

THE AMERICAN DISTANCE EDUCATION CONSORTIUM (ADEC)

CURRENT ACTIVITIES

1. Membership and Finances

ADEC has 65 members including 1862, 1890 and 1994 institutions. Recent growth in membership comes from the 1890 and 1994 land grants. The annual audit was successfully completed in October with no material findings and no deficit even though organizational dues remain the same as they were in 1994.

2. National Science Foundation (NSF)

ADEC received nearly \$2 million in grants from the National Science Foundation this year for work with its Advanced Internet Satellite Extension Program. This is in addition to the nearly \$2.5 million received for this program since initiated late in calendar year 2000. This research and development project partners with Tachyon, Inc. and Internet2 as well as others to create digital inclusion, particularly to rural/remote areas and underserved communities. A network of 70 video satellite systems, cooperating with 40 ADEC member institutions, capable of carrying high-speed Internet access via satellite, is in place and applications including videoconferencing and multicasting are in progress. \$400,000 was added to the core project this year, particularly to meet the needs in EPSCoR states with a focus on rural/remote data collection and remote sensing. Several transportable and mobile unit projects have been authorized. AISEP also includes a component working on advanced networking and digital libraries with Chinese scientists. The project also has goals related to educational effectiveness, and research teams are gathering data about the use of Internet and distance education in a number of settings including rural learning centers, 1890 and 1994 institutions, rural communities and Indian reservations. For more information see www.adec.edu/nsf. The database of sites is also located at this URL.

3. ADEC Awards

November 18th is the deadline for the annual ADEC Award of Excellence (\$5000) to the outstanding distance education team. This is also the deadline for submissions to the new ADEC Webb-Godfrey-Hill Award, a new \$2000 cash award focused on honoring the 1890 institution making the most progress in building toward distance education capacity. The award is named for Burleigh Webb, Dan Godfrey of North Carolina A&T State University and Walter Hill, Tuskegee University, for their pioneering leadership in distance education and information technology. ADEC is now working with the 1994 community to establish a similar award beginning next year. The awards will be presented in April at the All ADEC meeting.

4. Sloan Foundation Scholarships

ADEC just began a new partnership with the Sloan-Consortium, an organization of colleges and universities focused on Asynchronous Learning Networks (ALN). ADEC joined Sloan as a co-sponsor in their conference held in Orlando, Florida last week. The Sloan Foundation granted ADEC ten scholarships for 1890 and 1994 institutions to attend the conference. ADEC demonstrated the Prairie View A&M University mobile satellite unit at the meeting, as well as making presentations about the NSF grant.

5. Agricultural Telecommunications Program

ADEC worked cooperatively with Cornell University in managing the annual Agricultural Telecommunications Program grant competition. Six projects were selected for funding: 1) "Advanced Web Delivery of Rangelands and Natural Resources Information" - lead institution: University of Arizona; 2) "Tri-State Aquaculture Outreach Using Technology" - lead institution: Kentucky State University with West Virginia University and The Ohio State University; 3) "Education Outreach Online" Texas A&M University with USDA/ARS Southern Plains Area; 4) "Southern Region Equine Knowledge Base" - lead University of Kentucky with Louisiana State University, University of Georgia and University of Tennessee; 5) "Linking Growers and Soil Health Researchers through Advanced Internet Technology" - Cornell

University and 6) "Cooperative Extension Curriculum Project" - Southern Regional Extension/Mississippi State University. The ADEC Board of Directors is working with a number of sub-consortia in discussing future plans with reference to the \$12 million annual authorization for Agricultural Telecommunications. Work will be focused on e-Extension, digital inclusion through appropriate infrastructure and competitive programming for underserved audiences.

6. IDEAL3

Dean Sutphin, Cornell, is stepping down as chair of the IDEAL Committee and Rosemary Haggett, West Virginia University, has accepted leadership once again for this initiative. IDEAL3 has three major thrust areas: 1) development of a database of quality distance education programs that exemplify the principles developed by IDEAL; 2) collection of state of the art and best practices, including peer review and use in both academic programs and Extension for module development and 3) digital library development - a national media event for all land-grant universities and collaborators.

