Activities and Findings

Research and Education Activities

Presentations:

- May 21, 2002: Dave Staudt, Valerie Rice, Carrie Billy (TCU coordinator), Alex Ramirez (HSI coordinator), and Laura-Lee Davidson (HBCU coordinator) gave community and project-wide status reports to the AN-MSI project participants at the Project Action Committee meeting at Langston University (HBCU) in Oklahoma City, OK.
- May 15, 2002: Valerie Rice, Ramon Harris (HBCU coordinator), and Carrie Billy (TCU coordinator) provided an AN-MSI exhibit and information at the 8th Annual Coalition for National Science Funding (CNSF) Exhibition and Reception.
- May 2, 2002: Dave Staudt, Valerie Rice, and Mark Luker gave a briefing to the Brookings Institute.
- March 25, 2002: Major E. Madison, Jr. (HBCU rep) and Dave Staudt gave an AN-MSI briefing to John Tustin, staffer for the Honorable Eddie Bernice Johnson (Congressional Black Caucus Committee Chair).
- February 25, 2002: Dave Staudt, Valerie Rice, Carrie Billy (TCU coordinator), Alex Ramirez (HSI coordinator), and Laura-Lee Davidson (HBCU coordinator) gave community and project-wide status reports to the AN-MSI project participants at the Project Action Committee meeting at Sacred Heart University (HSI) in San Juan, PR.
- February 14, 2002: Mark Luker and Dave Staudt gave an AN-MSI briefing at NSF.
- January 28, 2002: Joyce Williams-Green (HBCU rep), Henry Ingle (HSI rep), and Lori Lambert (TCU rep) gave a presentation entitled, 'Concurrent Session: Institutions in Transformation - New Demography, New Technology and New Faculty Roles'. This presentation offered case studies on how minority-serving institutions have integrated technology into their instruction to be responsive to culturally diverse learners. This presentation went extremely well and the speakers have been asked to repeat this presentation at the EDUCAUSE annual conference in Atlanta, GA, October 1-4, 2002.
- October 31, 2001: Dave Staudt, Valerie Rice, Carrie Billy (TCU coordinator), Alex Ramirez (HSI coordinator), and Laura-Lee Davidson (HBCU coordinator) gave community and project-wide status reports to the AN-MSI project participants at the Project Action Committee meeting in Indianapolis, IN.
- August 30, 2001: Dave Staudt and Valerie Rice gave a briefing on the project to the entire EDUCAUSE staff during an all-hands meeting.
- August 5, 2001: Dave Staudt gave a briefing to the EDUCAUSE Net@EDU group in Snowmass, CO (during Seminars on Academic Computing).
- July 23, 2001: Dave Staudt gave a briefing and Dewayne Hendricks provided an update on the wireless initiative to NSF program directors.
- July 17, 2001: Dave Staudt gave a presentation to the Department of Education and the US Department of Agriculture.
- June 19, 2001: Dave Staudt, Valerie Rice, Carrie Billy (TCU coordinator), and Ramon Harris (HBCU coordinator) gave a presentation to the National Academy of Sciences.

Training and Development:

The AN-MSI project has arranged with KnowledgeNet for an online test course on Cisco Network Devices. It is the basic course in the Cisco certification process, and is offered in three different ways. Each community (HBCU, HSI and TCU) has enrolled two students in each of the three
online delivery processes. Beginning May 2002, 18 AN-MSI participants began the courses (6 people in each of the three courses). Each student must complete the course and provide a simple assessment of the effectiveness of the course.

Based on AN-MSI’s contact with KnowledgeNet, Florida International University (HSI) has started using KnowledgeNet courses in their academic curriculum for the School of Engineering.

Overall, the AN-MSI project is providing invaluable networking opportunities ‘of the human kind’. Unique cross-cultural collaborations are developing among participants, universities and colleges, the three communities, as well as with ‘majority’ universities and colleges.

**Outreach Activities:**

The AN-MSI project itself is an outreach activity to the Minority-Serving Institutions (MSIs). The first participating cohort includes 103 participating institutions: 36 Historically Black Colleges and Universities (HBCUs), 35 Hispanic-Serving Institutions (HSIs), and 32 Tribal Colleges and Universities (TCUs).

EDUCAUSE runs a general listserv for the AN-MSI project, as well as a listserv for each community (HBCU, HSI, and TCU), reaching over 100 subscribers. The listservs provide a place for participants to discuss current project activities, strategies, potential collaborations, or issues concerning MSIs or higher education in general.

