journal of Medicine published a June 1984 report documenting that 72% of 32 lung cancer cases in the New Mexico Tumor Registry were attributed to Navajo men who worked in uranium mines.

níléí nijéí k'adéé niiltáádoó nijéígi atch'i' kót'ijho t'áá bí náyiitash dooleet kót'áo. Nijéígi náyiit'asho éí yeedahníidilwo' dooleet nijéí dahnéiidiitwo' dooleet. Shi'di'níó éí ákót'áo shiíh'yit'á'índa nijéígi tsxj'to dahniilwodo téego t'áá tsxilóo dahniilwodo ákót'áodó' yidoofash t'áá beehaz'ánigi át'áo nijéígi nánáalwofdo. Díí ná ányíil'ijho doo shi'di'níó shiíh'yit'á'áko shqah si'qo binahji' táadáshááh. Áko t'áá'-qani' ákónisht'é. T'éé'oda iish-whosho ts'ida t'ááhoosch'i' shijéí shj'í ákót'ijho t'áá ashwhosh nít'éé' yiyiit'qsho haashji' nízáadi yanáashhish. Yááshiyiithxqáh nahalin éí bee shít' bééhózin. Dóó azeé' íit'ínidó' nídeinél'ijh áko níléí baanáshdááho azeé'á'í'j'dí shéédeiidiit'ihii'.

helps me when my heart is about to stop. The defibrillator will send a shock to it. When it sends a shock it will get my heart to start pumping again. This is how the defibrillator was implanted so that even if my heart starts beating fast the defibrillator will send a shock to bring my heart rate back to a normal pace. I was told this implant keeps my heart going so I wear the defibrillator everywhere. This is how I am living. When I go to sleep at night I can have heart trouble and while I am still asleep it sends a shock that throws me up in the middle of night. When it throws me up I know my heart was in trouble. The doctors at the hospital monitor this when I go to the hospital they read my heart's activity.

"Da' nijéísh niilt'ad nít'éé'?"  
 Shi'dooniid kwe'é ákót'áo.  
 "Ao'," dfiniid.  
 "Íyaa koodí bikáá'. Nishtqsh lá yéego." Shi'dooniid. "Bee ádaa'ákólyá." Shi'doo'niid.  
 Nít'éé' ákódzaa áko. Índa shijééhkatdó' daazj'í' kóq. Áko éí díshj'í' qahdahaz'ánigi bee bit'ahaach'íniikaigi binahji' kóq ákót'áo nihahastóida nít'éé' yiniinaada shj'í daats'í ándahaaskai. Be'ina' átsíhigo daazj'í'. Ákót'áo bee nesh'í' dóó bee nitséskeesígi bik'ehogo ákót'é nahalin áko.

"Did you have a heart attack?" They will ask me.  
 "Yes." I say.  
 "The reports say that the defibrillator shocked you." I was told, "Take care of your heart."  
 So this is what happened. I am also hard of hearing now. To this day we all have to deal with different kinds of disabilities that has taken the lives of many of the Elders in our communities. It seems like their lives were cut short. This is what I have seen with my own eyes when I think of all that has happened.

**UNM CEHP Staff research findings notebook**

17% of study participants have urine uranium concentrations greater than the United States 95th percentile. Babies that were found to have uranium levels at birth also showed that they accumulated higher uranium levels over their first year of life.