7. e-Extension

ADEC is partnering with the e-Extension initiative that grew out of the 21st Century Extension work to host a Think Tank December 5 in Atlanta. Consideration will be given to Guiding Principles for Distance Education, protocols for an interactive web-based system, business and management plans, needs assessment and marketing. ADEC is working under an MOU with the e-Extension project, collaborating with NASULGC, CSREES and regional extension leadership.

8. ADEC Strategic Plan and Building Collaborative Worktools

John Kelly, Clemson and Don Poucher, University of Florida are leading ADEC's Strategic Planning process. Task forces coordinated under this strategic plan include 1) Think Tank process development; 2) Professional Improvement/Capacity Building; 3) Distance Education Policy; 4. Collaboratories and Collaborative Worktools. The Think Tank team will initiate activities with the e-Extension Think Tank and Collaboratory; the Professional Improvement/Capacity Building team is conducting needs assessment and working on curriculum development; 3) the Distance Education Policy team has conducted a national survey on barriers to distance education and is now working on implementation of barrier removal strategy and the Collaboratory and Collaborative Worktools/research and development has developed online collaboratories for the 21st Century Extension task force, the e-Extension Think Tank, and the Educational Effectiveness Committee for the NSF Grant. North Carolina State University, the University of Arizona and the University of Nebraska-Lincoln have provided leadership resulting in new chat tools, the ADECaucus tools for online conferencing. Development is ongoing for partnerships with cutting edge information and education science programs such as the University of Michigan, Stanford and MIT to assure that the ADEC institutions have access to and assist in shaping the coming changes to the Internet environment.

9. Commonwealth of Courses

Gary Miller, The Pennsylvania State University is chairing this initiative to determine the best strategies and practices for ADEC member institutions to develop business practices for sharing courses throughout the consortium. **An** online survey is currently underway to determine what institutions are currently doing in terms of opening their programs to other institutions and the mechanisms used to do this.

10. Marketing Committee

An ADEC marketing committee is at work to revamp, revitalize and energize ADEC's internal and external marketing strategies and resources. This includes making the Strategic Plan a living document, reviewing the ADEC webpage and printed material for improvements and additions, development of educational materials for ADEC PCOs so they can better foster participation in the organization. Don Poucher, University of Florida chairs this committee.

AGRICULTURAL TELECOMMUNICATIONS PROGRAM



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Projects Funded 07/02

Agricultural Telecommunications - Cornell University/ADEC
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1. Project Name: "Advanced Web Delivery of Rangelands and Natural Resources Information"

Lead Institution: University of Arizona

Collaborating Institutions: Colorado State University; Kansas State University; Montana State University; New Mexico State University; Oregon State University; Texas A&M University; University of California, Davis; University of Idaho; University of Nevada; University of Wyoming; Utah State University; Washington State University

Project Director: Carla Long Casler

Co-PIs: Barbara Hutchinson, Marianne Stowell Bracke, Robert MacArthur, Sheila Merrigan, Jeanne Pfander, George Ruyle

Abstract: Thirteen Western land-grant universities will develop an advanced technical foundation for improved delivery of rangelands and natural resources information and programming via the web. The program targets small-scale landholders, agency and other private land managers, researchers, and students. The University of Arizona will develop and maintain a metadata database which accommodates data entry from western partners and interfaces with the main AgNIC gateway database. Partner institutions will identify and develop rangelands and natural resources information and programming which will be made available through the regional rangelands website and AgNIC database, and developed into established extension programming. The final web product will be demonstrated at Cooperative Extension and library meetings throughout the Western U.S.

