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Final Report

ADEC/USDA China Scientific Exchange
March 2007

Exchange Goals

• Review existing distance education programs focused on reaching rural audiences.
• Review technology adoption, access to bandwidth, and Internet use.
• Identify possible collaboration opportunities.

Sponsors

• USDA Foreign Agriculture Service
  Research and Scientific Exchanges Division
  International Cooperation and Development Department
• American Distance Education Consortium, and specific member institutions:
  Oregon State University
  University of Nebraska
  New Mexico State University
  University of Minnesota
• China Ministry of Agriculture
  In-country support and organization

Team Members

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Itinerary

March 17-21, 2007  Beijing
March 22-25, 2007  Kunming, Yunnan Province
March 26-29, 2007  Shijiazhuang, Hebei Province
March 30-31, 2007  Beijing

Meetings

Beijing

Ministry of Agriculture

• Cao Haijun, Division Director, Center of International Cooperation Service
• Lin Luogeng, Vice Director of Cooperation Service
• Central Agricultural Broadcasting and Television School, National Farmer’s Science and Technology Training Center
• Zeng Yichun, Exec. Vice Director and Vice Pres., Professor
• Li Fang Hong, Vice Director for International Cooperation
• Qi Guo, Director of Supervision and Research Division, National Farmer’s Science and Technology Training Center
• Shao Mingxu, Vice Director for WEB-based education, National Farmer’s Science and Technology Training Center.
• Meng Fan, Director of School Newspaper and Magazine Division, National Farmer’s Science and Technology Training Center
• Chen Hui, Director of Instructional Design Division, National Farmer’s Science and Technology Training Center

U.S. Embassy

• Jorge Sanchez, Agricultural Attaché

China Agricultural University, e-College (Continuing Education)

• Wu Jiazhi, Administrative Dean, School of continuing Educations, CAU
• Cao Zhaohong, Vice Dean, School of Continuing Ed CAU
• Wang Ying, Vice Dean, School of Continuing Ed. CAU
• Min Zhang, Program Officer, International Relations, CAU

CAU-EDU.net Network College

• Gu Pei De, Vice Dean, Network College
• Liang Shu Hua, Vice Dean, Network College
U.S. National Science Foundation, Beijing office
• William Y. B. Chang, Ph.D. Director NSF

Chinese Academy of Agricultural Sciences (Agriculture Information Institute)
• Yang Xiu, Deputy division chief
• Meng Xianxue, Deputy Director General
• Pi (Peter) Jiezheng, Director of Information Services

Beijing Branch School of CABTS
• Li Fang Hong, Vice Director for International Cooperation (CABTV)

Kunming

Yunnan Provinical Department of Agriculture
• Zhou Kailian, Director, Sr. Researcher, Foreign Affairs & Foreign Funds Utilization Office

Yunnan Provinical Agricultural Vocational Technical College
• He Ming Dong, President
• Zhao Qian, Vice Director of Basic Section

Yunnan Provinical Agricultural Information Center
• Mark Tu, Director, Ag Information Center

Yunnan Provinical Agricultural Broadcasting and Television School

International Development Extension Resources/Kunming Shengkai Nongye Linye Fazhen Gongezi
• John Langston, Director & Agriculturist

Danyun Business Affairs Consulting Co., Ltd
• Don Lytton, Ph.D., Vice General Manager, Director of Partner Development
• Ren Shao Hui, Enterprise Development Consultant

Yunnan Agricultural University
• Li Cheng-Yun, National Center of Agro-biodiversity
• Wangyun Yue, Professor, head of Plant Pathology

Village of Dapingde, Yunnan Province
Shijiazhuang City

Hebei Agricultural Broadcasting and Television School
- He Jian bin, President, Hebei, ABTS
- Zhang Huimin, Vice President of Hebei ABTS

Hebei Provincial Agricultural Department
- Zhang Qiusheng, Vice Director, Office on Foreign Fund, Ag. Development
- Shi Jianxin, Vice Director, Agri-Information Center of Hebei Province
- Zheng Jilu, Vice Chief, Ag Bureau of Baoding City, Hebei Province
- Han Jincai, Division Chief, Ag Department of Hebei
- Liu Suiyin, Deputy Director, Ag Department of Hebei

Hebei Department of Plant Protection
- Zhang Shumin, Vice Director & Research Fellow
- Li Yuehua, Technology Director

Xinji City

Rural Loudspeaker Program

Gaocheng City

Agricultural Integrative Service System

Beijing

University of Florida Center for International Studies
- Dr. Sherman Bai, University of Florida, Center for International Studies

General Observations of China
- Significant change has taken place in the past 25 years
- Heard positive characterization of current Chinese leadership as pragmatic with good management skills
- Large cities had a very western feel, flooded with cars, new building and transnational businesses (especially retail)
- Not all areas of China are experiencing the same levels of monumental growth
- Eagerness on the part of those we visited with to learn more about different methods from other countries
General Background about Agricultural Distance Learning in China

Target Audience

• 800 million farmers in a population of 1.4 billion

• Many rural residents are unregistered to work in cities. This includes: Rural youth, grass-root cadres, agricultural technicians, rural women, minority ethnic groups, and farmers.

• Current agricultural revenue generation capability on available land may only adequately support 300 million farmers—the Chinese government appears motivated to use technology to promote educational opportunities that will improve the economic viability of people in rural areas. (Part of the focus continues to be on direct support for agricultural production, but part is also focused on topics or courses that help increase income in non-agricultural production areas such as services.)

• MOA focused on distance learning topics or courses that help improve production capability as well as increase income in non-agricultural production areas

• Relatively small amount of tillable land (with increasing loss of some of the best land to urban/industrial development)

• Major disparity in income and quality of life between rural agricultural workers and urban manufacturing and professional workers

• Benefits and social safety net based on being officially registered in a specific municipality—receiving an education or diploma/certificate is the fastest path a Chinese village resident can take to become officially registered in a municipality, which offers them more financial possibilities.

• Limited literacy among older part of the population

• Limited farmer ability to transport goods

• Limited at-home access to computers and the Internet

Issues Motivating Chinese to Focus on Distance Learning

• Concern about disparity between rural and urban residents’ ability to earn adequate money

• Desire to increase the productivity of workers who remain in agriculture

• Interest in moving some agricultural workers to urban service (domestic work, hairstyling, etc.) and manufacturing jobs (Rural Labor Transfer Program)

• Serving everyone from the non-literate to those pursuing a university degree

• Provide both immediate agricultural information as well as more structured educational programs (diploma and non-diploma)

Two important areas of distance education:

• Workforce Development (non-diploma)

• Continuing Secondary and Higher Education (diploma)
Typical modes of distance learning:

- Television (12 hours a week on CCTV channel 7)
- Radio
- Audio cassettes
- Video tapes
- VCDs (1000 titles)
- DVDs
- Satellite video (335 receive sites)
- Internet—websites, search indexes, and multimedia
- Cell phone text messages (database of 53,000 text messages)–Mobile phone networks have “leapfrogged” land-line services to reach some rural areas with their first telephone service
- Newspapers and periodicals
- Computer touch screens
- Telephone-based automated information systems
- Telephone-based “ask the expert”
- Web-based “ask the expert”
- Web-based plant diagnostic databases
- CD-ROM
- Last mile methods
- Agricultural science dissemination vehicles (150 sites to deploy from)
- Science and technology libraries for farmers (2,100 locations)
- Loudspeakers (6,000 sites)

Issues facing rural development and education (according to CABTS)

- Investment in farmer’s education is insufficient
- Teaching staff capacity awaits further enhancement
- The farmers’ “positivity” toward educational training is low
- The educational resources are still lacking

Central Agricultural Information and Education Agencies and Institutions—Beijing

Central Agricultural Broadcasting and Television School

- 26 years in service
- Five-level school system
- National center in Beijing
39 provincial schools
339 prefecture (city) schools
2,182 county schools
12,000 township teaching stations
More than 46,000 tutors
335 satellite receive sites
4,000 agriculture science/technology libraries for farmers

The CABTS key mission (since 1980) is to use distance education to train farmers. They offer secondary, post-secondary, and higher education, both diploma and non-diploma programs. CABTS produces VCDs, videotapes, books, newspapers, magazines, satellite TV, radio—potential reach is 100%. They produce a daily half-hour agricultural program on nationwide CCTV Ch. 7 that has the potential to reach 70% of population. They produce MP3 audio used for loudspeaker program in villages. They are interested in using text messaging to send information to farmers (given large market penetration of mobile phones)

Sponsored educational programs involve both mediated/distance and face-to-face. Some farmers can get on Internet through learning centers in rural areas. The programs include diploma and non-diploma education - secondary, post-secondary. Non-degree programs include: green certificate, vocational skills, professional qualifications, agriculture applicable tech training.

