

An Intertribal Research and Resource Center Newsletter

July, 2019

Mission:

The IRRC provides services and builds capacity for enhancing food, energy, and water sustainability for tribal communities in the Northern Plains.

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Tribal Landscapes

Research and Resources for Food, Energy, and Water Sustainability



Pre-engineering student Dione Otten prepares an insulation sample.

From Field to Lab to Home: Researching Sustainable Solutions in Home Insulation

Written By: Anna Bahnson

As a new homeowner, I know the value of quality insulation. During our home inspection, we learned the insulation in our attic was only 2 inches thick- way below industry recommended standards. I notice my poor insulation when I walk into the house on a warm day and I see it reflected on my pricey heating and cooling bills. So, when I learned our research scientist Dr. Gurjot Dhaliwal studies insulation from biomaterials, I had to dig deeper. The graphic on the following page gives a brief overview of his work.

Environmental Science Summer Research Student Spotlights



Owen C. Smith Sr.

Where are you from?

Navajo Nation (Dine') Grandfalls, AZ

What are you researching?

Microbial fuel cells and measuring how much energy I am able to obtain from a few different resources. I grew up with no electricity so I thought-oh what a difference this could make back home in Arizona as far as bringing electricity to not only homes in my community, but also across Indian country.



K'Lona Lofton

Where are you from?

Cheyenne River Sioux Tribe Eagle Butte, SD

What are you researching?

I am studying vermicomposting, worm farms, and how different methods impact the nutrients in soil. Nature is a huge part of who we are as indigenous people. I believe we should use everything Mother Earth has to offer us, and to me, that includes these slimy, squiggly little creatures.

From Field



Most spray foam insulations are derived from petroleum based products.

Dr. Dhaliwal constructs and researches insulation made from soy based products.



To Lab

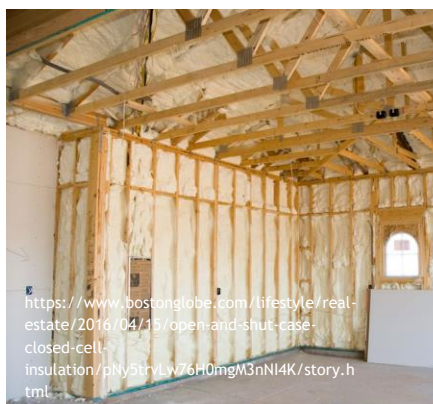


Dr. Dhaliwal and his summer research interns test the chemical and physical properties of each piece of foam.

They test the foam for: insulation value, flame retardancy, moisture absorbance, and mechanical strength.



To Home



Home insulations constructed from agriculture based products have the added benefits of replacing petroleum based products as they are less toxic and can provide value to an agricultural producers operations.

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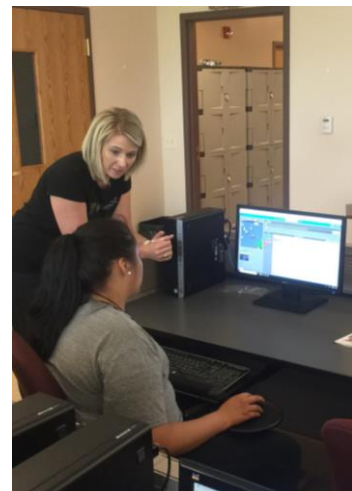
Summer 2019 Outreach Highlights



Gateway to Science and IRRC STEM Adventure camp campers design solar ovens and plant sunflowers.



Theodore Jameson Elementary School Students learn about sustainable agriculture in a field trip to Browns Ranch and sample spring rhubarb in the campus garden.



North Dakota Indian Youth Leadership Academy participants learn about computer science through an hour of code session led by Taya Spelhaug of Microsoft.

Upcoming Climate
Workshop

What:

Basics of Using Climate
Data to Make Land
Management Decisions

Where:

Nueta Hidatsa Sahnish
College, New Town ND

When:

August 7th-8th 2019

Questions:

Contact jguinn@uttc.edu

What do you hope to do with your degree?

“I would like to eventually move back home to Arizona to obtain my Masters in Environmental Engineering at U of A or I have thought about UND in Grand Forks to obtain a masters and eventually doctorate in Environmental Engineering” Owen C. Smith Sr.

“My early goals I have with this career is to become an environmental consultant on my reservation to help my community beome eco-frieldy! I want to educate the youth about using everything Mother earth has to offer and teach them about the importance of sustainability at a young age.” K’Lona Lofton

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