2. Project Name: "Tri-State Aquaculture Outreach Using Technology"

Lead Institution: Kentucky State University

Collaborating Institutions: West Virginia University; The Ohio State University

Project Director: Gordon Mengel

Co-PIs: Kenneth Semmens, Laura Tiu, Tod Porter, Alan Escovitz, Siddhartha Dasgupta, James Connors

Abstract: The tri-state aquaculture outreach team will support and train secondary teachers in remote locations. The project will develop a semester-long aquaculture program using existing curriculum developed by the National Council on Agriculture Education. Each month different modules will be taught to participating teachers via video technology. The project will also develop a website with resources for teachers and students. Constant virtual contact with aquaculture specialists through monthly videoconferencing and website access will give teachers support needed to utilize the curriculum. Exposure to aquaculture in the classroom will enhance students' knowledge of agriculture and the scientific method, and help identify career opportunities in the food and agriculture sector.

3. Project Name: "Education Outreach Online"

Lead Institution: Texas A&M University

Collaborating Institutions: USDA/ARS Southern Plains Area

Project Director: Robert K. James

Co-PIs: Charles Onstad, William Rubink, Herbert Wilson

Abstract: The project will reach out to communities and schools nationwide with hands-on, inquiry-based science activities for grades 5-9 and online science teaching resources informing students about career opportunities in agri-science. Project staff include science educators and a webmaster. Internet-based material will be disseminated through the web site, presentations at national educational and scientific conferences, USDNARS labs, and FIRST STEP teachers.

4. Project Name: “Southern Region Equine Knowledge Base”

Lead Institution: university of Kentucky

Collaborating Institutions: Louisiana State University; University of Georgia; University of Tennessee

Project Director: Craig H. Wood

Co-PIs: Ashley Griffin, Clint Depew

Abstract: Southern Regional Equine Specialists from Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia will contribute to development of an online Equine Knowledge Base to address areas of Animal Sciences, Environmental and Natural Resources and Veterinary Medicine. The knowledge base will include live chat functions, fact sheets, frequently asked questions, audio files, movie files, proceedings, presentations and other sources of accurate and relevant information. It will have features allowing easy access by knowledge base users including keyword, natural language, and fuzzy search capabilities, and content ranking which places commonly sought items first. The project will provide specialists with improved professional time management by sharing effective and efficient answers over the internet, and will empower extension professionals and others to find information in a “just-in-time” manner. Target audience includes women, the general public, county extension agents, young people, veterinarians, professors, farm workers, horse owners and equine professionals.

5. Project Name: “Linking Growers and Soil Health Researchers through Advanced Internet Technology”

Lead Institution: Cornell University

Project Director: Laurie Drinkwater

Co-PI: Erick Fernandes

Abstract: The project will enhance the Worldwide Soil Health Information portal's capacity to deliver relevant information by forging direct, field level links to underserved organic growers in New York State and women's horticultural cooperatives in Latin America. New institutional partnerships will be created in the United States, Brazil, Colombia, Honduras, and southern/eastern Africa. The portal will explore next-generation portal technologies including allowing computers to “understand” user needs, user customization “channels”, and distributed database deployment with access to partners' databases. It will also provide expanded “online experts” service, monthly soil health current awareness service for researchers, and off-line extension material for farmers.

6. Project Name: “Cooperative Extension Curriculum Project”

Lead Institution: Southern Regional Extension/ Mississippi State University

Collaborating Institutions: North Carolina State University; Virginia Tech; University of Florida; University of Georgia; Texas A&M University; South Carolina State University; Louisiana State University; University of Arkansas; Clemson University; University of Kentucky; Oklahoma State University; Florida A&M University

Project Director: Ronald A. Brown

Co-PIs: Mitchell Owen, Jerry Gibson, Joan Dusky, Robert Hamilton

Abstract: This project will develop a comprehensive Extension Electronic Curriculum Guide consisting of competency-based multimedia instructional modules, learning objects, and a learning management system. It will provide a way for 1862 and 1890 land-grant institutions in the southern region to cooperate in multimedia web-based curriculum development and increase efficiency by avoiding duplicate materials.