The CABTS Goal: Increasing capacity and income of farmers and rural residents reliant on agriculture.

**China Agricultural University e-College**
- Delivers through radio, TV, Internet
- 40 teaching centers
- 50 network centers
- 20,000 students
- Works closely with CAU-EDU.net (public/private partnership) CAU responsible for learning opportunities, CAU-EDU.net provides tech support, course development, course management.

CAU e-College has a wide range of educational services from educating government staff to going to villages for face-to-face train-the-trainer. They offer diploma education and non-diploma programs.

There are 17 branch colleges, 67 branch schools; 40 CAU-supported teaching centers (attracting diploma-oriented students); more 50 network centers (focus on learner from distance perspective, same level certificate granted from both). They serve 20,000 students. Delivery is face-to-face blended with radio, TV, Internet.

**CAU-EDU.net**
CAU-EDU.net was established as a public/private partnership in 2001. CAU cooperates with private company to form CAU Network. CAU is responsible for educational content. CAU-EDU.net provides tech support, course development and course management. They are expanding their relationships in China to include six to eight additional universities.
Content areas include: land resource management, vet medicine, gardening, rural economic development. They added 10,500 new students in 2006 for a current total of 25,000 students. Most are in 26-40 age range and the largest age range is 36-40 age range.

They use multiple teaching methods—self-paced, group, satellite, Internet, VCD. Students who can not access the network use paper, but computer use is growing rapidly. They use the 67 CAU study centers for face-to-face and proctoring exams.

CAU-EDU.net uses Web-based conferencing software (very similar to Adobe Connect) developed domestically in China. It provides some instruction as well as a video meeting system over Internet, discussion forums, and access to instructors to answer questions.

Major investor is China Education Company and Internet Digital Group (IDG). They said an IPO will happen at end of 2007 to and hope to raise $10 millionUSD.

**Chinese Academy of Agricultural Sciences**

- National Agricultural Library
- Agricultural Information Institute
- National Ag Science Data Center

These subsets of the CAAS conduct agriculture information research and engage in collection and dissemination of agricultural science and technology. Their focus is research information technology application in agriculture, agriculture information management and analysis.

NAL has 2.1 million copies of books and journals. National Ag Science Data Center (www.agidata.cn), edits and publishes journals, and has cooperative efforts with more than 40 countries. They are working on projects to provide web-based decision keys (for plant diagnosis), text/chat access to experts/librarians, delivery data via cell phones, and Internet websites. They maintain an agriculture search engine (database of 7,000 websites and full-text index.) They have developed programs that display on television; an online public access catalog; e-books, electronic journals, document delivery (order full text, scan TIFF/PDF), electronic reference (form-based and real-time), subject-oriented websites in food and nutrition, water-saving agriculture, agricultural pollution, etc.

**Provincial Agricultural Information and Education Agencies and Institutions—Kunming, Yunnan Province**

**Yunnan Department of Agriculture Information Center**

This is the technology extension of Agricultural Dept. of Yunnan Province (set up in 1999). They include 23 staff, four divisions in technical extension, information management, and system management.

The main functions include provincial information agricultural guidance and training; operation of provincial information platform and network and security of website. The website offers guidance to agriculture producers, gathers survey information for policy development, provides marketing information, and provides science and tech communications. The satellite/video, conferencing system—two-way between Ministry and Provincial—may soon expand to townships to serve as a rural channel for agriculture producers.

The system is user-accessible with more than 200 private organizations registered to provide marketing and other information directly via Department of Agriculture website. They have voice service, a television production center, and are starting a text message project with the China national cell phone service provider.
Yunnan Provincial Broadcasting and TV Schools

ABTS at the provincial level in Yunnan is working to integrate broadcasting and satellite TV (13 satellite stations); along with rural education facilities and national and regional data networks. They are part of the five-level organization from central to network edges (noted above in CABTS.) A major goal is to bring information into village level. They provide secondary education and higher education as noted with CABTS. They also cooperate with CAU. Facilities include: 126 branch schools, 13 satellite stations, 3000 teachers; 172 stations in the village libraries, CDs. They are trying to increase production of VCDs available for use in libraries and increase the number of libraries in villages.

As do most provincial level systems, Yunnan ABTS specializes in education of farmers and training for grass-roots cadres.

Yunnan Agricultural Vocational Technical College

Opened in 1904 and the College currently has about 4,000 students. They are increasing their emphasis on Internet-accessible education. This is a campus analogous to a community college in the United States. It provides local instruction on variety of topics from computer use to agricultural practices.

Yunnan Agricultural University

The scientific team described their ground-breaking work on controlling blaster fungus in rice with unique planting and inter-cropping. Their Biodiversity Center has gained significant international recognition because of this research.

Danyun Business Affairs Consulting Co., Ltd (NGO)

Danyun is a Danish for-profit company and is the only identified “Fair-trade” company in China that is recognized by the United Nations. They provide rural economic development programs and training. Company scope includes:

• Export of Yunnan products
• Business training and consulting
• Cultural liaison
• Rural economic development

Danyun works at village level. They focus on helping fund start-ups in Agriculture and rural development. As an example, during a six-year period Danyun used the Internet and e-business practices to help develop a small handicraft project—Threads of Yunnan—that began with six women and has grown into a sustainable enterprise which has brought income and training to 250 women living in the remote villages of north central Yunnan Province. Danyun returns 10% of the gross sales to the women.

As part of the project, the women receive training in:

• Design
• Nutrition and hygiene
• Leadership and community life issues
• Money management
Danyun has developed a set of specific on-line tools (threads_of_yunnan@pobox.com) that help marketing the weaving and stitching including:

- Homepage
- Catalog
- Shopping
- Information

According to Danyun representatives, basic lessons they have learned apply to possible future efforts:

**Without the Internet a small company in the handicraft sector can not be successful beyond a certain (low) level. Competition is too great in the local market and proper profit margins are too low to afford to pay someone else to develop the business outside the local market. The Internet allows low cost entry into foreign markets.**

**Sharp e-business practices go beyond the computer. A good product at a good price, with reliable delivery and after-sales service is essential. No Internet bells and whistles can make up for a lack in these areas.**

**A small company must be bold and decisive in using the Internet.**

**English language skills and the appropriate cultural understanding are necessary to successfully use e-business for international sales.**

**Observations in Dapingde—a natural village**

- Dapingde—a Miao minority peoples village—visit arranged by Danyun Company
- Rural village, electricity but no land line telephone (some cell phones)
- Electricity not always reliable for the entire day
- VCD player, two satellite TV dishes
- No Internet access, but two computers (one functioning)

Villagers were concerned about the quality and information about this year’s corn seed obtained at the fall farmer’s fair down the mountain. Where would they get more useful information? Would they trust the Internet more than the seed sellers at the fall fair? The answer was yes. Part of the Danyun project to help Miao women sell their stitching on the Internet. The world is flattening very fast.