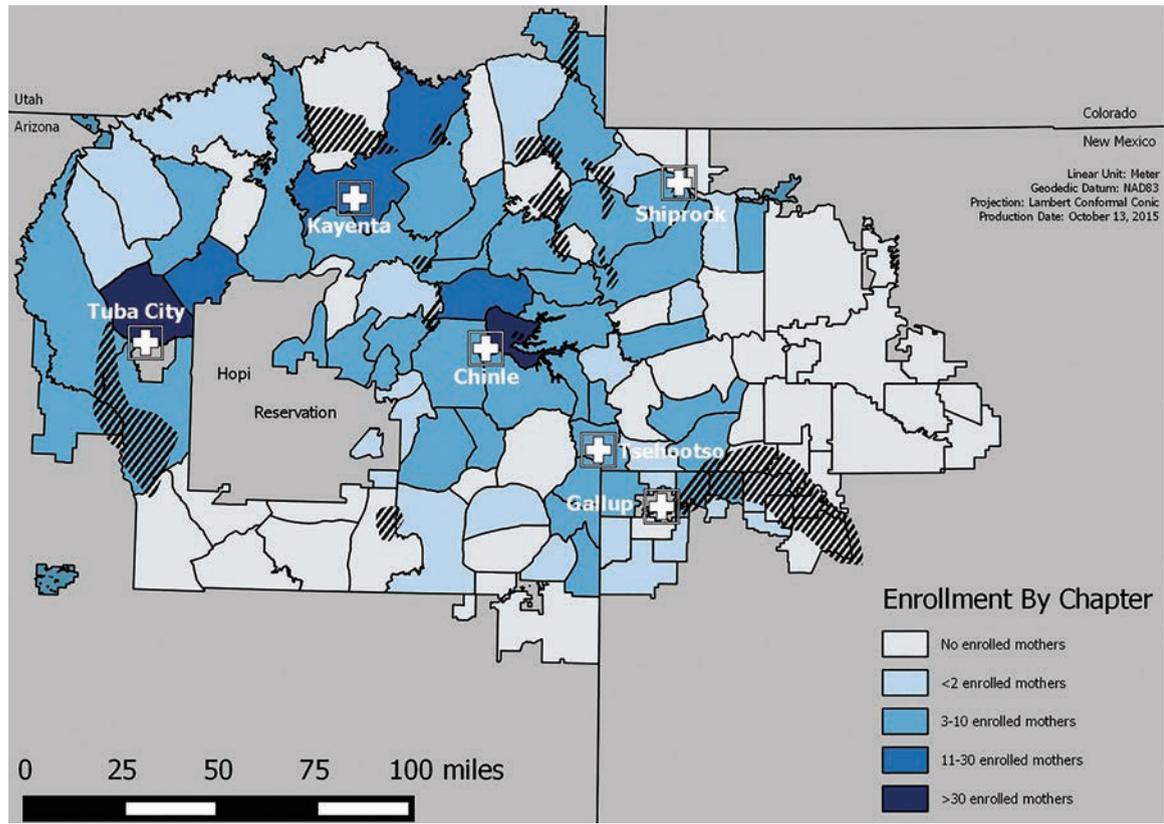
The heavy metal **arsenic** has been found in home dust and in some water sources used in the participant's home.

Uranium has been detected in some baby participants in their first year of life. NBCS participants have a much higher concentration of uranium in their urine than other people in the United States.

Navajo Birth Cohort Study Enrollment Numbers as of January 2016:

589 Mothers	Total Participants
455 Babies	
184 Dads	

**Now is the best time to enroll! Your participation as a mother, father, and baby for the Navajo Birth Cohort Study helps to increase our understanding of long-term exposure to abandoned uranium mines (and 16 additional heavy metals proven to affect the kidney), and will help us to answer the question: does long term exposure to uranium affect the development of children living on the Navajo reservation?**