Guiding Principles for Distance Learning

1. Design for active and effective learning.

Principle: Distance learning designs consider

- specific context
- needs, learning goals, and other characteristics of the learners
- nature of the content
- appropriate instructional strategies and technologies
- desired learning outcomes
- local learning environment

2. Support the needs of learners.

Principle: Distance learning opportunities are effectively and flexibly supported, including

- initial disclosure of information on the learning opportunities
- orientation to the process of learning at a distance, including use of technologies for learning
- site and tutorial support
- student advising and counseling
- provision of technical support and library and information services
- problem-solving assistance

3. Develop and maintain the technological and human infrastructure.

Principle: The provider of distance learning opportunities has both a technology plan and a human infrastructure to ensure that

- appropriate technical requirements are established
- compatibility needs are met
- technology at origination and receive sites are maintained to ensure technical quality
- learners and learning facilitators are supported in their use of these technologies
- partnering and collaboration are explored as appropriate

4. Sustain administrative and organizational commitment.

Principle: Distance education initiatives are sustained by an administrative commitment to quality distance education, as indicated by

- integration of distance education into the mission of the organization
- financial commitment to accommodate diverse distance learning needs
- faculty development and reward structures
- training to support learners, site facilitators, and technicians
- marketing and management structures to promote and sustain distance education
- cost-effectiveness reflected through best use of fiscal, technical, and human resources
- ongoing evaluation and research

Distance Education... Distance Education... Distance Education...

ADEC Guiding Principles for Distance Teaching and Learning

Basic Assumptions

- The principles that lend themselves to quality face-to-face learning environments are often similar to those found in web-based learning environments.
- With all forms of media converging to a digital platform, advanced educational technology may include a variety of learning environments and information appliances.
- While rapidly emerging technologies offer unlimited potential for virtual learning environments for both face-to-face as well as distance learners, practical application of existing technologies may often prove highly effective for various audiences and objectives.

The following principles are intended to serve as guidelines for identifying and evaluating web-based courses and non-formal educational programs. Web-based learning environments may be designed for distance as well as face-to-face students. Other relevant guidelines for support services and administrative policies are included on the ADEC [web site](#) and on the back of the ADEC folder in hardcopy.

Principles

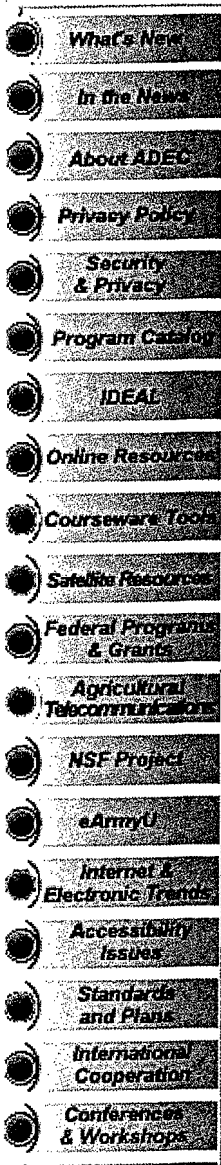
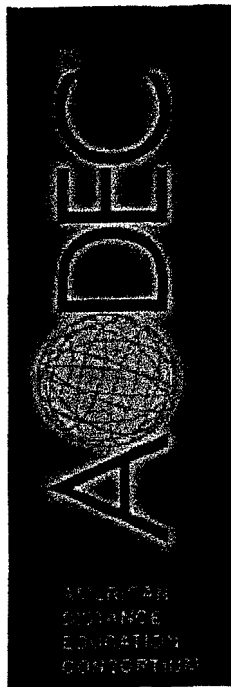
- The learning experience must have a clear purpose with tightly focused outcomes and objectives.

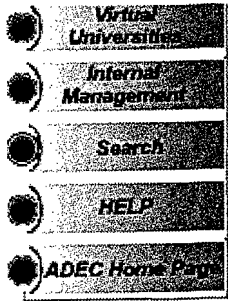
Web-based learning designs must consider the nature of content, specific context, desired learning outcomes and characteristics of the learner. Learner-centered strategies include modular, stand-alone units that are compatible with short bursts of learning. Learning modules may also be open, flexible and self-directing.