There is also a great eagerness on the part of the adults of the village for their children to learn Internet skills. The villagers have satellite connections for TV—although reception is snowy. However, many of the agricultural TV programs seen on our itinerary were considered unrelated to the “small plot” style of farming they conduct. (They still plow with animals and spread chemicals and harvest by hand.)

**International Development Extension Resources/Kunming Shengkai Nongye Linye Fazhen Gongezi—John Langston, Director & Agriculturist (NGO)**

The center focuses on local development projects in rural villages. They are concerned about appropriate use of technology (e.g., most educational media materials are not designed for small village use; most content assumes greater resources, larger farms, different terrain, etc.). They identified major needs for content in rural villages would be for health information, basic agriculture information, appropriate agriculture technology.
Provincial Agricultural Information and Education Agencies and Institutions—Shijiazhuang City, Hebei Province

Hebei Province Agricultural Broadcasting and Television School

ABTS in Hebei has 11 city level schools; 148 township schools; 1,000 instructors teaching classes at village level. They offer diploma and non-diploma programs for 30,000 students.

Delivery includes correspondence, books, VCDs, cassettes, radio and TV, and multimedia technology using their computer network. Many students use a combination of these delivery methods.

They employ unique loudspeaker systems in villages that play MP3 digital downloads about timely agricultural practices that are developed locally and in Beijing at CABTS (see below.) Other content development includes radio broadcasting, television broadcasting (128 AV studios).

They also have several rural Integrated Hall Service Systems (agriculture consultation, phone messages and consultation, computer touch screen, VCD library) with the ability for learners to select information as needed on-site in rural areas. Course support for learners includes student support via Internet BBS, chat, e-mail. Teaching centers give exams. The Hebei ABTS also has an established partnership with Tsinghua University.

Hebei Agricultural Department of Agriculture Information Network

This network runs a 2 Mbps data network connecting 11 city level locations (those locations responsible for reaching village level) and 138 towns.

Network responsibilities include:

- Ensure network security
- Maintain databases
- Run provincial agriculture website
- Collect, edit and publish agriculture information for province on web
- Provide analysis of marketing supply and pricing of agriculture goods
- Maintain and use TV production facilities for broadcast
- Cooperate with MOA on receiving satellite programs
- Provide cell phone text messages (9 cities have their own services)
- Operate information service vehicles with computers and technology that visit more developed villages when needed
- Disseminate information via email subscription
- Provide MP3 audio files for loudspeaker broadcasting service in villages
- Disseminate information from other agriculture agencies and associations
- Support work of integrated delivery halls (computer, touch screen, telephone messages and expert consultation, VCD library) at township level

There are 163 agricultural information websites in province that have been developed based on initial template from the Hebei Agriculture Information Network staff.
Xinji, Rural Loudspeaker Program and Learning Center

- Rural Loudspeaker program
- MP3 files e-mailed to rural villages
- Played on loudspeakers (creative approach to last-mile wireless.)
- Rudimentary soil lab
- Lecture room
- Chalk Board for two-way exchange of the latest information
- VCD viewing
- Bulletins
- Seed and fertilizer to buy

This is a village level station within Shijiazhuang City (“city” is more like a county in the United States.) At this rural site they provide regular trainings for farmers to enhance their understanding of timely issues that affect what they are working on at that time.

The facility is housed in a store-front building that sells agricultural chemicals, seed, and other products. But it also has a training room upstairs, provides the loudspeaker/MP3 broadcasting (morning, noon, evening for 10-20 minutes each), has books, magazines, DVDs, VCDs, and an outside blackboard. Farmers use the blackboard for loudspeaker schedules and to write questions which are then answered by local experts. The facility has a 1 Mbps Internet connection. There is a very basic soil lab upstairs for soil testing.

Gaocheng, Agricultural Integrative Service System

- Integrated TV, radio, computer systems
- Satellite conferencing from around the country
- Touch screen information
- Room to view VCDs/tapes
- VCDs to check out
- Bulletins
- Seed and fertilizer for purchase
- Telephones at information desk for recorded messages or to contact an expert

This is a sophisticated AV Production Facility and Integrative Learning Service facility. It includes TV productions capability—they produce and broadcast locally a 10-minute television program with heavy on-location content on Wednesday and Saturday repeating on Thursday and Sunday.

They also run telephone system with live “Ask the Expert” help and prerecorded messages. They have a scientific vehicle that goes to villages for training and access to additional information. They locally maintain a website for Internet access to the database of available information.

The facility, which also serves as a store front for agricultural products like seed and chemicals, has a video satellite room (used 2-3 times/month) that connects in real time to 13 Integrated Information Center halls in Hebei and other sites around the county.

On-site they provide print, touch screen kiosks, VCD viewing/sales, telephone ask-the-expert, telephone digitally recorded messages. According to local officials there are 80-100 centers like this in Hebei province.
Department of Plant Protection, Shijiazhuang City, Hebei Province

Within the context of plant protection, this facility provides Internet-based “ask the expert” service for farmers (10-minute online response and posting); along with diagnosis of pest problems. Their main communication methods include:

- Text messaging subscriptions for 100,000 – 200,000 farmers;
- TV programs (city and township level TV);
- Touch screen kiosks.
- Website-accessible pest information
- 502 local service access stations
- Video for online Web access—10 video production centers in province

They are aggressively working to enhance their website as a system of pest diagnosis for farmers. They are developing this diagnostic system in conjunction with Chinese People’s University in Beijing. Internet speed in this suburban facility is 1 Mbps.

Observations from the Team

Based on the issues noted above and from a variety of individuals we met, the team made some basic observations:

- The hierarchy of the MOA supports a channelized communication system.
- Information comes from central locations out to learners/users. The system might be strengthened by more emphasis on learner-driven selection of topics taught.
- Reports of rapidly expanding Internet access in China appears to be true, but also may be deceiving because of the large and as yet, mostly unconnected rural audience.
- Dial-up access is predominant and as expected, too slow and unreliable to meet the needs of many of today’s distance technologies. Many “connections” counted in China’s overall Internet coverage may include these dial-ups.
- Some outreach organizations in China use cell phone-delivered information channels for short bits of information, such as weather or market prices. But text messages do not lend themselves to in-depth or personalized distance education. Also, because there is a separate character for each word, farmers may not always understand the technical words that would be used in a text message about some new disease or chemical treatment, for example. When broader Internet access becomes more common in remote agricultural areas, more information will be available to farmers with less education (or those who can understand audio or video messages, but simply may not know the Chinese characters for the needed-words in the description.)
- Many, but not most, farmers have cell phone access, meaning service seems available even in rural areas.
- Much of the most visible current efforts at distance education are audio/video based.
- Domestically developed Web conferencing software is making inroads. Hybrid satellite/Internet connections take advantage of existing satellite infrastructure in evolution.
- Some of the most sophisticated development is occurring in a public/private partnership (CAU-EDU.net) that is using Web conferencing software for classes—10,500 new students in 2006.
General Thoughts on Opportunities

- There are opportunities for collaborative training of Chinese faculty moving into distance teaching.

- CABTS has cooperative programs in Canada, Australia, Holland and Thailand. They also work with International Council of Open and Distance Education (ICDE,) Asian Association of Open Universities (AAOU,) the Food and Agriculture Organization (FAO) of the United Nations, and the United Nations Educational and Scientific Culture Organization (UNESCO) but no projects or agreement in the United States.

- CAAS has numerous exchanges and joint projects under discussions with U.S. universities.

- CAU e-College showed significant interest in student oriented exchanges programs that would bring students to China as well as offer Chinese students opportunities in the United States.

- Chinese government appears to have money to invest in programs they believe will benefit the agricultural sector.

Relationships are the bottom-line

- The final meeting for the exchange team was with Sherman Bai, University of Florida professor and director of the UF Center for International Studies in Beijing. There appears to be a significant benefit to having an on-site location, experience within the culture, and understanding of the “relationships issue.”