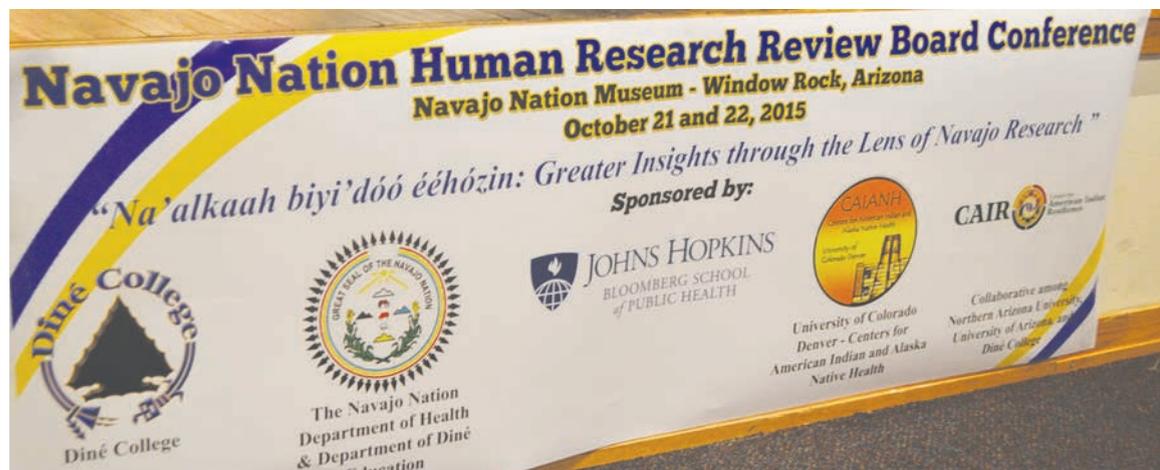


**UNM CEHP Staff present research findings on the Navajo Birth Cohort Study at research conference.**

WINDOW ROCK - Joseph Hoover, PhD., researcher at University of New Mexico Community Environmental Health Program provided statistics and maps that are relevant to the Navajo Birth Cohort Study. The map above shows the number of mothers enrolled from each chapter on the Navajo reservation. For example, the dark blue color chapter regions near Chinle and Tuba City have 30 or more mothers enrolled in the Navajo Birth Cohort Study. During his presentation, Dr. Hoover pointed out that the study has over 575 mothers enrolled and 300 babies have been born as participants in the study for one year. The study also recruits father participants, so there are approximately 900 enrolled members in the Navajo Birth Cohort Study at the end of year three of recruitment.

"They way I understand the study, the core of this research project, I think this project is really about community concerns associated with potential health impacts from exposure to mine waste. It could be the mines themselves. It could be the waste piles. It could be milling. ... For the Navajo Birth Cohort Study, we use a variety of assessment tools and mechanism to evaluate potential exposure through collecting behavioral information, environmental information, occupational history, family history, and we ask people all sorts of survey questions. We collect a lot of environmental information from within participant's homes. We identify where their drinking water comes from. If it's an unregulated water source, we collect a sample and it's analyzed for us by US EPA Region 9. The ultimate goal of this project, is that we are really trying to understand the impacts of metals exposure during the prenatal period, during the first year of life, and its impacts on health, not just for baby, but also for moms and dads who are enrolled in the study."

If participants come from every chapter, the results gathered from the study will be more representative of people on the Navajo Nation; so recruitment of new participants across the Nation is still a key element of the Navajo Birth Cohort Study as it enters its fourth year of recruitment.



# Na'alkaah 1ln4h bahane' naanish 47

The Navajo Birth Cohort Study newsletter, *liná Nizhóní* is a tool provided by the study to help educate our Navajo communities as well as the greater public, encourage open dialogue about issues surrounding long-term exposure to uranium.

We want to share information about preventive and healthy things you can do around your home to keep your children from breathing in dangerous heavy metals that may loom in the air from human activity as simple as burning wood or coal, working in a uranium mine or living near an abandoned uranium mine, jewelry making, or even from burning trash.

Anna Rondon, Program Supervisor for the Navajo Birth Cohort Study CHERS staff says, "Let's do this together with a collective consciousness. Let's talk this through and name this enemy we call *leetso*. Let us give this *leetso* its proper name so that we understand it well. This is the way we can heal our communities by getting rid of it. Let's do this." she said.

Pick up a copy of *liná Nizhóní* newsletter today, or download a copy from our blog site: [nbcsh.healthyvoices.org](http://nbcsh.healthyvoices.org). Like us on Facebook. Check out our website: [www.healthyvoices.org](http://www.healthyvoices.org)



## Navajo Birth Cohort Study Wraps up Year Three with presentations at 2015 Navajo Nation Research Conference

The chairwoman of the Navajo Nation Institutional Research Review Board, Beverly Becenti-Pigman, originally from Kayenta, Arizona gave the opening remarks at the recent 2015 research conference in Window Rock, AZ. "You can do anything that you want to do to improve health on the Navajo Nation and improve education, and I challenge you to do so," she said.

