

ADEC

Distance Education  
Consortium

AMERICAN  
DISTANCE  
EDUCATION  
CONSORTIUM

A  DEC<sup>®</sup>

## ◆ The American Distance Education Consortium

- ◆ 65 U.S. State Universities and Land Grant Colleges
- ◆ Western Hemisphere Initiative

# ADEC IS

- ◆ an international consortium of
- ◆ state universities and land grant colleges
- ◆ providing economic programs and services
- ◆ via the latest and most appropriate technology
- ◆ the foremost leader in providing and creating access to customer driven distance education in its mission areas

# ADEC PROGRAMS

- ◆ Food and Agriculture
- ◆ Children, Youth and Families
- ◆ Community and Economic Development
- ◆ Distance Education and Technology
- ◆ Environment and Natural Resources
- ◆ Nutrition and Health
- ◆ Other

# ADEC Trademarks

- ◆ Agricultural  
Satellite  
Corporation
- ◆ Ag\*Sat

- ◆ The American  
Distance  
Education  
Consortium

# ADEC ADMINISTRATION

- ◆ Board of Directors
- ◆ Program Panel
- ◆ Principal Contact Officers
- ◆ Staff

# ADEC CATALOG

- ◆ Degree Programs and Courses
- ◆ Via Internet
- ◆ Via Videotape
- ◆ Via Satellite
- ◆ Combinations
- ◆ Extension and non-academic programs
- ◆ Local
- ◆ National
- ◆ International

# IDEAL COMMITTEE

- ◆ Credit and Transfers
- ◆ Tuition
- ◆ Electronic Commerce
- ◆ Multi-Institutional Cooperation
- ◆ Guiding Principles for Distance Teaching and Learning



# International Partnerships

IICA Agreement

Monterrey Tech Partnership

Chinese Networking

International Council for Open and Distance  
Education (ICDE)

Collaborations in Asia, Africa & Latin  
America

# ADEC Institutions Work Together

- ◆ Strategic Planning
- ◆ Technology Research & Development
- ◆ Guiding Principles
- ◆ [www.adec.edu](http://www.adec.edu)
- ◆ IDEAL: quality case studies; module development; digital libraries
- ◆ Shared catalog & e-commerce

# Food, Agriculture, Natural Resources

- Agricultural Telecommunications Program
- Sustainable Development: Global Seminar
- Undergraduate and Graduate Degrees
- E-Extension – Adult & Youth Learning Opportunities

# Agricultural Telecommunications

- ◆ Develop National/International Network
- ◆ Academic Programs
- ◆ Extension Programs
- ◆ Module Development
- ◆ Natural Resources & Environment
- ◆ New Uses for Agricultural Products
- ◆ Nutrition & Family Sciences

# Quality Distance Teaching & Learning

1. Clear Purpose and Defined Objectives and Outcomes
2. Learner Actively Engaged
3. Uses Variety of Media
4. Problem – Based, Not just Knowledge-Based
5. Support Interaction & Communities of Interest
6. Contributes to Social Mission of Education & Training

# E-Learning – New Directions

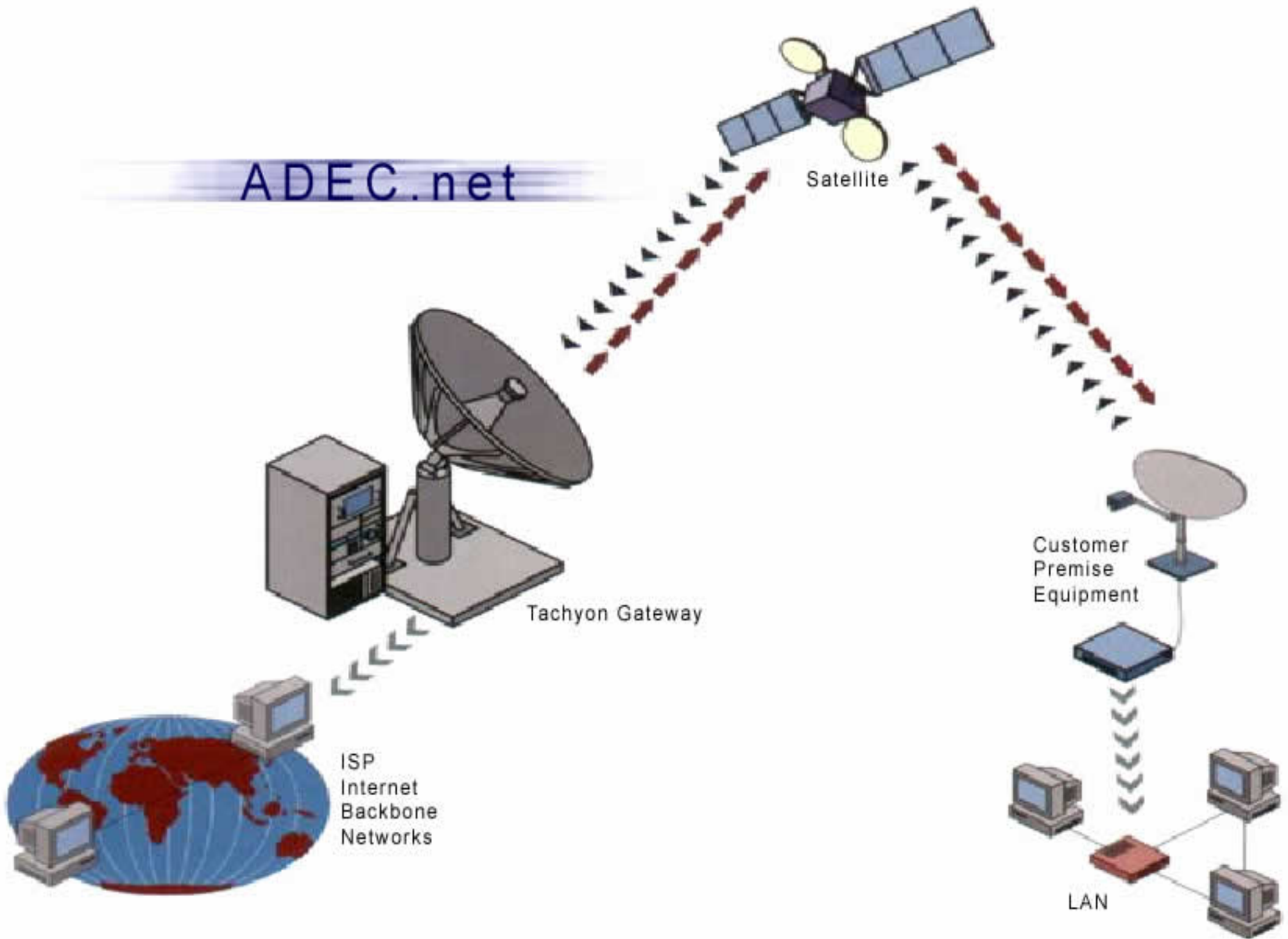
- ◆ Global Interest Growing
- ◆ National, state and local governments are investing
- ◆ Technology must become easier, lower cost per unit and offer better content
- ◆ Virtual enterprises and collaborative commerce
- ◆ Simulation, shared geographical space, community software
- ◆ Wireless – new opportunities