- From Dr. Bia’s perspective, what benefit we accrue for ADEC member institutions will come slowly as we continue to build the required working relationships that ensure success in Asia. Success will depend on additional relationship building visits and exchanges. There is a good possibility of a relationship building conference pairing US visitors with Chinese practitioners, and or an on-going ADEC presence or liaison in the country. According to Dr. Bai, it is very difficult to develop a program if you do not have “on the ground” continuous presence in China.

Opportunities for Collaboration for ADEC / Next Steps:

- Additional USDA-sponsored technical exchange teams to continue to build required relationships “on the ground” in China

- Plan a conference in Beijing to address agricultural distance education (seemed to be a lot of support for this option)

- Offer training on distance education “best practices” to Chinese counterparts (RFP for contract training)

- Set-up a method/process to make it easier for U.S. universities to partner with Chinese institutions in offering individual courses via distance

- Provide a list of classes that ADEC could make available (translate list into Chinese)

- UF offered some specific collaboration opportunities:
  - Participation by other U.S. colleges and universities in the advanced manufacturing center research
  - Teaching classes via their partnership with Hunan college
  - Explore a formal relationship with University of Florida’s International Studies Center in Beijing and Sherman Bai to provide ADEC an official presence on the ground in China.
  - Explore possible relations with National University of Modern Distance Education Cooperative Group—a consortium of 68 Chinese university members focused on distance education apparently similar to ADEC. http://www.tsinghua.edu.cn/docs/jpc/yxz/
Other ideas (but would likely present greater challenges)

• Provide a model of connectivity—small test bed to compare 2-3 technologies for delivery in rural area. Content aimed at improving lives in rural areas. Assessment will include factors related to cultural acceptance
• Online courses in e-commerce for rural areas
• Online courses in computer use, small business management, how to start a small business, entrepreneurship, young professional course
• Vocational course on computer technology
• Pilot 4-H or FFA programs at a rural site to promote adoption of new agriculture methods—requires materials to be translated for both language and culture
• Encourage more on-line or two-way chat exchanges with students between in Chinese universities and students in U.S. universities
• Encourage exchange of rural sociology expertise to assist in rural development
• Computer games using English to help young people learn English
• Content in family development e.g. how to raise your family well; careers in hair styling; cleanliness, beautiful skin and hair

Submitted:

May 10, 2007
• Dave King, Oregon State University
• Jeanne Gleason, New Mexico State University
• Roger Terry, University of Nebraska
• Robert Rubinyi, University of Minnesota
Appendices

Appendix One
Structure of Organizations in Chinese Agricultural System

Appendix Two
Valuable Websites

Appendix Three
Introduction of the Central Agricultural Broadcasting and Television School

Appendix Four
The Agricultural Broadcasting and Television School of Yunnan Province Introduction

Appendix Five
General Situation of Agricultural Distance Education in Hebei Province
Hebei Agricultural Broadcasting and Television School (ABTS)

Appendix Six
Brief Introduction of the Agricultural Information Center of Hebei Province

Appendix Seven
Introduction to Distance Information Dissemination of Hebei Plant Protection Technology

Appendix Eight
In-country PowerPoint Presentations
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Team Bios

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In-country Working Contact Document
Appendix One

Structure of Organizations in Chinese Agricultural System

Source: Zhou Lijin, CICOS, Ministry of Agriculture
Appendix Two

Valuable Websites
Source: Zhou Lijin, CICOS, Ministry of Agriculture

1. Beijing:

China Agricultural Information Net (MOA):
http://www.agri.gov.cn/

China Rural Distance Education Net (CABTS):
http://www.ngx.net.cn/

Agricultural Information Institute of Chinese Academy of Agricultural Sciences (CAAS):
http://aii.caas.net.cn/

Continuing Education School of China Agricultural University (CAU):
http://jjxy.cau.edu.cn/

E-college of CAU:
http://www.cau-edu.net.cn/

2. Yunnan Province:

Yunnan Agricultural Information Net (Yunan Provincial Agricultural Department):
http://www.ynagri.gov.cn/

Yunnan Provincial ABTS:
http://www.yunnan.ngx.net.cn/

Yunnan Agricultural Occupation Technical College:
http://www.ynavc.com/

Yunnan Danyun Business Affairs Consulting Co., Ltd
http://www.danyun.com/

3. Hebei Province:

Hebei Agricultural Information Net (Hebei Agricultural Department):
http://www.heagri.gov.cn/hbagri/index1.jsp

Hebei Pro vincial ABTS:
http://www.hebei.ngx.net.cn/
Shijiazhuang Agricultural Technology Extension Center:
http://www.njcct.gov.cn/

Xinji Agriculture Net (Xinji Agricultural Bureau):
http://www.xinji.gov.cn/bumen/nyj/

Gaocheng Agricultural Information Net (Gaocheng Agricultural Bureau):

News about USDA/ADEC Team visit:

1. CABTS:
http://www.ngx.net.cn/xinwen/nongminjiaoyudongtaitupian/t20070321_13959.htm

2. CAU:
http://news.cau.edu.cn/show.php?id=0000027665

3. Yunnan Provincial Agricultural Department:

4. Yunnan Provincial ABTS:
http://www.yunnan.ngx.net.cn/jinritexun/t20070326_50333.htm

5. Yunnan Agricultural Occupation Technical College:

6. Hebei Provincial ABTS:
http://www.hebei.ngx.net.cn/meitikaifa/t20070330_50550.htm

7. Xinji Loudspeaker Program:
Appendix Three

Introduction of the Central Agricultural Broadcasting and Television School

March 19, 2007
(Source: Zhou Lijin, CICOS, Ministry of Agriculture from information provided by CABTS)

Part 1: Basic situation

The Central Agricultural Broadcasting and Television School (CABTS) was set up in 1980. It was the inevitable outcome of Chinese rural economic reform and development. In the early 1980s, the Contracted Responsibility System was implemented in rural China. The system effectively stimulated the productive positivity of farmers and the economic development of rural China and Chinese agriculture stepped into a new stage. The economic takeoff of Chinese agriculture and rural China urgently need a plenty of agricultural science and technology talents with genuine ability and knowledge, while Chinese farmers, who had obtained productive independent right, desired for agricultural science and technology knowledge and skills. However, the abilities of Chinese agricultural secondary and higher education are quite limited due to the lack of educational resources. Such kind of education was far from satisfying the requirement of rural grass-root cadres and farmers for education and agricultural science and technology training by. Therefore, an austere situation presented in front of us, which was the demand exceeded supply in farmers’ education. Under this background, agricultural broadcasting and television schools emerged as the times require. The operating way of the schools had the characteristics of small investment, quick gains, large capacity, widely coverage, low cost, high efficiency, centering rural working situation, and so on.

The highest organization of CABTS is the leading Group constituted by 23 ministries, committees and organizations that jointly sponsor to run the school, including the Ministry of Agriculture, the Ministry of Education, Organization Department of the CPC Central Committee, Ministry of Finance, National Development and Reform Committee, Ministry of Personnel, Ministry of Labor and Social Security, National Population and Family Planning Committee, Aid-the-Poor Development Office of the State Council, State Forestry Administration, the State Administration of Radio Film and Television, China National Radio (CNR), China Central Television (CCTV), China Education Television, and so on. Supporting by the leading team, CABTS has strengthened its guidance and collaboration of carrying out the rural distance education.

Through the development in nearly 26 years, a nationwide five-level school system of broadcasting and television schools has been formed, including CABTS, 39 provincial schools, 339 prefecture (city) schools, 2182 county (city) schools, and more than 12000 township teaching stations. The number of full-time and part-time tutors has reached 46,000. CABTS completes its teaching mission through the harmonious development among the five levels. The system has covered most areas of rural China and became the largest rural distance education institution in the world.