She addressed the younger people in the packed auditorium, "Know that as college students, you are the answer to the health and education and environmental protection of Navajo families and children." As chair of the research review board, she told a story about how instrumental it was to take the stories of Navajo families and listening to community needs, to bring dialysis centers to small towns on Navajo lands making it easier for dialysis patients to stay closer to home for their health care needs.

The Navajo Birth Cohort Study gave presentations all day on Wednesday in break out sessions that covered many aspects of the Navajo Birth Cohort Study. The highlight of the day came when the Community Health Environmental Research Staff (CHERS) gave a presentation about their field work that is spread across the Navajo reservation with bases of operations at six regional hospitals in Tuba City, Kayenta, Chinle, Fort Defiance, Arizona, Shiprock and Gallup, New Mexico.

The field work involves traveling out to participant's home to do home environmental surveys, a survey called "ages and stages questionnaire" (ASQ), and to get samples to test for environmental quality inside participant's homes. The presenters, Quterah Anderson, Mae-Gilene Begay, Nikki Begay, and Roxanne Thompson talked about working as a team to cover thousands of miles of travel weekly.

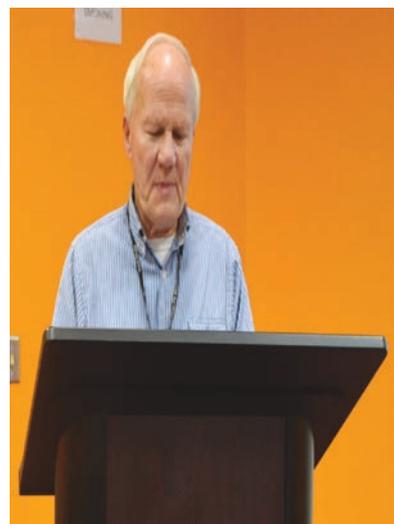
Presentations from team members of the cohort study was organized into two days of presentations from Southwest Research and Information Center, University of New Mexico's Community Environmental Health Program staff, Indian Health Services, Navajo Department of Health, Community Health Environmental Research Specialist, and its study co-investigators .

Southwest Research and Information Center (SRIC) reported that they have completed more than 420 homes of moms enrolled in the study. The most homes surveyed were in the Tuba City and Chinle regional areas due to the communities' high enrollment numbers. About 75% of the moms enrolled in the study have already had their home environmental assessments completed at the end of Year 3 of the study.

The most common metals found in dust samples from participants' homes are uranium, lead, arsenic, manganese, iron, antimony, and aluminum.



Dr. David Begay, from Ganado, AZ, and UNM CEHP co-investigator, presented cultural world-views of Navajo people and how its perspectives play into Western science and academia.



Doug Peters, Ph. D., gave a report on Indian Health Service hospitals providing a birthing center for the Navajo Birth Cohort Study. The IHS hospitals and 638 hospitals provide birth units, collecting urine, blood, and meconium samples for the NBCS, in partnership with the Centers for Disease Control.

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# "A Radiant Curve"

After this, Misty and Lloyd rose and thanked everyone for their expression of support and caring in their son's upbringing. Isaiah's aunt Lori also spoke about the meaning of such events in a child's life, and Bob and I expressed our gratitude. As people left, Isaiah stayed with his parents at the door to bid farewell to everyone. As if on cue, when the last guest departed, he began whimpering and wiggling to get out of his father's arms. We laughed as the children took him to join in their play.

We began to clear the kitchen and restore the house to its usual state; the ceremony was reassuring in many ways.

The experiences of the people during this journey shaped aspects of contemporary life. For instance, the origin of the sacred mountains evolved when Ałtsé Hastiin, or First Man, took a handful of soil as he left each world. And when the group emerged in the fourth world, First Man had handfuls of black soil, blue soil, and yellow soil - the colors of previous worlds - in his medicine pouch. When the Diyin Dine'é, the Holy People, began to conceive of a home for the people in the fourth world, they placed the soil in the center of the four mountains that they created to serve as boundaries of Dinétah. Blanca Peak was set in the east and is white (which represents the fourth world), Mount Taylor in the south is blue; the San Francisco Peaks in the west were yellow, and the La Plata Mountains in the north are represented by black soil. There are additional sacred mountains, but these compose the primary four.