# Advanced Internet Satellite Extension Project - NSF

Goal:

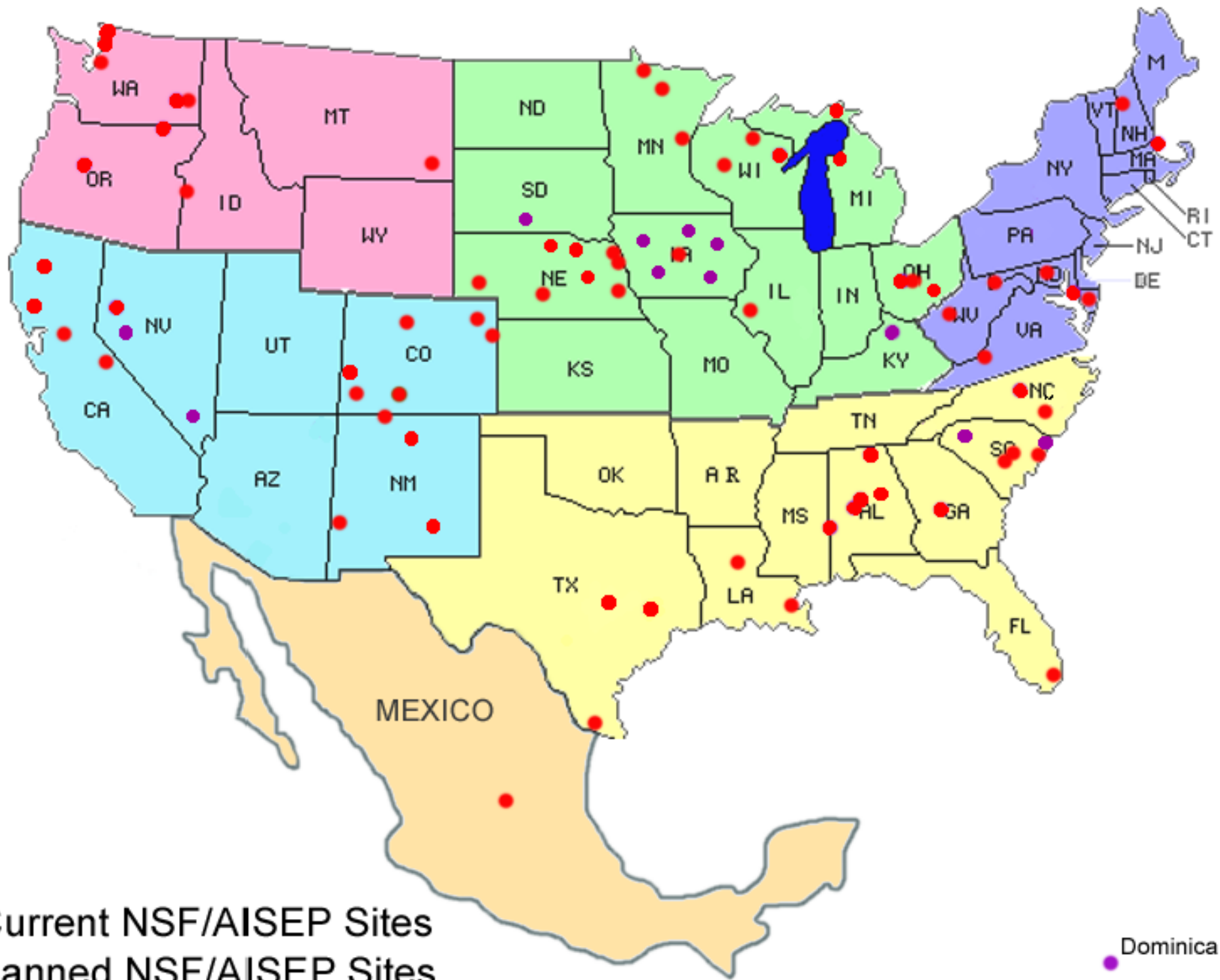
Bring advanced networking applications to geographically remote learners for purposes of research, teaching and extension.