The school system has been dedicating to rural distance education, which was supported by central and local governments and was very popular to farmers. The objects of its education and training include the youth, grass-root cadres, agricultural technicians, women, minority ethnic groups and farmers. It has helped to enhance the cultural levels of these people efficiently.

Meanwhile, CABTS carries out its teaching by both distance education measure and face-to-face instruction. Its main distance education measures are broadcasting, television, audio cassettes, video tapes, VCD, satellite, network, textual instructional materials, newspapers and periodicals. Besides, to solve the problem of ‘the last 1 km’, CABTS also use some Chinese featured educational forms, including agricultural science and technology dissemination vehicles, science and technology library for farmers and loudspeakers.
Currently, CABTS has two teaching programs weekly broadcasted for 3 and half hours in CNR and televised 12 hours in CCTV-7 respectively, while some local agricultural broadcasting and television schools also have their farmers’ education training programs broadcasted and televised in local radio and television stations. CABTS has built its satellite distance education training network that possesses an independent main site and 335 receiving sites. It also has more than 500 kind of instructional materials and 1000 kind of VCD to meet the demand of new rural construction. The Agricultural Radio and TV Instructional Newspaper of CABTS is published twice a week and the magazine of ‘Science and Technology Training for Farmers’ is published monthly. Other outstanding achievements were as follows: 150 grass-root agricultural broadcasting and television schools equipped agricultural science and technology dissemination vehicles, 2,100 science and technology libraries for farmers and more than 6,000 rural loudspeaker broadcasting stations were newly built, the mobile textual message service system for agricultural technology was developed, a database that contained 53,000 textual messages was formed, China Rural Distance Education and Rural Laborers Transfer Training networks were built, and so on.

The courses of CABTS have covered the main agricultural areas such as crop cultivation, animal husbandry, agricultural economic management, agricultural engineering, forestry, agricultural ecology, home cares and applicable agricultural technology. The central school is responsible for constituting the uniform teaching plan, instructional materials and nationwide examination papers. The provincial and other branch schools are responsible for deciding their majors basing on those stipulated by the central school, implementing teaching plan, supplying teaching supported service and self-setting some majors according to local characteristics and farmers’ demand. Accompanying with rural laborers transfer in recent years, the schools’ training content has enlarged from farming to non-farming, such as repair and maintenance of home electric appliances, hairdressing, cooking, housework, electric welding, repair and maintenance of motor vehicles, computer, architecture, and so on. Such kinds of training are helpful for the transferred laborers to find jobs easier.

**Diploma and Non-diploma Educational Training of Agricultural Broadcasting and Television School System:**

1. **Diploma Education**

CABTS carries out the diploma education facing farmers and special technicians, which aims at nurturing practical talents.

Secondary Vocational Education: facing the rural youth, farmers, agricultural technicians, managers of township enterprises and rural grass-root cadres;

Post Secondary Education: CABTS launched post secondary education in 1999 and the majors include agricultural extension, rural economic management, veterinary, and so on. Its purpose is to provide the continuous education for the talents who engage in agricultural production in a long term and have been experienced secondary diploma education to update their knowledge;

Cooperative Higher Education: the cooperation with agricultural higher academies was initiated in 1995. The teaching details are implemented by provincial schools and the courses are decided according to the local situation of agricultural production. It includes graduate and postgraduate diploma education.
2. Non-diploma Education

During the past 25 years, the farmers turned their demand from diploma education, technical education and skill training to diversification. Re-training, ability enhancement, and lifelong learning have been highly concerned gradually. In order to satisfy farmers’ different demand, CABTS began to extend its education into non-diploma area. In December 1999, the Training Center of Peasants Scientific and Technological Education of Ministry of Agriculture was established, which strengthened the school’s function of training farmers. Non-diploma education mainly includes:

Green Certificate Training: edified by the successful experience of the Canadian Green Certificate Project, CABTS started to implement Green Certificate Training in the mid 1980s. More than 3,600,000 graduates took part in the training and got the certificate. The training content referred to pig-keeping, poultry, home cares, fruit and vegetable production, crop production, greenhouse vegetable, gardening skills, and so on. The training objects were technicians, managers, production supervisors and farmers.

Professional Skill Identification: basing on the skill training. The qualification certificate records the training situation and the trainee’s special skills in special agricultural type of work. The certificate is issued by the governmental departments.

Applicable Agricultural Technology: it is most popular among farmers. About 168,000,000 person-times have attended diversified training so far.

Laborers Transfer Training: in 2003, the Chinese government constituted countrywide farmers training programming from 2003 to 2010. It aimed to enhance farmers’ integrative abilities and hired capacities, speed up transferring rural laborers to cities and increase farmers’ income and promote the rural economic development. In order to implement this programming, the Ministry of Agriculture organized and implemented ‘Sunshine Program – the Rural Laborers Transfer Training’ together with other ministries and committees. The sunshine program training mission of CABTS was to transfer 1-3rd of the total rural laborers.

By the end of 2006, CABTS had enrolled 3.73 million students for the secondary diploma education, of which 1.914 million have graduated with the diploma, and another 1.794 million have completed one or more courses. The post secondary education enrolled 131,000 students with graduates of 108,000. About 14.6 million students have attended the ‘Green Certificate’ and the ‘Trans-century’ training, of which 7.8 million have acquired the Certificate. And more than 165 million person-times participated in the applicable agricultural technology training. The people have attended rural laborers transfer training, and those have been transferred and employed are 20.755 million and 9.34 million.

Meanwhile, CABTS have also deployed a series of international cooperation and communication activities. It has built cooperative relationships with the academies in Canada, Australia, Holland and Thailand, and the international distance organizations such as International Council of Open and Distance Education (ICDE), Asian Association of Open Universities (AAOU), Food and Agriculture Organization of the United Nations (FAO) and United Nations Educational Scientific and Culture Organization (UNESCO). It is very regretful that CABTS has not cooperated with any American distance education academies or organizations. In early 1986, the school used to send a delegation to California to visit a TV station, a seashore community college, University of California Davis, Educational Bureau of Sacramento and Californian Farmer Federation. Through your team’s visit to CABTS, the school hopes to re-build and realize the bilateral cooperation with U.S. in the areas of distance education, agricultural vocational education, farmers training and rural laborers transfer training.
Part 2: Existent Problems

1. Investment in farmers’ education is insufficient

As the data of 2004 shows, the country’s financial investment in education was 446.59 billion RMB, approximately 55.83 billion US dollars, which only occupied 2.76% of GDP. During the period of the 11th ‘Five-year Plan’ (2006-2010), the country has been striving for increasing the educational investment to 4%, while the American investment in education occupied more than 7% of GDP, approximately 646.8 billion US dollars. Therefore, Chinese investment in farmers’ education is too limited (the American annual investment in farmers’ education is about 60 billion US dollars as the data indicated). As the comparative benefit of agriculture is few and the level of farmers’ income is low, the financial support to the investment in farmers’ education has to reply on the central and local governments. In the past many years, the problem of insufficient investment affected the development of teaching measures and some basic conditions especially restricted the advantages of the distance education such as fast, convenience, big capacity and span of time and space.

2. Teaching staff capacity building awaits further enhancement

The object of rural distance education is a special group of people. The diversification of educational levels is a challenge to teachers’ abilities. The schools need both the professors with high theoretical level and the technicians with abundant practical experience. Otherwise, the development of educational training will be restricted.

3. The farmers’ positivity to receive educational training is low

In a long term, Chinese farmers were conservative and they took traditional working ways of small-scale. Facing the agricultural emerging technologies, new varieties and updated life-way, their on the wait-and-see attitude affects the development of farmers’ educational training.

4. The educational resources are still lacking.

China has wide terrain and there are big differences among areas. The rural population is large and the demand in rural China is diversified. The current educational resources are far from to satisfy the demand of educational training.