- The learner is actively engaged.

Active, hands-on, concrete experiences are highly effective. Learning by doing, analogy and assimilation are increasingly important pedagogical forms. Where possible, learning outcomes should relate to real-life experiences through simulation and application.

- The learning environment makes appropriate use of a variety of **media..**





Various learning styles are best engaged by using a variety of media to achieve learning outcomes. Selection of media may also depend on nature of content, learning goals, access to technology, and the local learning environment.

- Learning environments must include problem-based as well as knowledge-based learning.

Problem-based learning involves higher order thinking skills such as analysis, synthesis, and evaluation while knowledge-based learning involves recall, comprehension and application.

- Learning experiences should support interaction and the development of communities of interest.

Learning is social and sensitive to context. Learning experiences based on interaction and collaboration support learning communities while building a support network to enhance learning outcomes. Multiple interactions, group collaboration and cooperative learning may provide increased levels of interaction and simulation.

- The practice of distance learning contributes to the larger social mission of education and training in a democratic society.

Changing mental models and constructing new knowledge empowers learners and encourages critical thinking. "Knowledge becomes a function of how the individual creates meaning from his or her experiences; it is not a function of what someone else says is true." (Jonassen, 1995)

Characteristics of quality web-based teaching and learning:

1. Fosters meaning-making, discourse
2. Moves from knowledge transmission to learner-controlled systems
3. Provides for reciprocal teaching
4. Is learner-centered
5. Encourages active participation, knowledge construction
6. Based on higher level thinking skills -- analysis, synthesis, and evaluation
7. Promotes active learning
8. Allows group collaboration and cooperative learning
9. Provides multiple levels of interaction
10. Focuses on real-world, problem solving

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ADVANCED INTERNET SATELLITE EXTENSION

PROJECT SUMMARY

The "Internet Satellite Project" will develop and deploy advanced Internet services and technologies over satellite infrastructure for purposes of enhancing research, instruction and learning in a diverse set of institutions of higher education.

A combined effort by the American Distance Education Consortium (ADEC) and Tachyon, Inc. will extend the benefits of Internet2 to a broader set of institutions and provide experience with advanced satellite-based Internet technology. The project will be managed by ADEC and led by a core set of ADEC member institutions engaged in the Internet2 project. ADEC bridges the Internet2 community to an extended set of diverse institutions of higher education. Tachyon provides technology capable of connecting the Internet2 community to institutions unable to access the Internet2 backbone network because of geographic disadvantage.

This project focuses on bringing advanced networking applications to geographically remote campuses. These capabilities will be applied to the areas of research, instruction and learning. By engaging previously unreachable campuses or parts of campuses and remote learning centers, this will enable a broader community of scholars to engage in research; greater access by scholars both at Internet1 institutions as well as at the previously unreachable institutions to remote instruments and data sources; the increased availability of instructional and learning resources shared among a more diverse student population; and access by the research university community to cultural and human resources from otherwise inaccessible institutions and extension offices.

The main objectives of the project are to:

1. Explore the use of satellite technology to deliver Internet services so as to determine the compatibility of this new technology with services and applications being developed within the Internet2 project.
2. Explore the deployment and integration of distance education applications, including collaborative applications at rural, remote institutions and extension learning centers that have previously been unable to access such technologies.

Research objectives of the project will include but not be limited to:

1. Establishment of what constitutes "pretty good Internet" for remote locations.
2. How to establish, build and support a satellite based IP network.
3. Connect the Tachyon satellite gateway to the San Diego NAP (commodity and Internet2 service providers).
4. Provide Tachyon Access Points to selected ADEC members not accessible via the traditional Internet infrastructure.