ADEC.net







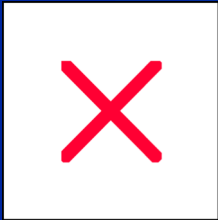


# Research Projects

## ◆ EPSCoR

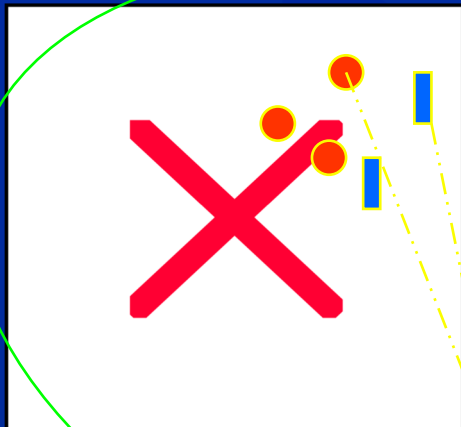
- ...to extend the AISEP test-bed into EPSCoR states in a systematic fashion, as well as test specific remote sensing, GIS and other scientific applications of hybrid networking, including satellite
- ...using appropriate combinations of fiber, satellite, wires and radio technology to carry signals in combination with software and devices for data collection, communications, visualization and decision making

# Improved Efficiencies of Nitrogen and Irrigation Management



University of Nebraska  
Lincoln

Internet 2



Data loggers  
and sensors

network



Computer

Tachyon Central  
Ground Station  
San Diego

Earth  
Satellite



Satellite  
IP

Tachyon Customer  
Premise Equipment  
(CPE)



## nitrogen cycle



Environmental Factors affect on N processes

Managed Factors

NCSOIL

Glossary

Animations

Login Request

Lost Password

Quiz

My Progress

### Environmental Factors affect on N processes



## Learning Objectives for Environmental Factors

Describe the effect of soil properties on the processes in the N cycle

Predict the effect of differences in water filled porosity on N processes

Identify classes of organisms in N cycle

Describe optimum conditions for organisms in N cycle

Understand the role and functions of macro and micro organisms in the N cycle

Describe the effect of vegetation type and residue on N processes

NEXT

# nitrogen cycle



## Environmental Factors affect on N processes

- Learning Objectives for Environmental Factors
- Texture/OM
- Water
- Aeration
- Temperature
- Biota
- pH

## Managed Factors

## NCSOIL

## Glossary

## Animations

## Login Request

## Lost Password

## Quiz

## My Progress

## Environmental Factors affect on N processes

### Texture/OM

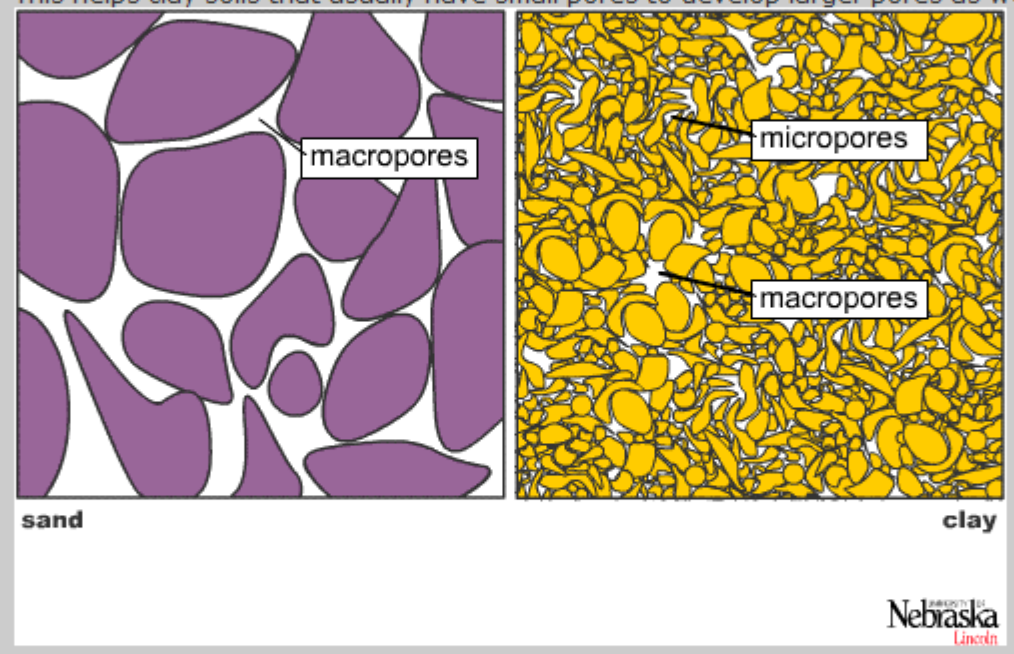
Texture/OM levels – Soils with higher **clay** and organic matter content will have a higher **cation** exchange capacity (CEC) than soils of sandier textures. This gives the finer textured soils an increased ability to “hold” or “bind”  $NH_4^+$  and other nutrient cations. The individual pore spaces in the fine textured soils are smaller, but fine-textured soils have a larger total amount of pore space and a large total surface area that allows for much more of the soil mass to be in **contact** with the soil solution. The more coarse-textured soils (sandy soils) have less total pore space, but the individual pore spaces are larger. The pore space in a soil is important because this is where the soil water and air are found.