Part 3: The Next-step of Work

During the period of the 11th ‘Five-year Plan’, the farmers’ educational training will step into the stage of developing and enhancing at very fast speed. Surrounding the central mission of agricultural and rural economic development, we will strive for attracting more agricultural investment from governments, enterprises and individuals, strengthening teaching staff capacity building based on nurturing the teachers with both knowledge and practice, enhancing educational training abilities with the emphasis on developing digital technologies, intensifying teaching resources building to meet the farmers’ requirements. We will also carry out the science and technology training, rural laborers transfer training and the nurture of practical talents in a large scale and wide range. We will nurture a plenty of civilized, law-abiding, skilled and creative farmers with good cultural levels, updated conception and high managerial abilities. Such kind of farmers will become the intellecutive support and ensure the talent supply for constructing the socialist new rural area and harmonious society.
Appendix Four

The Agricultural Broadcasting and Television School of Yunnan Province Introduction
March 22, 2007
(Source: Zhou Lijin, CICOS, Ministry of Agriculture from information provided by Yunnan ABTS)

The Agricultural Broadcasting and Television School of Yunnan Province (ABTS) was set up in June 1981. Its establishment was for fulfilling the strategy of ‘basing on education and thriving Yunnan by science and technology’ of the provincial committee and government, keeping consistent with rural system reform and economic development and enhancing farmers’ scientific, technological and cultural abilities. The provincial government approved its establishment in November 1983. The school was jointly sponsored by the provincial organization department, development and plan committee, education committee, economy committee, institutional organization committee, labor and personnel department, financial department and agricultural department. It is a rural scientific and technological distance education training school facing agriculture, rural China and farmers. The provincial agricultural department is in charge of the school and its first president was the vice-governor who was responsible for agriculture at that time.

Under the support and concern of provincial committees, government and leaders at all levels, ABTS of Yunnan has become a public service platform of modern agricultural distance education. It has 1 provincial school, 16 local branch schools at prefecture and city levels, 116 township schools and 551 teaching classes. There are more than 2,600 full time and part-time staff and 20,000 students in higher and secondary education. In every year, about 160,000 students attend the green certificate training, while 500,000 person-times attend farmers’ practical technology training. The integration of 3 parts, including broadcasting, television and 13 satellite stations, educational bases and network and five-level organizational system from central to local levels, has been formed generally. The school’s has the comprehensive functions of educational training, science popularization, service extension and information dissemination.

The provincial scientific and technological education and training center for farmer, ABTS, green certificate office and professional skill identification station for No. 251 agricultural special type of work should the tasks of rural practical technology training, green certificate training, new-style farmers training, laborers transfer training, secondary diploma education, cooperative higher education, professional skill identification for agricultural special type of work, and so on. According to the document issued by the state council, the mission of ABTS is as follows:

1. Exert the advantage of electric teaching and speed up nurturing talents.
2. Thrive agriculture by science and technology and popularize scientific technologies.
3. Train rural grass-root cadres and serve for the construction of grass-root organizations.
4. Face to the remote and poor areas and engage in aiding the poor and solving the difficulties positively.
5. Insist on nurturing talents by teaching and promote the rural construction of spirituality.

The provincial ABTS pays close attention to rural China and farmers. It carries out the training basing on the agricultural production and farmers’ demand for increasing income. The school has explored the pattern of training teachers, using media resources and nurturing talents. By the end of 2006, the school has enrolled 144,474 students for secondary and higher education, of which 70,420 have graduated with the diploma, and another 70,000 have completed one course. And more than 4 million person-times
participated in the applicable agricultural technology training. The secondary education had 29 majors that referred to five categories including planting, breeding, engineering, education and economic management. The school enrolled 114,545 students for secondary education, of which 60,074 graduated with the diploma, and another 50,000 have completed one course. Meanwhile, it enrolled 29,929 students for cooperative higher education, of which 10,346 graduated with the diploma.

The ABTS started its green certificate training in 1993. By the end of last year, it enrolled 1.9078 million trainees; of which 480,133 got the green certificate (500 of them were trained for frontier force). 46,400 person-times of these graduates with green certificate participated in various scientific associations. Their extensive scientific programs and area reached 3,749 and 17.1419 million Mu. They also helped to build 315 demonstration villages of green certificate. They led the agricultural thriving by science and technology and combined the agricultural science and technology with extension and application. They also dedicated in promoting the adjustment of agricultural industrial system, the development of local rural economy, the enhancement of agricultural production, the increase of farmer’s income and the construction of socialist new rural area and harmonious society.

Besides, the school carried out its professional skill identification for 2,553 people, of which more than 500 were soldiers in frontier force. From 2004, it carried out the rural laborers transfer training and has trained 65,100 farmers, including the sunshine program.

The provincial ABTS won the awards of ‘excellent organization’ in the ‘Shenhu Cup’ nationwide green certificate knowledge contest and national ‘advanced group of green certificate program’. In 2000, it was also commended as ‘advanced group of national agricultural broadcasting and television education’ by the ministry of agriculture in the Great People’s Hall.

After that, the school was also commended as ‘advanced organization of scientific and technological training for farmers’ and ‘advanced group of national agricultural broadcasting and television education’ in 2004 and 2005 respectively.

More than 95% of the school’s students are farmers, who are scientific and technological talents that can stay and work in rural areas. Among the graduates, 59 are national and provincial model laborers and provincial delegates of National People’s Congress (NPC) and National Committee of the Chinese People’s Political Consultative Conference (CPPCC), while 1,429 are township delegates of NPC and CPPCC. Besides, 355 are mid-level governmental officials, 1,839 are township-level cadres, 8,075 are village-level cadres (one of them is commended as national excellent leader of village), 10,644 are backbone technicians of township agricultural scientific stations, 47,357 are rural specialized and demonstrating households and more than 7,000 are employed as various service staff for rural socialization. There are 222 and 3,179 people have been commended at provincial and township levels respectively. 1/3 of the rural grass-root cadres are graduated from the ABTS (in 2000, the school enrolled 7,217 students after the provincial educational committee approved, of which 4,074 were the party or league members that occupied 56.5%, and 4,473 were village cadres that occupied 62%). In 2001, the provincial ABTS had more than 20,000 students in secondary and higher education, which occupied one in a thousand of the rural laborers in the whole province. Centering the farms and villages, these students combined their knowledge with practice. They exerted important effect in the fields of agricultural science extension, science and culture popularization, increase of farmers’ income and rural stability.
Entering into the 21st century, the provincial ABTS has the following missions:

1. Under the guidance of Deng Xiaoping Theory and the spirit of 16th Party’s Congress, carry out the Three Represents Important Idea completely.

2. Continue to carry out the spirit of ‘effectively operate the ABTS, implement the Green Certificate and Youth Farmers Training Programs and strengthen the Practical Technology Training for farmers’, which is mentioned in the inform about ‘further effectively running the ABTS’ issued by the General Office of the State Council.

3. Implement the operative tenet of ‘nurture new-style farmers and serve for new-type rural China’.

4. Fully exert the characteristics of advanced teaching, convenient and fast receiving, wide-range educational objects and various teaching forms, while disseminate and teach scientific and cultural knowledge systematically.

5. Strive for realizing the 3 objectives of developing Yunnan as a powerful green economic province, a big ethnic cultural province and the China-Southeast Asia-South Asia International Passageway.

6. Strive for self-construction as a modern rural distance education network school that carries out lifelong education for farmers.

