# iSTEM Project: Engaging Rurally Located Native American & Hispanic Youth in STEM

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Project website: http://istemtucson.weebly.com

# iSTEM Project: Engaging Rurally Located Native American & Hispanic Youth in STEM

- **Goals of iSTEM Project:**
  - Test a hybrid model (mentoring & informal science experiences) for engaging Native American & Hispanic 3rd - 8th grade students in STEM
  - Examine the differential effectiveness of three mentor types (Professional STEM; University students; Tribal community members)
  - Use a culturally relevant framework "Funds of Knowledge" for STEM activities

- **iSTEM Location and Participants**
  - Three rurally located schools in southern Arizona
  - Mentees: 48 Native American; 11 Hispanic; 2 Other
  - Mentees: 47 Female; 14 Male

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- **Practical Strategies for Engagement**
  - Use schools as program sites
  - Have snacks available
  - Provide transportation for fieldtrips
  - Provide transportation for University student mentors
  - Consistent and frequent contact with both mentors and mentees
  - Conduct activities in an area that brings recognition and excitement about the program and STEM activities from others
  - Stay flexible

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- **Cultural Strategies for Engagement**
  - Tribal commitment and oversight
  - Partnership team
  - Culturally relevant framework (Funds of Knowledge)
  - Address STEM topics that are close to home
  - Add historical and empowering cultural facts to STEM activities
  - Provide opportunities for mentees to teach (the mentor, family members, each other)

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- **Program Strategies for Engagement**
  - Provide mentoring and expand traditional mentoring to tribal community members
  - Develop and package "flash STEM activities" for lunchtime mentor/mentee engagement
  - Provide support on flash STEM activities during the lunch periods
  - Combine lunchtime flash STEM activities with bi-monthly field trips
  - Allow for other activities particularly at the beginning of the mentor/mentee match that promote a positive and strong bond between them

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- **Tools and Technologies Used**
  - Mentor/mentee matching strategies
  - Mentor training
  - Multiple communication strategies (cards; email)
  - Flash STEM activities
  - Bring technology to the schools (GPS and Star Party fieldtrips)
  - Provide computers and internet access at schools separate from schools
  - Use participant's own technology (cell phones)

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- **Lessons learned**
  - Working within a collaboration that includes tribes, schools, community-based agencies, University and community members is complex and takes time to develop and succeed
  - Mentor engagement was not as successful as planned – consider having several part-time staff or student interns working with the youth
  - Each mentor type (Professional STEM; University students; Tribal community members) brings strengths and challenges to mentoring and they need different types of program support

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- **Lessons learned**
  - Mentoring programs can be perceived as being for at-risk youth and thus strategies must convey the program as unique and exceptional
  - Grade/age differences ($3^{rd}$ - $8^{th}$ grade) is to great. Narrow to 3 grade levels
  - Pre-packaged flash STEM activities with on-site assistance is important
  - Having STEM experts leading hands-on activities during field trips animates and inspires students (versus non-STEM project staff)

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"It's a fun program…they help you out with school…keep your future good"