**Grant Accomplishments through May 2002**

**General Background**

- Three culturally diverse communities (Hispanic-Serving Institutions [HSIs], Historically Black Colleges and Universities [HBCUs], and Tribal Colleges and Universities [TCUs]) are collaborating on a project of this size for the first time. With the support of this NSF grant awarded to EDUCAUSE, the three communities have worked together to plan, design, and implement the AN-MSI program. The program provides collaborative technical solutions to networking problems and opportunities, as well as collaborative faculty and institutional development using IT resources and applications for research, teaching, and learning.
- The AN-MSI community has established relations with numerous federal and corporate groups, including: Department of Education, National Academies of Sciences, Coalition for National Science Funding (CNSF), MCNC, Council on Library and Information Resources (CLIR), Cisco, KnowledgeNet, IBM, Williams, CERT, SANS, CREN, NLI, and Internet2. Partners include: AIHEC, Executive Leadership Foundation, EOT-PACI, HACU, NAFEO, NASULGC, and the High-Performance Wireless Research and Education Network (HPWREN).
- The AN-MSI project has held eight national meetings over its three years in order for faculty, staff, and campus administrators to initiate and enhance collaboration across and within the three communities. (The grant has provided reimbursement for travel costs to make attendance possible for participants from all three communities. Securing the funds for travel at meetings has become increasingly difficult, particularly for the smaller AN-MSI schools.) The grant has also sponsored the attendance of CIOs, CEOs, and Presidents of MSIs at campus executive workshops at the national IT conferences. These workshops provide education for campus executives to recognize and manage the rapidly changing IT environment in higher education.

**Recent Accomplishments**

The AN-MSI community has developed collaborative proposals and sub-projects, which are listed below. The explanations provided in brackets [Leadership, Networking, Funding] are the contributions that the AN-MSI Project has made to the following sub-projects within the HBCU, HSI, and TCU communities. Leadership refers to the AN-MSI Project providing guidance or direction in developing a sub-project and seeing it through to the sub-project’s completion.
Networking refers to the AN-MSI Project bringing people together within their respective communities or across the three communities (HBCU, HSI, TCU), who would not have met had it not been for the grant, to develop collaborations and community sub-projects. Funding refers to either seed funding from the AN-MSI Project grant, where participating schools also provide matching funds, or complete funding of a collaboration or sub-project.

- A document entitled, “Mainstream Network Model: Guidelines to Upgrading Campus Networks”, was jointly developed by the three communities with leadership by Yale University’s CIO, Philip E. Long. Through the AN-MSI Project, the participating schools met Phil Long and decided to collaborate and develop the Network Model. AN-MSI provided funding, coordination, editing, printing, and dissemination of the Network Model which is designed to assist campus networking personnel. EDUCAUSE assisted with publication of the guidelines.
  - [Leadership; Networking; Funding]

- The “Mainstream Network Model” is serving as the basis for a primer being developed by Cisco and IBM in conjunction with the AN-MSI community. The primer is aimed at CIOs and CEOs and serves as a higher-level treatment of campus networks and Internet connectivity. Both documents will be provided to MSIs, as well as other institutions of higher education. AN-MSI helped develop and coordinate the primer, and provided some financial support.
  - [Leadership; Networking; Seed funding]

- Schools within the three communities of AN-MSI, which met because of the AN-MSI Project, submitted an ITR proposal to NSF. The MSIs collaborated with Indiana University and the University of Colorado. The proposal was unsuccessful, but a collaborative team was established that is currently developing additional proposals and projects. AN-MSI helped to coordinate the effort and submit the proposal. One of the proposal writers is a consultant to the grant.
  - [Leadership; Networking; Funding]

- Five HSIs in California formed a collaborative and submitted a proposal seeking Department of Education Title V funds. The grant, addressing network security architecture, software and training, was awarded for $3.1 million. The project will form a remote technical support center providing network security services to not only the initial five campuses but eventually to others in the area, and could serve as a backup facility for all three MSI communities. The five HSIS met through the AN-MSI Project. AN-MSI funded half of the proposal effort, as well.
  - [Leadership; Networking; Seed funding]

- A series of six interactive videoconferences on online teaching and learning was developed by and for the three communities. With approximately 15 receiving sites, all six videoconferences were successfully delivered, beginning in November 2001 and continuing through April 2002. This series will be available on CD-ROM to all higher education institutions. AN-MSI provided all of the funding for the videoconference sub-project. UTEP, an AN-MSI participant, developed the concept and materials for the series, which AN-MSI helped distribute.
  - [Leadership; Networking; Funding]