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Appendix Five

General Situation of Agricultural Distance Education in Hebei Province

Hebei Agricultural Broadcasting and Television School (ABTS)
March 26, 2007
(Source: Zhou Lijin, CICOS, Ministry of Agriculture from information provided by Hebei ABTS)

Part A: Development and Current Situation of Hebei Agricultural Distance Education

Hebei ABTS is consisted of 11 city-level branch schools, 148 county-level branch schools and more than 1,000 village-level teaching classes. It is formed as a 4-level integrative teaching system at provincial, city, county and village levels. Its distance education insists on serving for agriculture, rural China and farmers. It combines diploma education with non-diploma education and teaching with production. Accompanying with agricultural rural economic and social development, it widely carried out educational training for farmers and nurtured a plenty of rural talents at different levels. It promoted the agricultural and rural economic development and the construction of rural culture. The provincial ABTS has become the leader of scientific education for farmers.

The agricultural distance education in Hebei province experienced 3 different stages. The main teaching ways were papers and letters in the first stage, radio and TV in the second stage and multimedia technology and computer network in the last stage. Nowadays, these teaching ways are used both separately and integrated. They represent as 6 patterns as follows.

Part B: Operative Pattern of Hebei Agricultural Distance Education

There are various ways of agricultural distance education, while different ways have different operative patterns.

1. Mail instruction. In the early stage, the central educational organization of the province posted instructional materials to the learners. It combined self-learning with face-to-face instruction, and it checked the learning situation by exams. Gradually, instructional materials were changed into books, VCD and cassettes.

2. Loudspeaker broadcasting. Firstly, the central educational education makes the courseware as cassettes, delivers them to the broadcasting stations in rural areas and implements teaching by loudspeaker. Secondly, the central educational organization makers the courseware as MP3 audio files and uploads them to the website. The rural scientific broad casting stations download those MP3 and broadcast the content through loudspeaker. It is effective to combine traditional and modern media. Thirdly, village-level educational organizations use MP3 to produce courseware and implement teaching by loudspeaker. We will visit to Xinji city to have a look of such operative pattern.

3. Wireless broadcasting. The central educational organization cooperates with local broad casting stations. It uses wireless broadcasting to broadcast the lectures. The learners listen to the teaching courses by radio.

4. TV programs. Firstly, the Project of Agricultural Technology Electric Wave Entering Farmers’ Home was implemented. At present, 128 counties/cities have implemented the project in Hebei province. These cities and counties have built A/V production studios and had the TV program production equipments including video camera, micro phone, editing system and computers. The agricultural technological programs could be produced and televised in local stations regularly. The agricultural technology electric wave entered the farmers’ home timely. It helped to enhance the scientific and cultural abilities of local farmers. It also met the demand of local economic development. We will visit to Gaocheng city to have a look of this pattern. Secondly, the agricultural scientific programs
were set up in the provincial TV station. The TV programs promoted rural policy and provided in formation and technology for farmers to help increasing their income. These programs were popular among farmers. The learners could watch the teaching content regularly or recorded them.

5. An Integrative Hall with Three Electros Service System. An agricultural and scientific hall with three electros including computer, telephone and TV was set up. It provides agricultural consultation service for farmers. Firstly, the farmers can use voice telephone to enquire agricultural technological knowledge. Secondly, the farmers can look up agricultural technological knowledge by using touch screen. Thirdly, the farmers can learn agricultural technological knowledge by watching the TV scientific programs.

6. Modern distance education. It provides personal teaching to audience. The learners can choose their favorite ways to learn positively and creatively. Meanwhile, modern distance education could solve the problems of lacking scientific educational resources, the unbalanced opportunities to get education and the slowly speed to extend agricultural science.

The development of Chinese agricultural distance education is still in the primary stage. The agricultural colleges and scientific research institutions have built and are developing their modern distance education network. Implementing the educational network can contain a plenty of learners at the same time, while the virtual network school can make the learners to choose their own courseware and online courses. There are 2 types of teaching on the Internet.

The first one is called ‘widely-teaching’. The provincial central distance education organization integrates video, audio and PPT slides to produce courseware content and then upload it to the website. The learners do not need to install any special software. They only need to use the Microsoft Windows to visit the website and browse the learning information. There is no restriction to anyone who learns online. The operative way of Hebei Rural Distance Education is an example of this type.

Another type is limited-teaching. The central educational organization encodes the multimedia courseware and restricts the visit the website. The learners have to log-in and type the codes, and then they can enter into the system to download the courseware or learn online. The cooperation with Zhejiang University is in this type. Its detailed teaching and managing process is as follows.

1. Registration and enrollment have to be done on the Internet.

2. Payment for the tuition fees has to be done by remitting money to the account of Zhejiang University through bank or post office.

3. Teaching process: the main teaching ways are VCD, DVD, Internet and Satellite server. The students mainly depend on self-learning. They can also arrange learning time according to their person situation.

   (1) Courseware transmission. Firstly, Zhejiang University implements the instructional courseware transmission by satellite network. It uploads the courseware regularly to the website. The teaching center outside the university downloads the courseware by satellite receiving system, selects some fitting for its students, uploads to the Hebei Information Network and encodes the courseware. The learners use the codes provided by the teaching center to enter into the website and learn online.

   (2) If the students have any questions, the first solving way is BBS. They can communicate with the teachers online. The second way is QQ (similar to OICQ). The students can build their QQ group and communicate with other students and the teachers. The third way is e-mail. The students can send e-mail to teachers to ask questions and the teachers can send them back to answer them.

4. Homework. The instructional courseware contains the content of homework. The students send their homework to the teaching center when they finish it and the teachers in the teaching center will mark it.

5. Examination of learning results. The university is responsible for designing the questions and marking the scores, while the teaching center is responsible for organizing and supervising the examination rooms.

6. Graduate dissertation. The students communicate with the teachers online and finalize their topics. They all submit and mark the dissertation online.
Appendix Six

Brief Introduction of the Agricultural Information Center of Hebei Province
March 28, 2007
(Source: Zhou Lijin, CICOS, Ministry of Agriculture from information provided by Hebei Ag. Info Center)

The Agricultural Information Center of Hebei province was set up in Jun. 1998. The number of its stall is 16 and it has 3 divisions including the comprehensive division, information collecting and editing division and information management division. The center is mainly responsible for the construction, maintenance, operation and management of the provincial agricultural information network. It is also in charge of the database, the development, software application and extension, the construction standard, technological regulations and technical training of the provincial agricultural information network and the collection, arrangement and publication of the agricultural information.

The comprehensive division is responsible for making the center’s long-term developmental plan, working plan, secretary tasks, human resources, financial management and helping the center’s leaders to deal with the daily executive tasks.

The information collecting and editing division is responsible for the resource management of the agricultural information network, the guidance of the provincial agricultural information resource construction, the collection, editing and publication of the network information, analysis and forecast of the agricultural marketing supply and demand, scientific information and price situation.

The network management division is responsible for Hebei agricultural information network’s management, security management, internal technological support, management and maintenance of the facilities in the computer and supervision rooms, and so on.
Appendix Seven

Introduction to Distance Information Dissemination of Hebei Plant Protection Technology
March 28, 2007
(Source: Zhou Lijin, CICOS, Ministry of Agriculture from information provided by Hebei Plant Protection)

Part A: General Working Situation of Provincial Plant Protection

Hebei plant protection work is carried out by the special plant protection institutions belong to agricultural executive departments at different levels. City and county level executive management departments have special plant protection institutions called plant protection and inspection stations. The stations are responsible for inspecting and forecasting harmful living things, pest protection, controlling plant epidemic situation, applying and extending plant protection technology, managing the pesticide use and experimenting new pesticide, executive permitting and auditing plant inspection. In the whole province, there are 37 inspection and control stations at national and provincial levels and more than 1,200 plant protection technicians.

Provincial general plant protection station is the subordinate institution of provincial agricultural department. It is responsible for managing and guiding the daily plant protection tasks of the province. It has 8 main functions: inspection and forecast of pest; treatment of significant agricultural pest situation; plant inspection; technological extension of plant protection; experiment and evaluation of new pesticide; management of pesticide use and extension; solving the urgent events of pesticide and pest; construction of plant protection service system. Its main technical tasks include the dissemination of plant protection information, diagnosis of pest and guidance of protecting and treating technology.