Macropores are mainly found in coarse textured soils while the **dominant** pore size in fine textured soils are micropores. Pore size distribution is determined by textural class or the percent sand, **silt** or clay in the soil. Textural classes can be determined if the percent sand, silt, and clay are known using the textural triangle.

Pore types	Size range	Characteristics
		Conduct water during flooding, ponding rain. The

(Source: Elements of Soil Physics, Koorevaar, Menelik, Dirksen, 1983)

The organic matter in the soil helps to form the soil aggregates. The roots will physically hold the soil together, and the organic matter acts as a cementing material that helps to hold smaller soil particles together, forming aggregates. This helps clay soils that usually have small pores to develop larger pores as well.



 **Question :** What happens to the amount of air in the soil when pores are filled with water.

decomposition of organic matter is slowed and organisms that do not require oxygen for living become more active. ">

Management and Soil Condition Selected

Output Graphs

[Soil NH4-N Plus NO3-N](#)

[Soil NH4-N](#)

[Soil NO3-N](#)

[CO2-C Evolved](#)

[Net Mineralization \(>0\) and Net Immobilization \(<0\) vs Days](#)

[Denitrification](#)

[Total Immobilization](#)

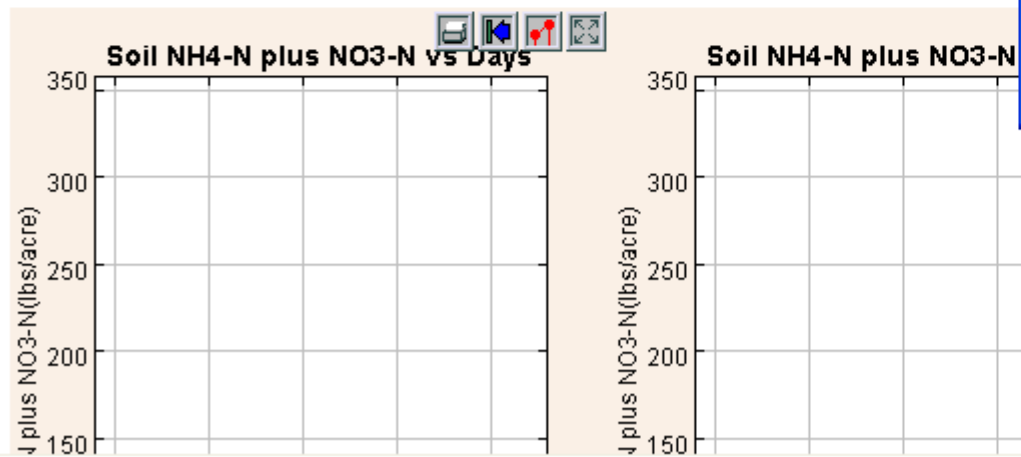
[Total Mineralization](#)

[Total and Net Miner./Immobil.](#)

[Soil NH4, NO3 and Denitrification Combined](#)

[Potential Mineralizable N and Residue N](#)

Generated Graphes are Simulation of 180 Days



Factors Selected - Microsoft Internet Explorer

Management And Soil Conditions		
Conditions	Left (Default) graph	Right (User Selected) Graph
Initial SOM	2.0%	2.0%
Initial Soil NH4-N	15	15
Initial Soil NO3-N	50	50
Residue Amount	4.5 Tons/Acre	4.5 Tons/Acre
Residue Type	Corn	Corn
Soil Temperature F(C)	77(25)	95(35)
Soil Water Content (% *WFPS)	60	60
Tillage	No Till	No Till

\*Water-Filled Pore Space; Unit: lbs/acre unless specified

Close Window



[Denitrification](#)

[Total Immobilization](#)

