

# SURF Outreach and Community Relations

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**Snowmass CSS**  
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**Sanford**

Underground Research Facility

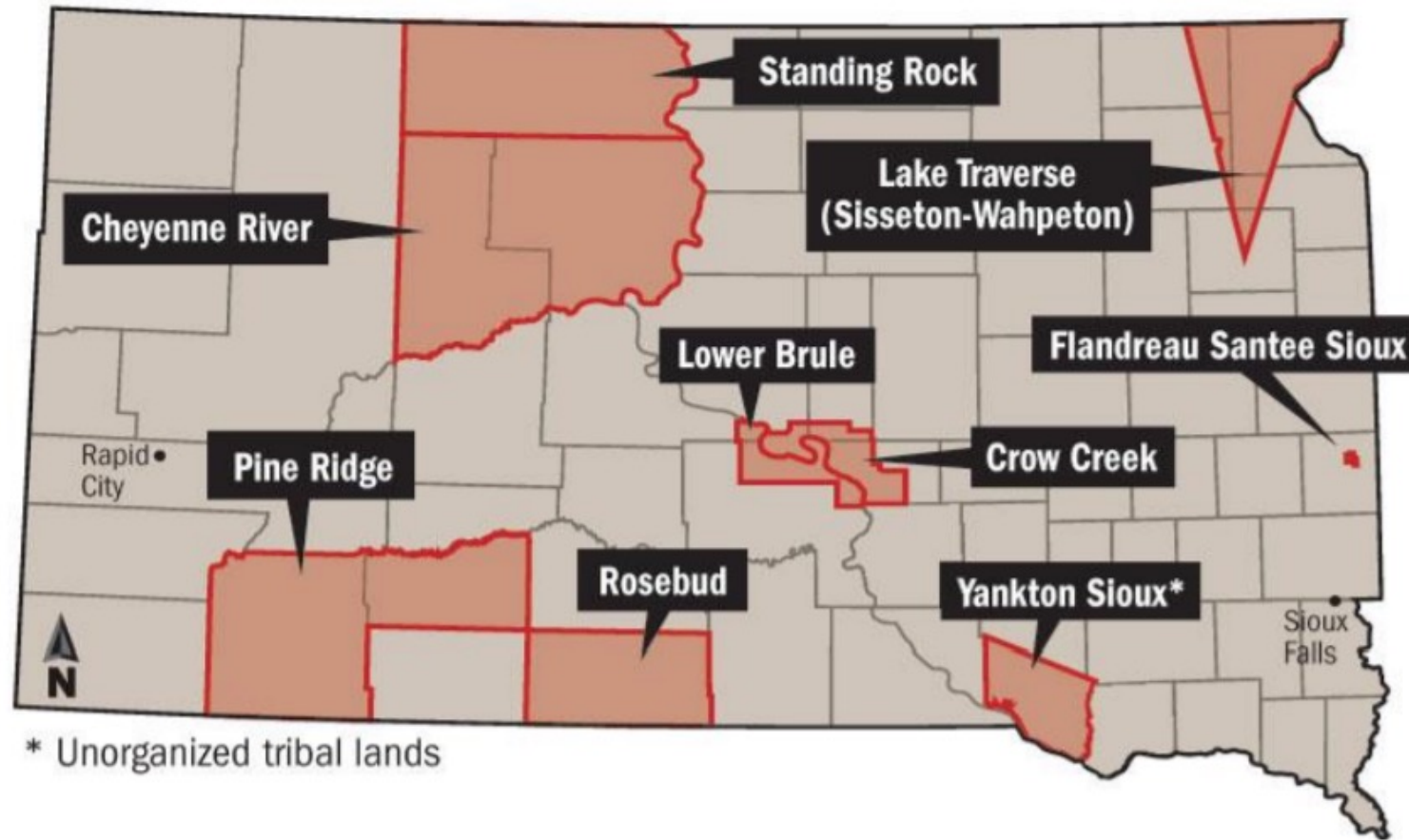
South Dakota Science and Technology Authority



# SURF Outreach and Culture Scope

- **Inclusion, Diversity, Equity and Access (IDEA) Office**
  - Supporting a welcoming work environment in collaboration with HR office.
  - Coordinating communication and relationship with Tribal Nations.
- **K-12 Education and Outreach**
  - Providing STEM education experiences for K-12 students and teachers.
  - Supporting the transition to post-secondary.
- **Public Outreach / Communications**
  - Public outreach, media relations and marketing.
  - Local community outreach (includes significant senior leadership involvement).
- **Sanford Lab Homestake Visitor Center (SLHVC)**
  - SURF's face in the local community.
  - Connecting to broader community with opportunities for inter-generational learning.
- **SURF Artist in Residence Program**
  - Summer residency program. Sharing the wonder of SURF's science and ops through art.

