A Blueprint for Successful Partnerships:
Sustaining a Undergraduate Research Program at a Tribal College

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Collaboration and Partnerships

“Sometimes I think the collaborative process would work better without you.”

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Collaboration and Partnerships

Access to expertise or a particular skill set

Access to equipment or resources

Creates an interdisciplinary approach

Improved access to funds

Enhance personal research efforts

Enhance mentoring potential
Collaboration and Partnerships

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**Student/Faculty Research**

Investigator works on a scientific problem – largely on his or her own.

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**Research Collaboration**

- Group works on a scientific problem, each bringing some expertise to the problem.
  
  - Each member works on a separate part, which are synthesized at the end.

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**Integrated Research Collaboration Model**

- Student is project lead.
  
  - Each member of team bringing specific expertise.
  
    - Each member is invested in project due to mutual interests and for mutual benefits.

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**Level of Interaction and Integration**

- **Low**
  
  - Student/Faculty Research

- **High**
  
  - Integrated Research Collaboration Model
Integrated Research Collaboration Model

STUDENT

TIERED MENTORING

COGNITIVE
- Relevant Coursework
- Research Skills
- Science Communication

PERSONAL
- Cultural
- Self-Identity
- Interpersonal Soft Skills

PROFESSIONAL
- Networking
- Conferences and Workshops
- Work with Professionals

GOAL: GRADUATES, EMPLOYEES, STRONG SCIENTISTS
UTTC Research Opportunities

• “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

• Most have a cultural or community relevance, impacting science community
Semester-Long Research Projects

• *Aldh1a2 Gene Expression in the Adult Female Mouse Brain with Constitutively Active α_{1A}-Adrenergic Receptors* - Bonita Claymore

• *An Ethogram of Big Brown Bats (Eptesicus fuscus): General Behaviors and Social Interactions in an Artificial Roost* - Jonathan Holmes

• *An Analysis of Wild Verses Cultivated Echinacea (Echinacea purpurea) Antimicrobial Activity* - Marlee Finley
Long-Term Research Projects

Urban Coyote Research

Bat Conservation Research
Integrated Research Collaboration Web

- Bats Research
Outcomes and Successes

- Students care about their full education
  - English = writing reports/papers
  - Math/Stats = analyzing data and finding out what it means
  - Speech = presenting their findings
  - Info. Tech. = analyzing data, preparing presentations
Student Outcomes and Successes

- **Student Identify**—making students realize their potential & understand that graduate students/faculty members are people

- **Student Efficacy**—proficiency = confidence
Institutional Outcomes and Successes

- **Authentic Partnerships**—real collaborations with mutual benefits
- **Faculty Research Capacity**—scientists sustain a research program
- **Varied Funding**—curriculum enhancement & research-based funding
Future Goals

• Continue to Strengthen Research Team

• Enhance Community and Tribal Ties

• Secure Funding

• See Students Become Professionals
Any Questions?

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