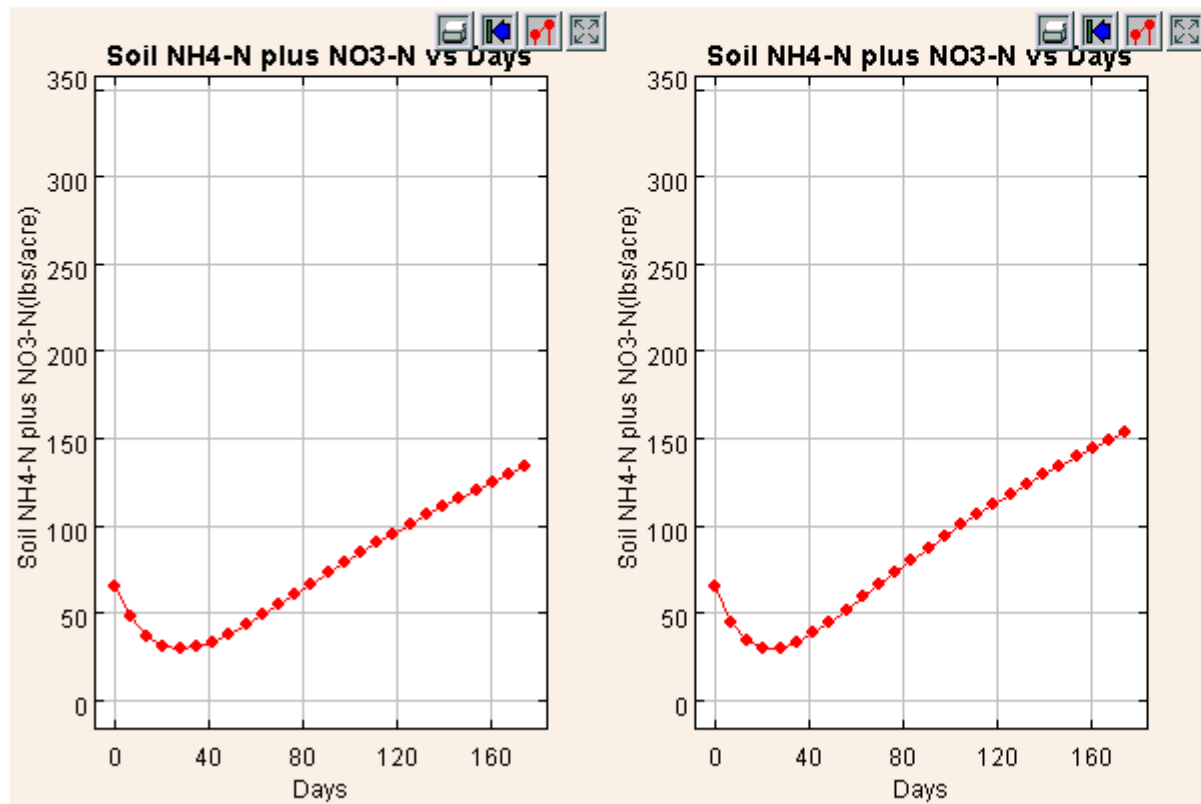
[Total Mineralization](#)

[Total and Net Miner./Immobil.](#)

[Soil NH4, NO3 and Denitrification Combined](#)

[Potential Mineralizable N and Residue N](#)

### Generated Graphes are Simulation of 180 Days





## Livestock Grazing Distribution



### Livestock Grazing Management

- Livestock Grazing Management
- Module 2
- Glossary
- Animations
- Login Request
- Lost Password
- Quiz
- My Progress

### Livestock Grazing Distribution

#### Introduction

The 23 million acres of rangeland in Nebraska are mostly **grassland** and are primarily devoted to forage production for Nebraska's multibillion dollar beef cattle industry. Nebraska's rangelands are inherently productive, and potential returns from efficient management practices are high for livestock producers.

Proper **grazing distribution** is a factor which can increase livestock production from Nebraska's rangeland. **Grazing distribution** refers to dispersion of grazing animals over a management unit. It is just one element of good grazing management which should also include proper stocking rate, season of use, kind and proportion of livestock, and grazing system. Areas within pastures that are consistently not grazed or only lightly grazed may significantly impact the economic efficiency of range livestock enterprise.

Ideal grazing distribution of livestock occurs when proper **utilization** extends uniformly

