



office for

DIVERSITY IN SCIENCE TRAINING



An American Indian Perspective: Haskell/KU Collaboration, SACNAS and CEOSE

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What is “an American Indian Perspective”?

1. There are 560+ federally recognized tribes. Dozens more state recognized.
2. There are more than 175 American Indian (AI) languages in the US.
3. Despite homogenization, there are major differences among tribes: in education, wealth, maintaining “the old ways,” etc.
4. Thus, this is “an” AI perspective, not “the” AI perspective.



Marigold Linton: Some Background

Born, Morongo Reservation; Enrolled member of the Morongo Band of Mission Indians

BA: UCR; PhD: UCLA 1964 in psychology

Professor: San Diego State; U. of Utah

Director, American Indian Programs, ASU

Director, American Indian Outreach KU

Past President of SACNAS

Former Member CEOSE: Committee on Equal Opportunities in Science and Engineering

Member: NAS Committee on Policy/Global Affairs



Systemic Collaborations to Promote Diversity: KU / Haskell Indian Nations University

- These activities provided the basis for my winning a Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) in 2009, awarded in 2011.





Lawrence, Kansas: Kansas University, Haskell Indian Nations University

- KU
 - Founded 1864, traditions: Rock Chalk, Jayhawk
- Haskell
 - Founded 1884, boarding school, BIA, ecumenical
- Linkages
 - Haskell: no training grants before my arrival in 1998
 - Minimal faculty interactions between universities
 - Resentment by Haskell folks of KU's efforts
 - Etc.



KU and Haskell: current data

- KU: 30,000 students, 2,500 faculty, 4 campuses, Research I & AAU university
- Haskell: 1,000 students, 42 faculty; a tribal college funded by Bureau of Indian Affairs



Some Initial Issues Addressed

- Haskell lacked a sponsored projects office (cf. embezzlement case).
- Haskell could not manage large grants if it did receive them.
- KU could not apply for federal funds that would have benefited Haskell.



Environment in Which These Accomplishments were Achieved

- KU: Chancellors Hemenway & Bernadette Gray-Little, 1st woman/1st African American
- Haskell: Two female presidents: Karen Swisher and Linda Warner. A remarkable Vice-President, Venida Chenault (all AI)
- PI/Col: Estela Gavosto, Hispanic
- Faculty: Dozens of STEM women faculty, a number of them distinguished professors



Making it work: In the trenches

- Someone needed for this collaboration:
 - Who had a faculty background
 - Who understood both cultures
 - Who worked well with people
 - **For whom this was a significant part of their workload**
 - Who had considerable patience
 - **Who would be around for the long haul**



What Kinds of NIH Funding Has Been Obtained through this Collaboration?

- Bridges to the Baccalaureate (KU lead)
- IMSD: Initiative for Maximizing Student Diversity (KU)
- **RISE: Research Initiative for Scientific Enhancement (Haskell)**
- IRACDA: Institutional Research and Career Development Award (KU lead)
- PREP: Postgraduate Research and Education Program (KU)



Some Successes

- In six years KU more than doubled **the number of STEM American Indian students** matriculating (a very big deal!)
- Students in the Haskell/KU Bridges Program are retained at 79% in comparison to non-Bridges rate of 34%
- Potential mentors increased from 30 potential research mentors in 1998 to more than 100 representing all STEM disciplines now .



Successes: continued

- Skills development laboratory significantly outperforms Mathematics and English development classes.
- **Haskell now has an ACT requirement.**
- Attitudes of Haskell faculty have changed.
- Haskell now includes “research” as part of their mission.
- **AND MUCH, MUCH MORE**



A Second Topic: The SACNAS Leadership Institute (SLI)

- SACNAS: The Society for the Advancement of Hispanics/Chicanos and Native Americans in Science.
- SLI: Week-long training for SACNAS folks (STEM) in three tracks: post-doc, early & mid-career; 10 in each track or 30 each year now for 5 yrs.



Why SLI?

- Our 40 year old organization has helped increase the number of undergraduates receiving BAs.
- The number of MAs and PhDs has increased significantly.
- Assistant and Associate Professors exist. But there few make it to “the top.”
- Perhaps they don’t “know the moves.”



SLI Take-Home Attributes

- Completely interdisciplinary (STEM)
- Equal numbers of males and females
- Trainers: Excellent minority individuals
- Mentors: Senior SACNAS folks
- Focus: Leadership Development Plan
- Activities: Communication, bonding
- Leadership pins: a color for each cohort



SLI Outcomes

- There are now 150 SLI graduates.
- Hundreds apply for the SLI each year.
- Numerous individuals are moving into policy areas – e.g., AAAS S&T Policy Fellows
- List serves permit sharing and help from trainers, mentors and other SLI graduates
- Funders love SLI
- We hope to expand SLI to meet more needs



Topic Three: NSF CEOSE

- The Committee on Equal Opportunities in Science and Engineering
- Congressionally mandated: A committee that provides advice to the Foundation concerning full participation of women, minorities, and persons with disabilities in scientific, engineering and professional fields



Major CEOSE Activity

- “Every two years, the Committee shall prepare and transmit to the Director a report on its activities during the previous two years and proposed activities for the next two years. The Director shall transmit to Congress the report, unaltered, together with such comments as the Director deems appropriate.”



CEOSE Mini-symposia

- **Topics have included:**
- **2007: Institutions Serving Persons with Disabilities**
- **2008: Native Americans**
- **2009: Women of Color in STEM**
- **2012: Science of Broadening Participation**



Mini-symposium on Native Americans: Recommendations

Serve Native Americans by Expanding and Fine-Tuning Existing NSF programs

- Provide significant resources over sustained time frame (i.e., **longer term grants**) for Tribal Colleges and Universities and institutions serving American Indian populations
- Build on the success of the **Rural Systemic Initiative** and duplicate it



Go Outside Existing NSF Programs to Serve American Indians

- **Work with/through** professional societies; support formation and sustenance of **AISES** and **SACNAS** chapters at universities, tribal colleges, etc.
- Replicate successful projects, e.g., Sloan program at U of Arizona or Howard Hughes Medical Institute's (HHMI) Science Education Alliance (SEA) with tribal colleges.
- Develop mechanism for enabling scientists to assist (perhaps living in locales of) remote tribal colleges.



Collect Data/Perform Evaluation: Better Understand AI Issues

- **Develop evaluation capacities** of more AIs who can evaluate NSF projects
- Learn impact of lack of scholarships & funding on dropouts from STEM programs.
- Identify and disseminate elements that are effective in producing successful AI education programs.



Improve Grant Writing and NSF Review Process

- Include non-academics (teachers, parents, program managers, elders) in the development of new NSF programs and on program panels of interest to AIs
- **Assist development of proposals** for AI institutions lacking experience/ personnel to respond to NSF announcements
- Increase the number of AI reviewers



Conclusions:

- In this brief time I cannot convey the significance of the suggestions made – importantly though, NONE of them were ever implemented. My service on CEOSE mainly involved, several times a year, asking the NSF Director, “Have any of the suggestions of the mini-symposium been implemented?” “No. But soon.”



Thank you!

- Questions?
- Comments?
- Insights!

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