# Tribal Nations within South Dakota



# SURF Working Alongside Region's Tribes

- **The Black Hills are sacred to the Tribes of the region** (“Paha Sapa” or “hills that are black”).
- U.S. Federal requirements
  - National Historic Preservation Act
  - Impacts of U.S. Gov’t investments must be assessed. Tribes consulted.
- Beyond legal requirements, SURF has placed high priority on Tribal relations and building strong partnerships from the start.
- SURF’s efforts include:
  - Commitment to treat sacred lands with respect.
  - Regular interactions with Tribes—with staff dedicated to this purpose.
  - Public outreach efforts focusing on Native culture and history.
  - K-12 STEM education outreach efforts with Tribal schools in region.

# SURF Commitments to Tribes

- Impacts on the land are minimized. No new areas will be disturbed.
- Rock extracted (800,000 tons) for LBNF Project will remain in the Black Hills.
- Any artifacts found will be properly managed and preserved.
- SURF Wastewater Treatment Plant instrumental in improving water quality of local streams.
- SURF adheres to strict recycling procedures.



# Isna Wica Owayawa (Loneman School)



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- Several teachers from Loneman participated in 2021 professional development.
- Three teachers were accepted into Cohort 5 SD Math SD Sci program.
  - Previously, only one Native teacher applied.
- SURF E&O staff have visited Loneman for E&O programming.
  - Scheduling was a challenge. Patience was key.
- Holiday backpacks distributed at Loneman.
  - School supplies, snacks, personal hygiene, and one STEM item.
- We aim to replicate this work at other tribal schools in the region.

# Cultural Advisory Committee



- Established in 2010, meets at least three times annually.
- CAC receives laboratory updates and advises on cultural efforts.
- SURF staff and community members maintain a cultural strategic plan.



# Sacred Circle Garden (Cangleska Wakan)





- The SURF Foundation is raising funds to create an ethnobotanical garden on Yates Complex at SURF.
- Focus is a Native American medicine wheel with native plants.
- Vision is to increase understanding and respect for indigenous cultures of the Black Hills.
- It will be a place that protects our environment, our rich history, and the values that connect us.
- An array of activities planned and integration with Visitor Center tours.

[www.sanfordlab.org/garden](http://www.sanfordlab.org/garden)





# K-12 Education and Outreach Scope

Presentations & Field Trips	Curriculum Units and Resources	Career Exploration and Development	Supporting Teachers
<ul style="list-style-type: none"> <li>• K12 presentations</li> <li>• Face to face</li> <li>• Virtual options</li> <li>• Field trips in spring and fall</li> </ul>	<ul style="list-style-type: none"> <li>• 5-15 hours of fully designed and resourced science curriculum</li> <li>• 17 unique curriculum units available for checkout</li> </ul>	<ul style="list-style-type: none"> <li>• Davis-Bahcall Scholars Program</li> <li>• Summer internship opportunities</li> <li>• Pre-service educator program support</li> </ul>	<ul style="list-style-type: none"> <li>• Professional development offerings</li> <li>• Curriculum resources</li> <li>• Science content support</li> <li>• Just-in-time support</li> </ul>
			



# Education and Outreach: Updates and Plans

**WHY: Every student deserves high-quality, engaging, relevant, equitable and rigorous science learning opportunities.**

Direct work with students far exceeded goals for 2021-22.

Summer teacher professional development in process.

Updating and expanding content: New Underground Ventilation Challenge and Safety Presentation.

Post-Secondary

Davis-Bahcall Scholars Program

Summer Internships (Incl. slots for underrepresented groups)