- The AN-MSI grant provides visits to MSI campuses to review and discuss campus IT architectural and organizational strengths, weaknesses, and possible solutions. The campus visit teams, composed of AN-MSI participants, provide written recommendations and follow-up assistance (including strategic planning). From June 2001 through May 2002, 20 campus visits have been completed. The AN-MSI Project assisted with development of campus visit materials, coordinated visits, and provided funding for travel to the MSI campuses.
  - [Leadership; Networking; Funding]

- The three communities have coordinated and participated in a number of online training courses that provide professional development for IT faculty and staff. Courses were offered by SANS, CERT, CREN, Williams, and KnowledgeNet. Discussions are underway with Cisco to establish a training program using their Cisco Academies. AN-MSI contacted the security training organizations listed above and received special pricing rates for MSIs. The project helped organize attendees for the meetings and provided funding for the MSI participants.
  - [Leadership; Networking; Funding]

- Innovative wireless implementations are proceeding at three tribal colleges. Two sites will
have 45Mbps wireless backbones, with newly introduced 10Mbps wireless equipment connecting building LANs to the backbones and the Internet. The third site will use the new 10Mbps equipment to link a remote education center to the main campus. We anticipate testing FCC regulations and tribal sovereignty issues at one of the sites. These implementations could form a platform for future provision of multi-service IP, including telephony, with funding from other sources.

- Turtle Mountain Community College - a 20 Mbps wireless backbone connects four locations on the reservation. Three are radio towers and the fourth is the tribal college building. These sites can be used to provide future Internet connectivity, telephony and other Internet services for homes and offices on the reservation. The original configuration of the wireless system was connection of the main tribal college campus building to the tribal judicial office, three job center buildings and five college buildings, to provide Internet access to these sites. In a subsequent modification, radios were added to the KEYA radio tower in Belcourt, the reservation town, to allow Internet access for all the buildings and houses in the town with funding from other sources. Connectivity from the tribal college off the reservation to the Internet continues to be provided by BIA lines.

- Fort Berthold Community College - a 20 Mbps backbone connects the main tribal college building to two mentoring sites on the reservation. This enables classes to be provided at the mentoring sites, reducing the need to drive up to 100 miles from the sites to reach the main campus for classes. One link, at 27 miles, set a record for this type of radio. As above, these sites can also be used to provide future Internet access, telephony and other Internet services with additional funding. The connection of the college to the Internet remains through a BIA line. Fort Peck Community College - a 20 Mbps link will connect the main campus building with a remote mentoring site 20 miles away. When the new building at the remote site is finished by summer 2003 the college will complete the connection. Internet connectivity for the college continues to be provided through the local telephone company.

- Bethune-Cookman College, an AN-MSI participant, is prototyping a secure 802.11b campus LAN. BCC received seed money in order to assist the campus in implementing secure 802.11b. The Bethune-Cookman technical officer who set up the campus LAN is acting as a resource for other AN-MSI schools interested in securing their wireless networks and has written a report on the implementation (which is available on the AN-MSI web site).

- Another AN-MSI participant, Hampton University, is testing a commercial remote technical support service offering to determine its capabilities vs. cost, and applicability to MSIs. Hampton will act as a resource for other MSIs interested in remote support services. AN-MSI provided seed money for this project.

- Due to attendance at several AN-MSI meetings, six schools in North Carolina have proposed a collaborative Student Technology Services (STS) program to offload the campus networking staffs from the less challenging networking tasks. During one of these AN-MSI meetings, the six schools met with the CIO of the University of Wisconsin-Milwaukee, who developed the award-winning STS program. Now the six NC schools and the UW-Milwaukee CIO have developed a proposal for a collaborative STS program. AN-MSI will provide seed money for this proposal and the schools will serve as a model and resource to other MSIs.

Journal Publications & Other Products

Web/Internet Site

http://www.anmsi.org

The web site provides a general explanation of the project, services provided by the project or its
partners, and significant progress. Other information provided online: participating institutions, articles and resources of interest, possible collaborations, upcoming meetings, committees and their projects, participants and contact information, presentations previously given, and sign-up for listservs.

Video Product

The University of Texas at El Paso (UTEP) conducted a series of six interactive videoconferences supporting a dialogue on online teaching and learning across the Minority-Serving Institutions. The series was entitled "Harnessing Technological Change to Serve a Changing Student Demography: Strategies for Integrating Asynchronous Teaching and Learning Approaches" and ran from Nov. 13, 2001 through April 30, 2002. There were 10-15 receiving sites, with the broadcasts originating from the UTEP, and approximately 100 participants throughout the series.

