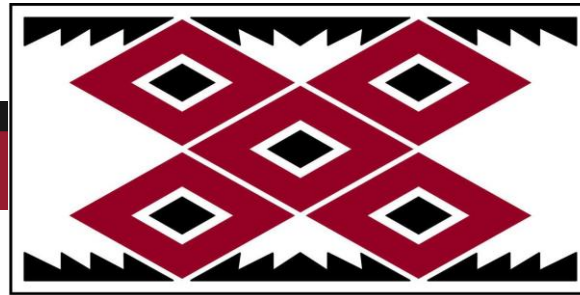


TOWN HALL: ADVANCING STEM WORKFORCE PREPARATION AND RESEARCH CAPACITY AT TRIBAL COLLEGES AND UNIVERSITIES



**UNITED TRIBES
TECHNICAL COLLEGE**

MANDY GUINN
ENVIRONMENTAL SCIENCE DEPARTMENT
UNITED TRIBES TECHNICAL COLLEGE

5.13.2021

UNITED TRIBES TECHNICAL COLLEGE (UTTC)

UTTC'S STEM DEGREES:

A.A.S. IN ENVIRONMENTAL SCIENCE
(2004)

B.S. IN ENVIRONMENTAL SCIENCE
AND RESEARCH (2016)

SUSTAINABLE AG AND FOOD
SYSTEMS (2019)

A.S. IN PRE-ENGINEERING (2008)

ENGINEERING (2020)



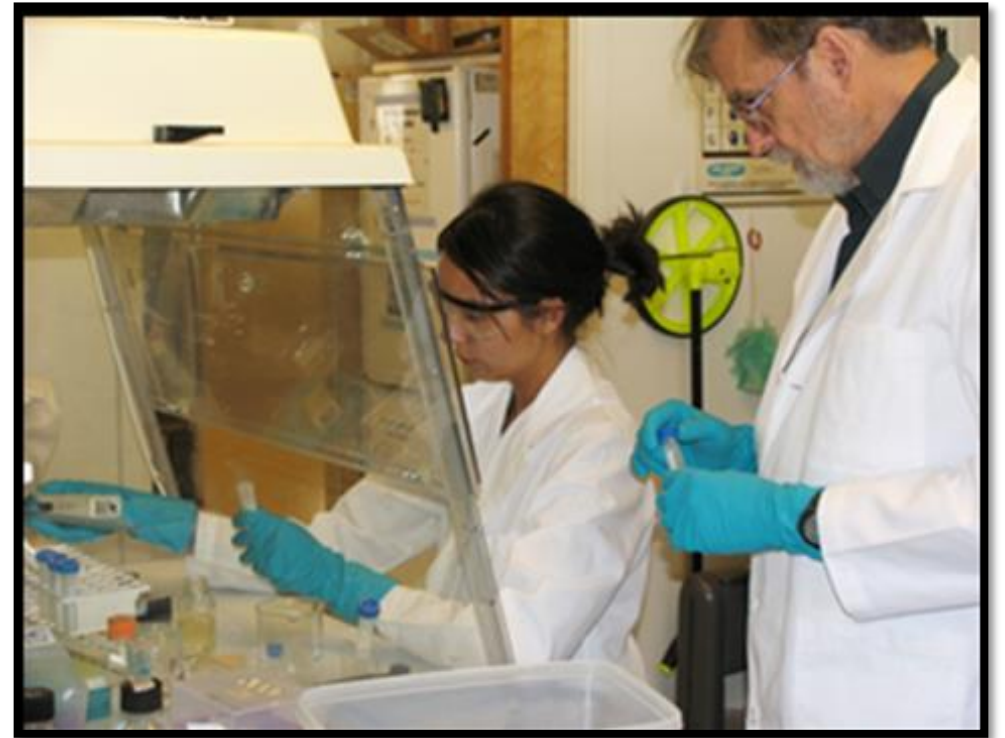
UNITED TRIBES
TECHNICAL COLLEGE

STUDENTS AS THE CREATORS OF NEW KNOWLEDGE

“TRAIN NEW SCIENTISTS BY DOING
SCIENCE”

REQUIRE ALL UNDERGRADUATE
STUDENTS TO DESIGN AND
EXECUTE A RESEARCH PROJECT
INCLUDING:

- HYPOTHESIS DEVELOPMENT
- PROJECT DESIGN
- DATA COLLECTION
- ANALYSIS
- DISSEMINATION

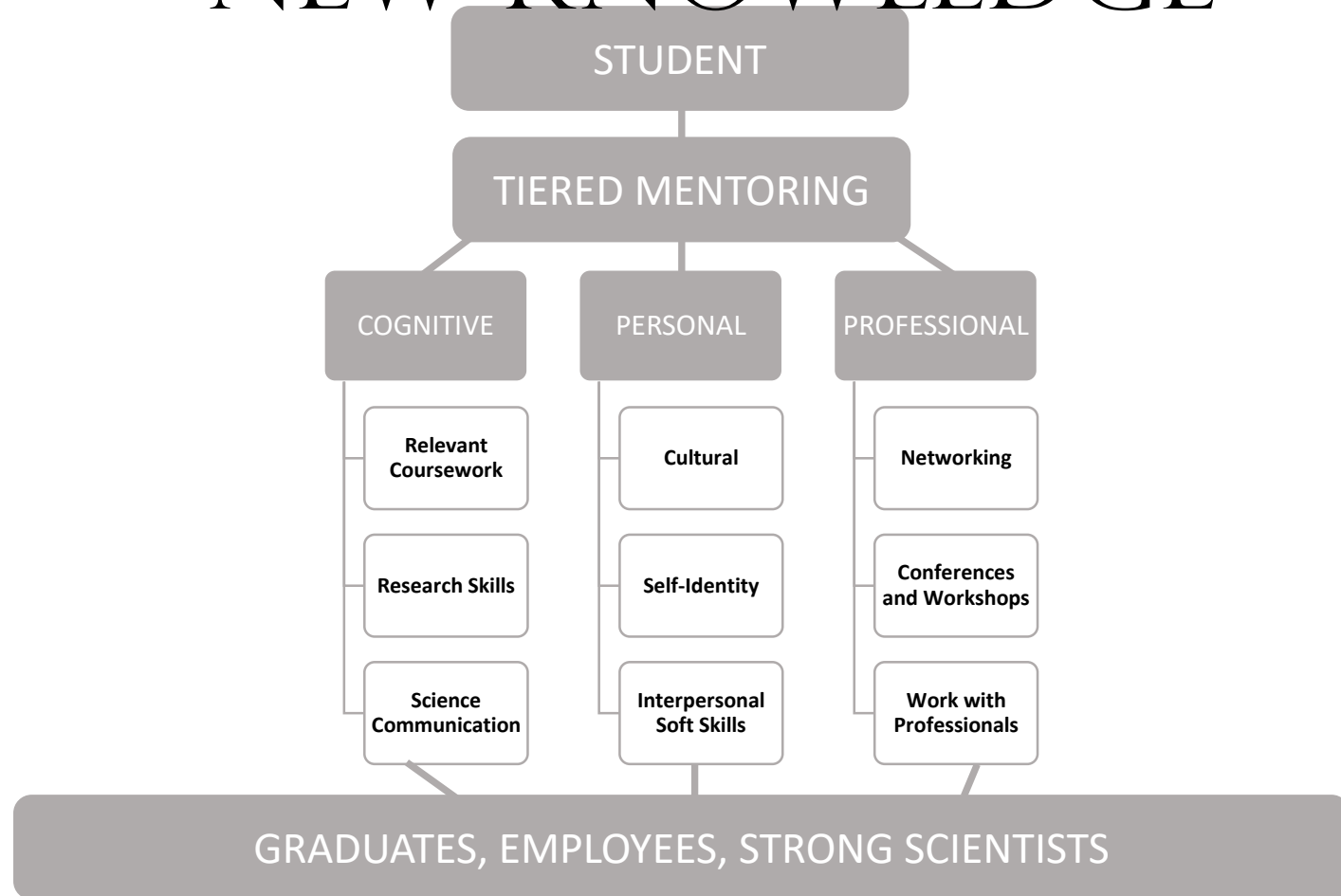


COMMUNITY RELEVANCE



UNITED TRIBES
TECHNICAL COLLEGE

STUDENTS AS THE CREATORS OF NEW KNOWLEDGE



RESEARCH CULTURE

SAMPLE STUDENT TOPICS

- ALDH1A2 GENE EXPRESSION IN THE ADULT FEMALE MOUSE BRAIN WITH CONSTITUTIVELY ACTIVE α_{1A} -ADRENERGIC RECEPTORS - BONITA CLAYMORE
- CHARACTERIZING ELK HABITAT AND RESOURCE USES ON STANDING ROCK RESERVATION, NORTH DAKOTA- TRENTON CHALMERS