Work with University Teacher Education Programs Across the State

Black Hills State University

Northern State University

Dakota State University

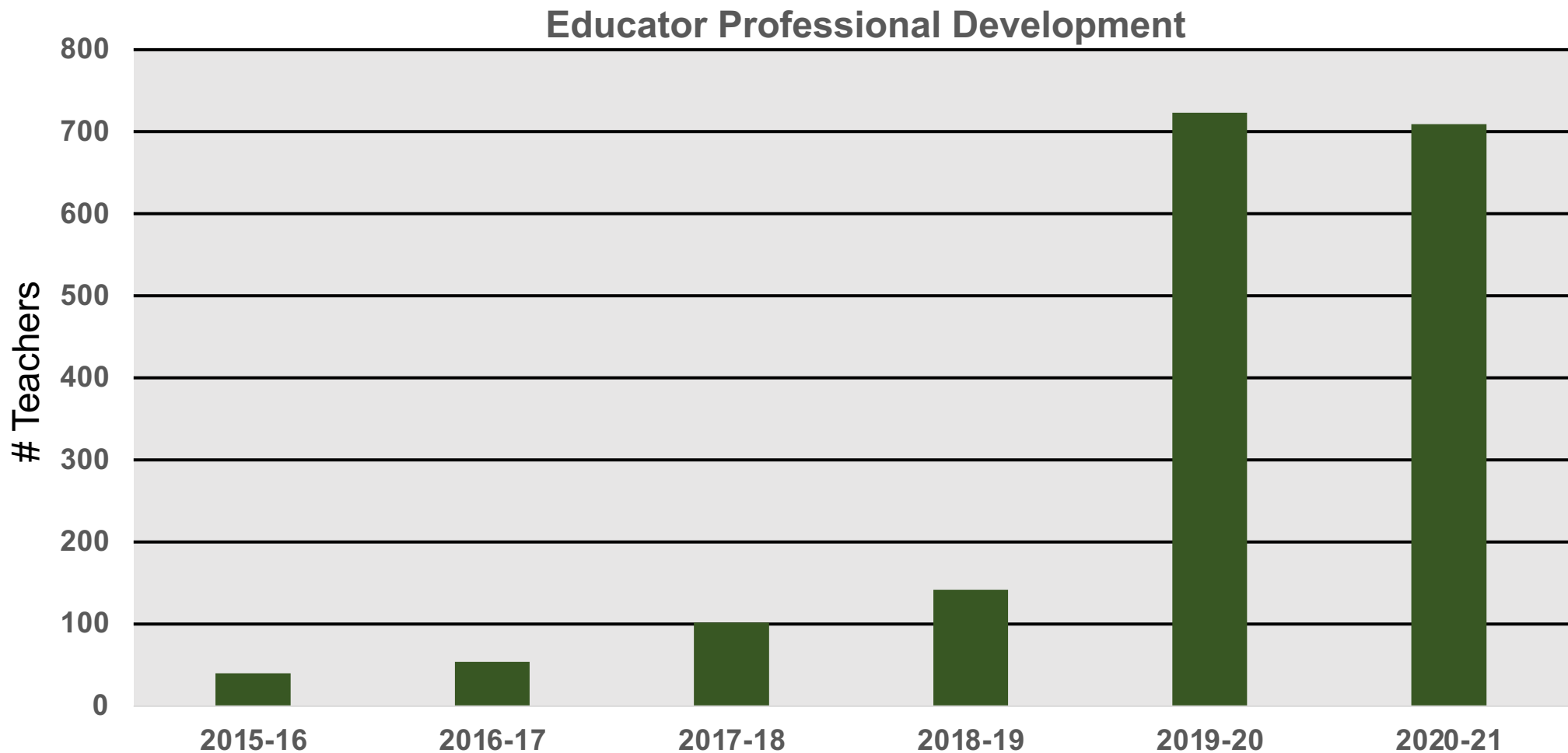
University of South Dakota

Augustana University

South Dakota State University



# Education and Outreach: By the Numbers



School Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Total Events	1	1	3	4	13	9
Total Teachers	40	54	102	142	723	709



# Education and Outreach: By the Numbers

School Year	2018-2019 (pre-COVID)	2019 – 2020 (COVID begins)	2020-2021 (during COVID)	2021-2022*
Field Trips	1,117	254	58	419
Classroom Presentations	6,704	3,704	2,005	14,037
Curriculum Units	3,598	3,236	3,384	3,683
Other	1,055	918	298	1,468
Total Student Contacts	12,474	8,112	5,745	<b>19,607</b>

\* As of May 31, 2022

# Local Community Coordination

- SDSTA has built a strong relationship with local community over 15 years.
- Monthly coordination meetings held with SDSTA, Lead City officials, local Fermilab management, and major LBNF subcontractors.
- As a non-profit, investment in community activities has been challenging.
  - Recently, leaning in more in this area. Generating a positive response.
- Generally, public meetings have been held as needed (rock dust issues).



# Artist in Residence Program (AiR)



- Funded by the SDSTA. Inspired by the science at SURF.
- Program is in the third year of existence.
- Each artist contributes one piece to the SURF permanent collection.
- Year one AiR, **Gina Gibson**, held recent virtual show at Fermilab. Show planned for U. of Michigan.
- Year three AiR features artist **Gary Sczerbaniewicz**.



# Lessons Learned Along the Way

- Cultural outreach
  - Persistence is key. Interactions can't be seen as transactional. Work at the “speed of trust.”
  - When mistakes are made, be humble, willing to learn, and willing to change.
- Community engagement
  - Our community has little patience for bureaucracy and slowly delivered solutions.
  - Transparency is essential when communicating with the public to build trust.
  - Bring the right people to the conversation to address questions immediately.
  - Participation in community activities and initiatives is well received.
  - Demonstrate a commitment to the health and safety of our neighbors.





# Thank You

# Education and Outreach: Professional Development

## SURF E&O Offerings

- Powerful and Productive Mathematical Discourse (hybrid)
- Supporting and Sustain 3D Science Instruction (hybrid)
- The Power of Place-Based Learning (F2F)
- Implementing 3D Instruction (Virtual)
- Enhancing Mathematics with Application (F2F)

## In Partnership with SD EPSCoR

- Fundamentals of 3D Instruction & Biofilms (Virtual)
- Making Thinking Visible (F2F and Virtual)
- Supporting Implementation of Biofilm Curriculum Modules (Virtual)

## In Partnership with Black Hills State University

- Computational Thinking in STEM (F2F with 4<sup>th</sup> Grade Teachers)
- Computational Thinking in STEM (F2F with 5<sup>th</sup> Grade Teachers)

## In Partnership with the SD Department of Education

- SDMath/SDSci Teacher Leadership Program