The Diyin Dine'é exemplified the importance of thinking tasks through carefully and initiating responsibilities with the future in mind. The rituals and beliefs that are associated with each stage of a child's life, including the First Laugh ceremony, were implemented with the idea of Ntsíhákees, thinking, at their core.

As White Shell Girl grew, she was fed ordinary food as well as specific types of pollen that allowed her to mature quickly; thus corn pollen is considered "the food of the Gods." When her menses began, a puberty ceremony, the first Blessing Way, the Kinaaldá, was held. There was much rejoicing, because it represented the renewal and rejuvenation of the earth. She then assumed the name of Changing Woman.

At some time after the Kinaaldá, here coming of age ceremony, Changing Woman became pregnant with twins, whose father was the Sun. Her sons, Bon for Water and Monster Slayer, were raised at Dził Ná'oodilí, or Huerfano Mesa. When the twins were young men, they set out to find their father, who put them through a series of tests to prove their worthiness. During this period, Spider Woman, a holy being, guided them and protected them from their father and the various monsters that roamed about. It was said that these monsters were a result of the people's misconduct in the previous worlds. In the end, the Sun provided the twins with magical tools so that they could slay the evil beings, therefore ensuring a peaceful fourth world for the Diné.

Years later, Changing Woman became lonely for human companionship, so she created people from her body, and the first four clans came into existence. These were called the Nihokáá Dine'é or Earth Surface People to distinguish them from the Diyin Dine'é, the Holy People. Thus all clans originated from these original four, and today when one introduces oneself by one's clan, it is an excellent acknowledgement of fundamental link to Changing Woman and to the Holy People.

Shortly after Changing Woman created the Nihookáá' Dine'é, the Diyin Dine'é decided the time had come for the Nihookáá' Dine'é to inherit the earth. They left various drawings, primarily at Dinétah, so that the medicine people would have a source of knowledge and could retain essential songs, prayers, symbols, and stories. Changing Woman now resides in the center of the earth. The changing of the seasons and the stages of our lives remind us that, indeed, she is our mother and the stages of our lives remind us that, indeed, she is our mother and that all comes to life as she breathes.

The Diyin Dine'é, the Holy People, traveled by means of a rainbow to take their places in the sacred mountains; thus the word for mountain, *dził*, is very much like, *dziil*, which means "to be strong" or "to possess strength." These mountains serve as literal reminders that, like our ancestors, we can persevere in difficult situations. Since the mountains are images of eternity, attaining old age is a worthy goal. The Holy People set intricate and complex pattern of Diné life when they decreed that we should live here, but they too care to ensure that these concepts could be integrated into modern life.

Today, when a rainbow appears after a cleansing rain, we know that the Holy People have returned. When they return, they marvel at the growth of new spring plants, they revel in the laughter of children splashing in the fresh rain puddles, and like us, they inhale deeply of the sweet, clean air. We understand that a rainbow sparkles with particles of dew, pollen, and the blessings of Diyin Dine'é. We exist within the radiant curve of their care and wisdom.



A Young Navajo Woman - Kinaalda, stirring the corn mush to make the cake for a young woman's ceremony, Big Mountain, AZ, December 2015. Photo by Malcolm Benally.



A Young Navajo Woman - The cake rolled up in a woven bowl of corn husks is placed into an earth oven to bake through the night until morning, Big Mountain, AZ, December 2015. Photo by Malcolm Benally.



Mya and her family help her prepare the cake up with corn husks to bake in an earth oven covered with fire through the night, Big Mountain, AZ, Dec. 2015. Photo by Malcolm Benally.



*"Dú na'alkaah álnééh nidaalnishígí łá' nihíł hodoolnih nínízingo éí nihich'i' hodúlnih. T'áá níkéyahdi áłáh ná'ádleełgi łłáh adooleet, dinłigo nihich'i' hodúlnih."*

**1- (877) - 545 - 6775**

*If you would like a presentation about the study, please call us to set up a meeting at your chapter, school, or place of gathering.*

**Navajo Birth Cohort Study**

**[www.healthyvoices.org](http://www.healthyvoices.org)**

**Check out our blog at [nbc.healthyvoices.org](http://nbc.healthyvoices.org)**