rew stop play

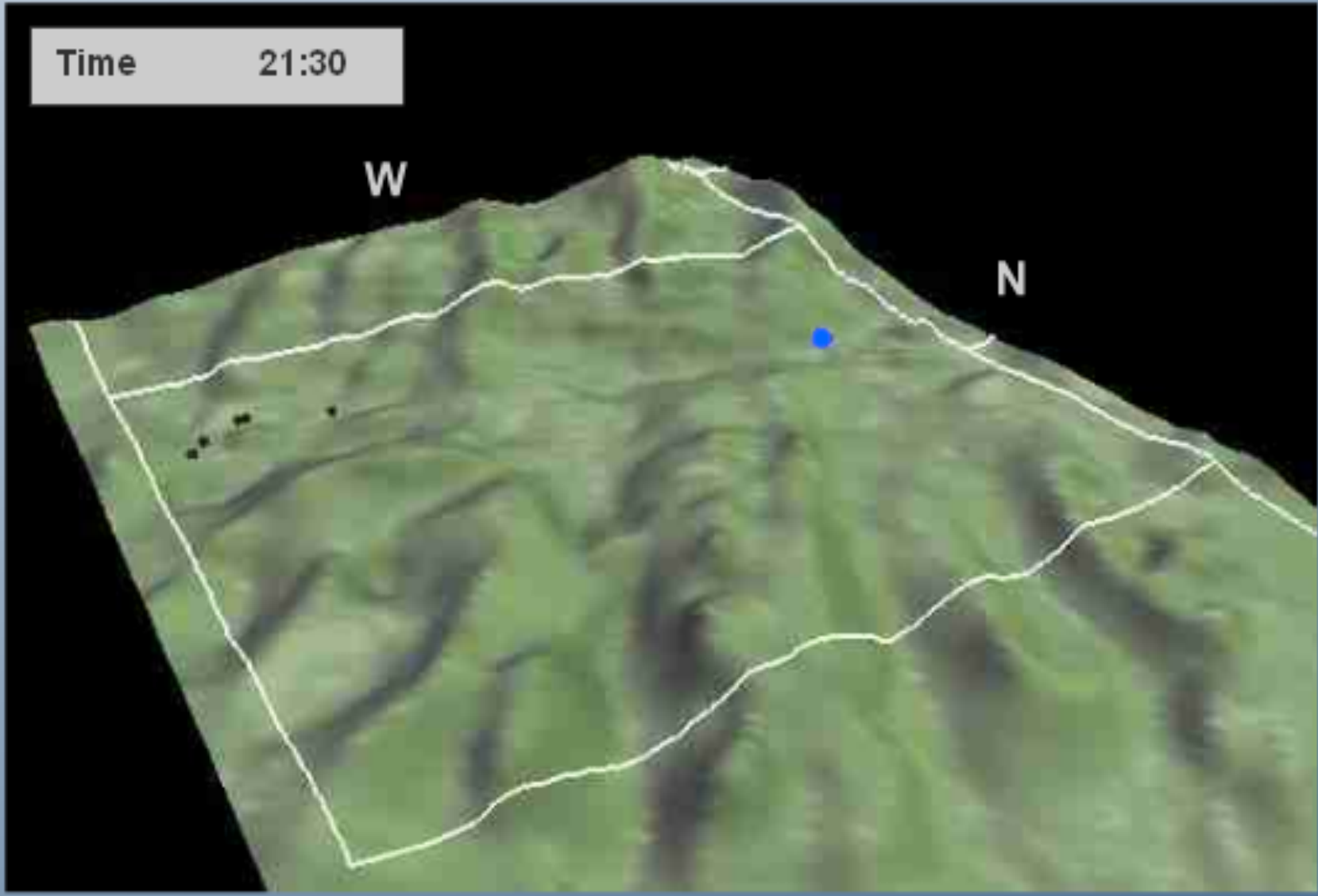
Start At

00:00

End At:

00:00

Time 21:30



# Library of Crop Technology Lesson Modules

## NAVIGATION

- HOME
- LESSONS
- USING LESSONS
- HISTORY OF PROJECT
- ACKNOWLEDGEMENTS
- LICENSES
- DOWNLOADS
- REVIEW
- PROFESSIONAL SOCIETIES

Learn about the science behind crop technology topics:

### Lessons



- Genetically engineering a crop
- Herbicide mode of action
- Plant biochemistry
- Nutrition & biotechnology
- High school crop genetic engineering
- Others....

Check out some of our most popular resources.



# Library of Crop Technology Lesson Modules

Advanced Backcross Breeding:

## Introduction to Backcross Breeding



### NAVIGATION

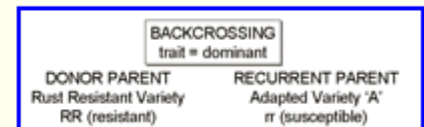
- HOME
- LESSONS
  - Animations
  - Quiz
  - Glossary
  - My Progress
  - Login request
  - Lost Password
  - Contact Instructor
  - FAQ
- USING LESSONS
- HISTORY OF PROJECT
- ACKNOWLEDGEMENTS
- LICENSES
- DOWNLOADS
- REVIEW
- PROFESSIONAL SOCIETIES