5. Investigate QOS utilizing Tachyon/Internet2 Quality of Service capabilities to enable distance education applications.
6. Work with **NLANR** and CAIDA measurement teams to study network performance.
7. How to use QOS to deliver through the Internet including satellite wireless last mile solution.
- 8, Determine what is required to support this type of network.
9. Determine the parameters for a sustainable business model.

NSF funding is requested to support:

- engineering and technical support for design of network architecture, development and deployment of advanced network services,
- applications development support,
- project management, communication and training support for overall project,
- a portion of equipment and fees associated with connecting the Tachyon gateway to commodity and Internet2 backbone networks, and
- a portion of equipment and fees at for each remote site using the Tachyon-based connectivity.

ADEC will cost share project management, administrative support systems, space, networking and other telecommunications services at the University of Nebraska-Lincoln and ADEC core implementing members will contribute a portion of coordination, installation, training, applications development and technical assistance.

Tachyon will cost-share:

- half of the cost of the Tachyon Access Points,
- a discounted rate on bandwidth service fees, and
- engineering support for development of advanced networking services

<http://chronicle.com/free/2001/12/2001121701u.htm>

Researchers Test Small-Dish Satellite Links for Distance Education

By FLORENCE OLSEN

Researchers at the Internet2 Technology Evaluation Center of Ohio are studying ways of using small-dish satellite technology to provide cheap, fast Internet connections for distance education.

The researchers recently joined the American Distance Education Consortium's Internet-satellite project. The consortium has a \$4-million grant from the National Science Foundation to experiment with using advanced Internet-satellite technology.

"We're very interested in pushing this technology to the point where we can do more distance education," says Janet K. Poley, who is president and chief executive officer of the consortium and also the lead researcher for the satellite project.

Many poor and remote communities in the United States that might benefit from distance education either have no Internet access or have access that is both costly and slow, says Ms. Poley. The consortium's members are 60 state and land-grant universities, and the headquarters is at the University of Nebraska at Lincoln.

The project's goal is "digital inclusion," Ms. Poley says. "It seems to me you're better able to make progress if you're looking at digital inclusion, whereas 'digital divide' strikes me a bit like a big ditch you can't get over."

Data collection for the satellite project has already begun. "We're starting to identify the problems," says Pankaj Shah, director of the Internet2 Technology Evaluation Center. The center, operated by a consortium of Ohio universities, government agencies, and technology corporations, is part of the Ohio Supercomputer Center, in Columbus.

Among the technical challenges facing the researchers will be trying to make broadband Internet2 technologies such as multicast videoconferencing work within the bandwidth constraints and signal delays of small-dish satellite technology.

A related challenge, Mr. Shah says, will be to develop both an affordable satellite dish, for which colleges would pay about \$5,000 or less, and 24-hour Internet satellite service, priced at about \$1,200 or less a month. The research is being conducted using Internet satellite equipment and service from Tachyon Inc. of San Diego. The research, Mr. Shah says, could produce an open standard for Internet-protocol transmissions over satellite digital networks.

Ms. Poley says the research, if successful, would expand distance-education opportunities for students attending colleges in rural and remote areas, as well as tribal, historically black, and Hispanic colleges,

and the communities those institutions serve. The distance-education consortium has already mounted satellite dishes atop buildings at **45** of those colleges.

Engineers for the Ohio Academic Resources Network at the Ohio Supercomputer Center will be available to field calls from colleges that need technical support. "When the sites have a problem, they will call in to us," says Mr. Shah. "Our engineers will take care of it."

In many places -- not only in the United States, but also in Russia, China, and other expansive countries -- satellite systems "are critical to getting distance education to more populations around the world," Ms. Poley says.

The consortium's satellite experiments with small-dish systems are bringing together other technologies, including the Internet2 fiber-optic backbone network. "Hybrid networking" is the only way to bring high-quality Internet service to colleges in poor, rural, and remote areas, Ms. Poley says.

The consortium is working with researchers and educators at each remote site, trying to get "a nice mix" of education and research activities that require reliable satellite access to the Internet, says Ms. Poley. "We say that technology is necessary but is not sufficient to make good things happen."

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