AN-MSI provided all of the funding for the videoconference series. UTEP, a school participating in AN-MSI, responded to the original call for participation in the project and developed the concept and materials for the videoconference series. AN-MSI helped distribute the series.

The six videoconferences and related materials have been copied to CDs and will be distributed to the 103 colleges and universities currently participating in the AN-MSI project. EDUCAUSE will provide copies to their 'majority' members, as well. The series is now available online in the EDUCAUSE Information Resources Library, http://www.educause.edu/ir/ir-library.html.

Brochure

We have developed a brochure that is being disseminated to any persons or organizations interested in learning more about the AN-MSI project.

AN-MSI developed, printed, distributed, and financed the AN-MSI brochure.

This brochure is being distributed during meetings, briefings, and presentations, or via mailings if requested.

Contributions

Contributions within Discipline

This project has contributed to the principal disciplinary field in that it is a cooperative effort of three minority communities: Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and Tribal Colleges and Universities (TCUs). These three communities are working together to solve common networking problems. This is being done through collaborative projects and by sharing knowledge among individuals, institutions, communities, and projects.

Contributions to Human Resource Development

The project is providing training and knowledge improvement of current networking practices to the three minority communities (HBCUs, HSIs, and TCUs). Through training and networking of the human kind, the participants, who are from diverse backgrounds and institutions, are able to share their knowledge with their institutions and other colleagues. The participants are also able to improve their ability to support their campus, as well as other campuses as required.

Contributions to Resources for Research and Education

The Wired article listed below is about the AN-MSI Wireless Technology and Tribal College
Wireless Project Consultant, Dewayne Hendricks. It is based on the effort at Turtle Mountain Community College that AN-MSI funded.


Other Contributions


Alex Ramirez, Thomas Davis, Ramon Harris, and David Staudt (AN-MSI Co-PI) co-wrote the article 'Minority-Serving Institutions: Building the Human Connection', Syllabus, p. 10, Vol. 15, (2001). Published.

Philip E. Long, et. al., wrote the primer 'Mainstream Network Model: Guidelines to Upgrading Campus Networks', (2002). Primer, Published. EDUCAUSE (publisher), Boulder, CO.


AN-MSI is the basis for all of the above publications. The authors met through the project and decided to write the journal articles, testimonies, and Network Model primer. AN-MSI also financed the publication of these publications. The project coordinated development of the Network Model, and provided printing and distribution to the MSI schools. The two testimonies were written by AN-MSI consultants and are considered outreach.

Notes regarding the above authors and their relationship with the AN-MSI Project:
* Thomas Davis is an AN-MSI Community Leader for the Tribal Colleges & Universities (TCU).
* Ramon Harris is an AN-MSI Community Leader for the Historically Black Colleges & Universities (HBCU).
* Dewayne Hendricks is an AN-MSI consultant for Wireless Technology and the Tribal College wireless project.
* Eric Jensen is an AN-MSI consultant for documentation and legislative affairs.
* Philip E. Long served as a consultant to lead the AN-MSI Community Participants in the development of the AN-MSI Network Model Guidelines.
* Alex Ramirez is an AN-MSI Community Leader for the Hispanic-Serving Institutions (HSI).
* Mark Trebian is an AN-MSI TCU participant.

EOT-PACI Accomplishments

The EOT-PACI (Education, Outreach and Training Partnerships for Advanced Computational Infrastructure) portion of AN-MSI has reached more than 40 institutions and almost 150 people since 1999. EOT-PACI outreach has occurred through PACI activities, meetings, workshops, conferences and discussions.

More information can be found by clicking on EOT-PACI at www.ncsa.uiuc.edu/AccessInclusion.

EOT-PACI/AN-MSI has sponsored several regional workshops introducing high-performance
computing applications. In addition to a series covering implementation of clusters at MSIs to enable local low-cost, high performance computing, EOT-PACI is promoting AN-MSI attendance at six summer workshops conducted by the National Computational Science Institute to develop and use applications for the clusters.

The EOT-PACI/AN-MSI program’s commitment to on-going evaluations by its MSI participants has resulted in the formation of an MSI High Performance Computing Working Group. This group is made up of 10 MSIs from the Tribal, Hispanic-Serving and Historically Black College and University communities charged with the task of developing strategies to increase the number of MSIs participating in high performance computing.

EOT-PACI/AN-MSI continues to leverage this sub-award to secure additional funding for collaborative projects such as Global Grid Forum (GGF) and the Supercomputing Conference (SC) MSI Participant Grant sponsored by IEEE and ACM. Several AN-MSI participants from all three communities have attended these functions (GGF and SC). EOT-PACI continues to share information about other High Performance Computing activities via the AN-MSI listserv, as well.