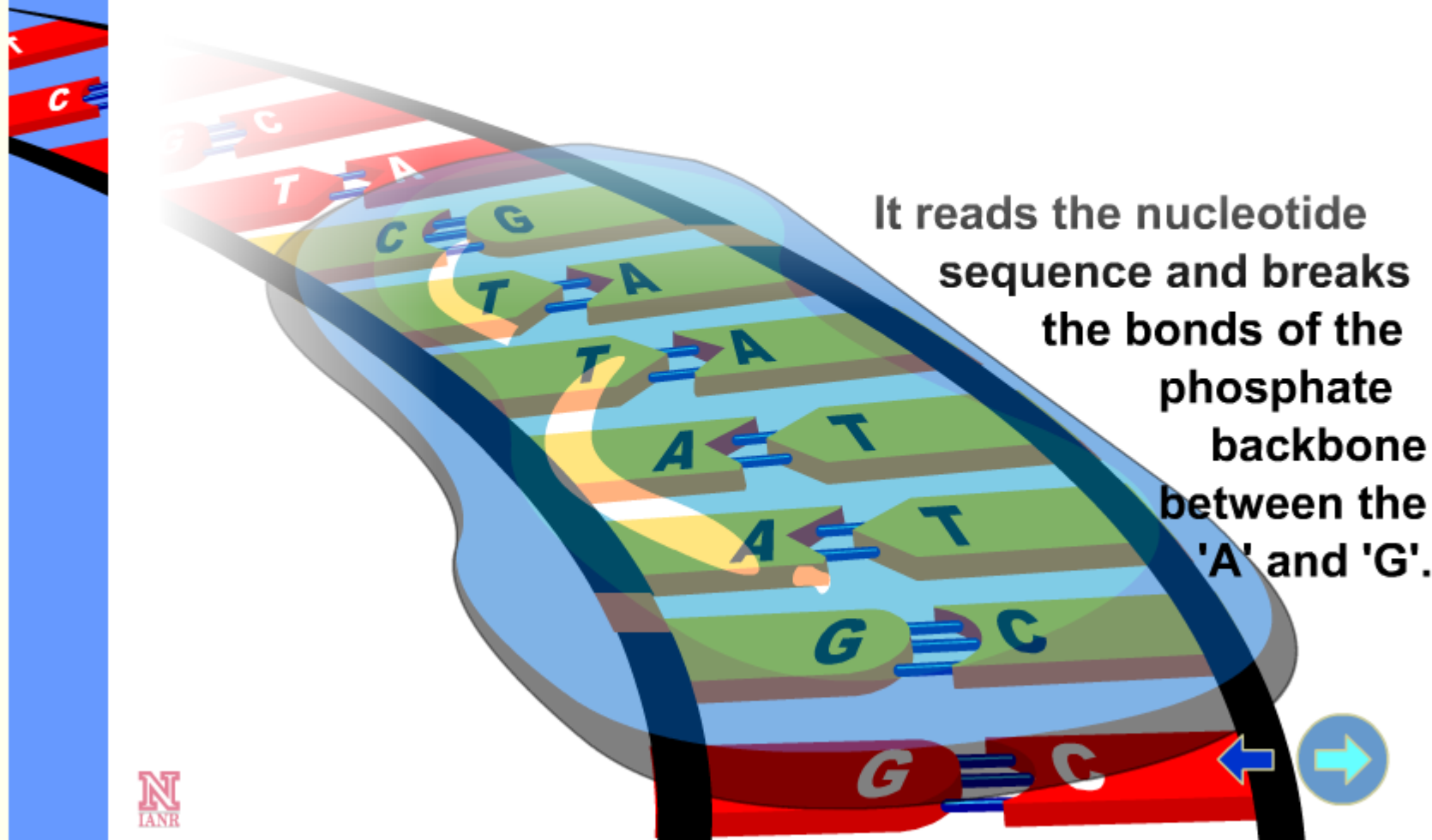
With all of the advances in molecular biology, it may seem surprising to find out that traditional plant breeding methods are still needed in the development of plant varieties. Today, the **backcross** procedure is most often used to move a **transgene** from a good **tissue culture variety** that was used in **transformation** to an **elite** experimental **line** or variety. It turns out that for many crops, once the transgene is in the crop species **crossing** is more efficient than transformation procedures. Backcrossing is more efficient than **transforming** the elite line because most transformation protocols are optimized for a specific (often poorly adapted and lower yielding) laboratory line. Many elite **lines** (which are high yielding) are not amenable for transformation. Hence genetic engineers transform their lab line and breeders backcross the transgene from the lab line into the elite line.

In this lesson the focus will be on the backcross method, which is a form of recurrent hybridization (repeated crossing to a single variety) where a superior characteristic may be added to an otherwise desirable variety. In this method the breeder has considerable control of the genetic variation in the **segregating population** in which selections are to be made. The backcross method has been used extensively for transferring **qualitative characters** (characters with clear phenotypes that are easy to identify in **cross** progeny) such as disease resistance. It is effective in both self and cross pollinated crop species. To better understand the applications of backcrossing, the **gene** for leaf rust **resistance** in wheat will be used as an example. Figure 1 shows the visible symptoms of leaf rust in susceptible wheat. The top and third from the top leaves are susceptible, while the other two are resistant. Figure 2 illustrates how the backcross procedure can be used to move leaf rust resistance (RR, Rr) from one variety to a susceptible variety (rr).

Insert Figure 1

The actual procedure for back crossing is almost self-explanatory. In back crossing you have a (has a gene of interest) and a





It reads the nucleotide sequence and breaks the bonds of the phosphate backbone between the 'A' and 'G'.



**AMERICAN  
DISTANCE  
EDUCATION  
CONSORTIUM**

**What's New**

**In the News**

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**ADECaucus**

**Privacy Policy**

**Security & Privacy**

**Program Catalog**

**IDEAL**

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

# Advanced Internet Satellite Extension Project (AISEP)

## [The National Science Foundation](#)

### Cooperating with:

[NSF Advanced Networking Computer Science & Engineering \(AN-CISE\)](#)

[A Report to the National Science Foundation: An ADEC National Videoconference](#)

June 24, 2003, 2:00pm - 4:00pm Eastern Daylight Time

*Streaming video of the entire videoconference and all individual segments.*

[ADEC April 2, 2003 Video Conference](#)