• AN ANALYSIS OF WILD VERGES CULTIVATED ECHINACEA

FINLEY



UNITED TRIBES
TECHNICAL COLLEGE

RESEARCH CULTURE

LONG TERM RESEARCH PROJECTS

URBAN COYOTE RESEARCH

BAT CONSERVATION

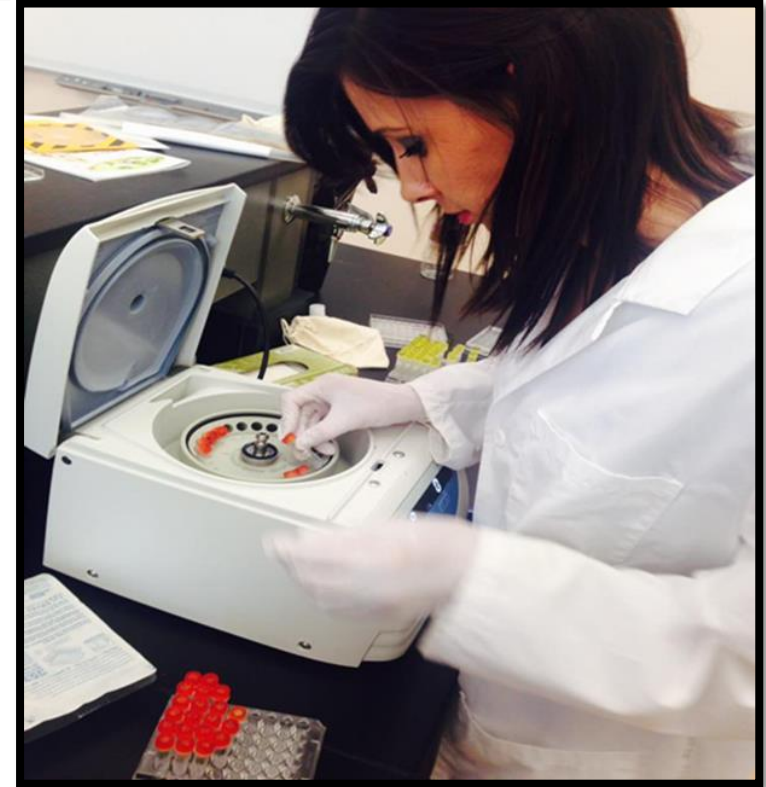


UNITED TRIBES
TECHNICAL COLLEGE

STUDENT OUTCOMES AND SUCCESSSES

STUDENTS SEE RELEVANCE
IN THEIR FULL ACADEMIC
PROGRAM

- ENGLISH = WRITING
REPORTS/PAPERS
- MATH/STATS = ANALYZING
DATA AND INTERPRETING
DATA
- SPEECH = PRESENTING
THEIR FINDINGS



ANALYZING DATA AND
DATA VISUALIZATION



UNITED TRIBES
TECHNICAL COLLEGE

STUDENT OUTCOMES AND SUCCESS

STUDENT GAINS

- STEM IDENTITY
- STEM EFFICACY
- INITIATIVE FOR LEARNING
- ADVANCED COMMUNICATION SKILLS
- CRITICAL THINKING
- PROFESSIONALISM
- RESILIENCE



UNITED TRIBES
TECHNICAL COLLEGE

INSTITUTIONAL OUTCOMES AND SUCCESS

INSTITUTIONAL GAINS

- RECRUITMENT
- RETENTION
- ALUMNI CONNECTION
- SECURE FUNDING
- INCREASED RESEARCH CAPACITY



UNITED TRIBES
TECHNICAL COLLEGE

COMMUNITY OUTCOMES AND SUCCESSSES

COMMUNITY GAINS

- BASELINE DATA AND APPLIED RESEARCH DATA
- MANAGEMENT AND SUSTAINABILITY PLANS
- ECONOMIC DEVELOPMENT
- K-12 STEM PATHWAY



UNITED TRIBES
TECHNICAL COLLEGE

GROWING PAINS AND PROGRESS

GROWING PAINS

- INSTITUTIONAL RESEARCH INFRASTRUCTURE
- TEACHING LOADS
- ISOLATION

PROGRESS

- POLICIES
- GRANTS OFFICE
- STEM COMMUNITY OUTREACH COORDINATOR
- IRRC
- IRB AND IACUC