The EOT portion of the AN-MSI grant assists colleges and universities that traditionally serve African-American, Hispanic, and Tribal communities in the development of the computational infrastructure and skills needed to utilize advanced computational tools and resources, such as the technology Grid being prototyped by the PACI program. The Grid will connect people, supercomputers, virtual environments, scientific instruments, educational tools, and large data sets through a seamless, integrated, persistent environment operating over high-speed networks.

**EOT-PACI/AN-MSI Goals**

Demonstrate the use of NSF PACI technologies and resources among diverse audiences by leveraging NSF PACI thrusts/team efforts. Increase participation of under-represented groups in computer science and engineering, information technology, and NSF PACI.

**Overview of Activities**

- Supercomputing Conference Education Program Outreach project to encourage MSIs to apply to participate in the four-day session in November 2002. To date 26 MSIs have applied.
- The Regional Cluster Computing Workshop in Champaign-Urbana in May 2002, with 21 MSI participants.
- The Regional Cluster Computing Workshop in San Diego in March 2002, with 16 MSI participants.
- Formed a Working Group for Minority Serving Institutions in High Performance Computing (MSI-HPC). The MSI-HPC working group is a short-term working group formed to identify and implement specific action items designed to increase the number of minority serving institutions engaged in high performance computing. It is the expectation that this group will evolve into an international consortium for MSI HPC. The group was formed in March 2002 with 10 member institutions.
- The SC01 Minority-Serving Institutions Participation Program in Denver in November 2001, with 30 MSI participants.
- Participated in the AIHEC-Smithsonian-PACI meeting September 8, 2001. The goal of the meeting was to educate the people from the Smithsonian about PACI Technologies and programs. AIHEC wanted to showcase PACI technologies and brainstorm how PACI can help support new programs and initiatives connected with Museum of the American Indian that is now being built on the mall in DC.
- Stephenie McLean, Allison Clark and Roscoe Giles participated in and presented the EOT-PACI/AN-MSI project at several conferences and meetings: NAFEO (2/02); presented over
the Access Grid to the Indiana Higher Education Telecommunication System (IHETS) at Purdue (11/01); White House Initiative on HBCUs (2/02); National Academies (1/02); 50 top African Americans in Technology (2/02); NSF Program Review (2/02); NPACI All-Hands Meeting (3/02); Alliance All-Hands Meeting (5/02); NSF PI/PD meeting of HRD Diversity Focused Programs (3/03); IEEE International Symposium on Technology and Society (6/02); Winston-Salem University Supercomputing Conference (2/02); Global Grid Forum (3/02); AN-MSI Planning Meetings (2/02 & 5/02); EOT-PACI/AN-MSI MSI-HPC Working Group (3/02 & 5/05); Institute for African American E-Culture (4/02); Howard University Education Department (4/02); SECME Meeting (4/02); Congressional Black Caucus (9/02); Unity Journalists of Color Town Hall Meeting (5/02); National Science Week Access Grid press conference (4/02); SC02 Education Program/Howard University Breakfast Reception (4/02); SC02 Planning Committee-MSI Participation, Meeting with Robyn Render, North Carolina University System (5/02).

- Allison Clark and Roscoe Giles wrote a proposal to support MSI participation in the SC 2000 and SC2001 Conferences. SC sponsors IEEE and ACM funded this. It directly supports travel, lodging, and registration for participants from Minority Serving Institutions. The grant funded 12 participants at SC00 and 30 participants at SC01 at $1,800 each.
- Partnered with the Shodor Education Foundation to present a series of three workshops on Computing Across the Curriculum as well as to offer MSIs an opportunity to participate in the National Computational Science Institute (NCSI) workshops.
- Deployed an Access Grid Node at Florida International University. FIU will generate projects locally and expand internationally through the Pathway of the Americas (AMPATH).
- Held a meeting of the Howard University Advanced Networking Initiative. The purpose of this project is to connect Howard to the Mid-Atlantic Crossroads network (MAX).

**Summary**

Through these AN-MSI and EOT-PACI accomplishments, the three communities of Minority-Serving Institutions have built a strong human network that can continue to grow and improve in the future. Although this grant has only scratched the surface and many of the challenges faced by MSI campuses remain, the human connections and collaborations made during the life of this 4-year grant can be expected to yield long-lasting improvements in the networking and related IT capabilities of the MSI institutions, positioning them to play a more central role in both research and education in the future.