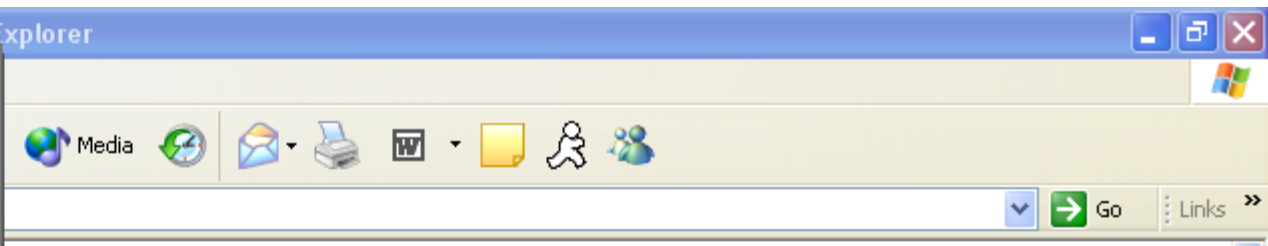
Streaming video of the entire videoconference and all individual segments

### Project Description

- [Discussing Digital Inclusion](#) *Dr. Janet Poley, President, ADEC.*
- [Project Summary](#) *(PDF Format)*
- [Question & Answer Document](#) *(Sent March 31, 2000 from Dr. Janet Poley to Dr. William Decker, NSF)*

### • Lead Institutions and Institutional Contacts

- University of California, [Bob Sams](#)
- University of Illinois, [Ken Spolko](#), [Jim Hamilton](#)



## April 2, 2003 Videoconference

Following are the links to the April 2, 2003 ADEC Videoconference.

[Complete ADEC Videoconference \(~ 2hrs.\)](#)

Or watch the following segments of the conference:

[1. Welcome, Overview, Purpose](#)

Jan Poley, ADEC President/Project PI and  
Dan Cotton, University of Nebraska-Lincoln, Applications Coordinatator

[2. Project Overview, Local Sites, Project Research, Tachyon Partnership](#)

Kevin Gamble, ADEC Chief Technology Office and Project Director

[3. How do people use the Internet?](#)

Jan Poley, Brief from National Studies

[4. Educational Effectiveness Research and Capacity Building with Local Sites](#)

Resources for local sites and training  
Valorie McAplin, Associate Dean, University of Maryland-College Park  
Roger Hiemstra, Consultant, University of Maryland







Caucus Center



 [Caucus Center](#)

You are [Dan Cotton](#).

[Caucus Tips](#)

1. **Your Personal Conference List:** [read all new discussion](#) in your list, or [edit your list](#).

Conference name:	# of Items with New discussion
<a href="#">Multicast Best Practices</a>	3
<a href="#">Networking Best Practices</a>	9

2. **Other popular conferences:**

[Demonstration](#) (not a member) Examples of ways caucus can be used

3. [A list of all conferences](#)

4. Type a conference name:  and press

Caucus version 4.40 / i 50 is a product of [CaucusCare](#). Your browser is MSIE 6.0 on Windows XP.

- [Adec](#)
- [Adec Described](#)
- [Adec Estore](#)
- [Ag Telecomm Collaboratory](#)
- [Anticipating The Future](#)
- [Best Practices For Distance Education](#)
- [Choices For Collaboratories](#)
- [Collaboratories Abstracts](#)
- [Conferencing Explained](#)
- [Demonstration](#)
- [Distance Education Policy Collaboratory](#)
- [Educational Effectiveness](#)
- [Extension Collaboratory](#)
- [Future Of Distance Education](#)
- [General Discussion](#)
- [Interface Storage Adec11](#)
- [Interface Storage Cc44](#)
- [Monterrey Collaboratory](#)
- [Multicast Best Practices](#)
- [Networking Best Practices](#)
- [Professional Development And Capacity Building Collaboratory](#)
- [Sandbox](#)
- [Technological Research And Development Collaboratory](#)
- [Think Tank Collaboratory](#)

- ADEC Collaboratory Testing
- What is ADEC adn what does it do?
- Discussions related to the ADEC eStore
- Agricultural Telecommunications Program Development Collaboratory
- A short course on how to anticipate future trends and issues
- What distance education practices work best?
- Deciding which collaboratory method is appropriate
- A series of abstracts on progress in each collaboratory
- Learn about computer conferencing
- Examples of ways caucus can be used
- Distance Education Policy Collaboratory
- Methods of making education effective
- e-Extension Collaboratory
- What is the future of distance education?
- General distance education issues that don't fit in other conferences
- Special configuration conference - not a real conference
- Monterrey Conference Collaboratory
- Development of Best Practices for Multicasting
- Making LANs and WLANs work with Tachyon hardware
- Collaboratory on Professional Development and Capacity Building
- A place to experiment with different formats and types of entries
- Technological Research and Development Collaboratory
- Collaboratory - Think Tank



# ADEC Projects

- ◆ International partnerships
- ◆ Wireless Internet
- ◆ Digital Broadcast Channel/s
- ◆ International Teleport
- ◆ Quality Programs
- ◆ Lifelong Learning
- ◆ Workplace Education
- ◆ Collaboratories - research - science

# Contact ADEC

- ◆ Dr. Janet Poley, C218 Animal Science, P.O. Box 830952, Lincoln, NE. 68583-0952
- ◆ Voice: 402-472-7000
- ◆ Fax: 402-472-9060
- ◆ e-mail: [jpoley@unl.edu](mailto:jpoley@unl.edu)
- ◆ web: <http://www.adec.edu>