Part B: Distance Dissemination of Plant Protection Information and Distance Consultation of Plant Protection Technology

Hebei plant protection distance education and consultation are in primary stage. The plant protection technology and information can be extended into village and township plant protection service sites. Farmers can get the pest forecast information through various ways:

1. Network: Hebei plant protection information website was set up in 2000 by provincial general plant protection station. There are some content of pest diagnosis, distance consultation and expert’s online answers. The farmers could click the content to learn and enquire technology and communicate with the experts. Some city-level stations also have such kind of website, while parts of county-level agricultural departments have set up consultation service halls or sites. The farmers could go to the service sites and use the touch screen to get the technological information.

2. TV: the plant protection institutions at provincial, city and county levels have plant protection programs in local TV stations, which are televised regularly or irregularly. The main content includes the pest forecast, current pest treatment technology and lectures. The programs are produced by the agricultural departments and televised by TV stations without any payment.

3. Mobile Phone Text Message: the provincial plant protection station cooperates with the technical extension station to engage in the text message service. According to different seasons, they mainly send pest protection technologies of food, cotton, vegetable and fruit trees to their audience. Now, there are more than 200,000 people have subscribed the message in the whole province.
Part C: Plan for Future Work

1. Completing and enhancing provincial plant protection information website. The provincial financial department has provided 1.3 million RMB to support it. The website cooperates with the mass people to develop plant protection information regulations, including pest database and warning system, geographic information support system, distance diagnosis system and technological consultation system. Such working plan will be completed by the end of this year.

2. Completing and enhancing TV dissemination of plant protection technology, further enhancing quality of TV programs and forming independent productive ability. In the province, 50 counties have had special equipments for collecting and editing the content. Meanwhile, they strengthened the collaboration between meteorology and TV broadcasting enhance the quality of TV dissemination.

3. Strengthening cooperation with other agricultural technological departments, better participating in distance education activities of agricultural technology, gradually realizing the most efficient disseminating way of plant protection technology and directly delivering the technology to the farmers.
Appendix Eight

In-country PowerPoint Presentations

From the Village to the World—How Danyun Has Used E-business to Develop a Handicraft Enterprise in Yunnan Province, China

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Presented at the
Sub-Regional Workshop on E-Business Development Services for Enterprise Support Agencies
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### Appendix Nine

#### Working List of Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Photo</th>
<th>Organization</th>
<th>Location</th>
<th>Email</th>
<th>Phone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Central Agricultural Broadcasting and Television School (CABTS)</td>
<td>Beijing</td>
<td><a href="mailto:gg62@sina.com">gg62@sina.com</a></td>
<td>86-10-64194430</td>
<td>Monday, March 19</td>
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<td>Shao Mingxu, vice-director for WEB-based education (CABTV)</td>
<td>Central Agricultural Broadcasting and Television School (CABTS)</td>
<td>Beijing</td>
<td><a href="mailto:shaomingxunq@njx.net.cn">shaomingxunq@njx.net.cn</a></td>
<td>86-10-64194223</td>
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<tr>
<td>Meng Fan, vice-director for Journal Office (CABTV)</td>
<td>Central Agricultural Broadcasting and Television School (CABTS)</td>
<td>Beijing</td>
<td><a href="mailto:mengfan@njx.net.cn">mengfan@njx.net.cn</a></td>
<td>86-10-64194428</td>
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<tr>
<td>Li Fang Hong, vice-director for International Cooperation (CABTV)</td>
<td>Central Agricultural Broadcasting and Television School (CABTS)</td>
<td>Beijing</td>
<td><a href="mailto:wclfh@agri.gov.cn">wclfh@agri.gov.cn</a></td>
<td>86-10-64194423</td>
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<tr>
<td>Chen Hui, (Dean’s office) director -</td>
<td>Central Agricultural Broadcasting and Television School (CABTS)</td>
<td>Beijing, (also Senior Livestock Specialist)</td>
<td><a href="mailto:chenhui@njx.net.cn">chenhui@njx.net.cn</a></td>
<td>86-10-64194784</td>
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<tr>
<td>Jorge Sanchez, Ag Attaché, USDA based at the Embassy of the USA</td>
<td>USDA based at the Embassy of the USA</td>
<td>Beijing</td>
<td><a href="mailto:jorge.sanchez@usda.gov">jorge.sanchez@usda.gov</a></td>
<td>86-10-6532-1953 Ext. 323</td>
<td>Monday, March 19</td>
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<tr>
<td>Cao Haijun</td>
<td>Ministry of Agriculture, Center of International Cooperation Service</td>
<td>Beijing</td>
<td><a href="mailto:caohaijun@agri.gov.cn">caohaijun@agri.gov.cn</a></td>
<td>8610-641924499 (or 64192629)</td>
<td>Evening meal? Monday March 19</td>
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<td>Gu Pei De, vice dean</td>
<td>CAU-EDU.Net (joint venture)</td>
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<td>Liang Shu Hua, vice dean</td>
<td>CAU-EDU.Net (joint venture)</td>
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<tr>
<td>Zhang Huimin, VP CABTS</td>
<td>CABTS field office and edit rooms -- distribution Center</td>
<td>Beijing</td>
<td><a href="mailto:hebingxzhm@yahoo.com.cn">hebingxzhm@yahoo.com.cn</a></td>
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<tr>
<td>Wu Jiazh, administrative</td>
<td>China Agricultural University, School of continuing ed</td>
<td>Beijing</td>
<td><a href="mailto:wz@cau.edu.cn">wz@cau.edu.cn</a></td>
<td>86-10-62732582 13501039418 cell</td>
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<tr>
<td>Cao Zhaohong, vice Dean</td>
<td>China Agricultural University, School of continuing ed</td>
<td>Beijing</td>
<td><a href="mailto:chib@cau.edu.cn">chib@cau.edu.cn</a></td>
<td>86-10-62731381 13910386710 cell</td>
<td>Tuesday, March 20</td>
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<tr>
<td>Wang Ying, Vice Dean, of</td>
<td>China Agricultural University, School of continuing ed</td>
<td>Beijing</td>
<td><a href="mailto:wulan@cau.edu.cn">wulan@cau.edu.cn</a></td>
<td>86-10-62732583 13621087022 cell</td>
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<td>Min Zhang</td>
<td>Program officer, for international Relations, CAU</td>
<td>2+2 program</td>
<td><a href="mailto:minzh@cau.edu.cn">minzh@cau.edu.cn</a></td>
<td>86-10-6273-7714 86-13522-112631 cell</td>
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<td>Young student in the</td>
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<td><a href="mailto:liucong@cau.edu.net.cn">liucong@cau.edu.net.cn</a></td>
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<td>Agricultural University</td>
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<tr>
<td>William Y. B. Chang, Ph.D.</td>
<td>US National Science Foundation, Beijing Office</td>
<td></td>
<td><a href="mailto:wychang@nsf.gov">wychang@nsf.gov</a></td>
<td>86-10-6410-6931 or 32</td>
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<tr>
<td>Director NSF</td>
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<tr>
<td>Yang Xiu, Deputy</td>
<td>Chinese Academy of Agricultural Sciences</td>
<td></td>
<td><a href="mailto:yangxiu@caas.net.cn">yangxiu@caas.net.cn</a></td>
<td>8610-6891-9470</td>
<td>Wednesday, March 21</td>
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<tr>
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<td>Meng Xianxue, deputy</td>
<td>Chinese Academy of Agricultural Sciences</td>
<td></td>
<td><a href="mailto:meng@mail.caas.net.cn">meng@mail.caas.net.cn</a></td>
<td>86-10-6891-9918</td>
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<tr>
<td>director General</td>
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<tr>
<td>Pi (Peter)</td>
<td>Chinese Academy of Agricultural Sciences</td>
<td></td>
<td><a href="mailto:pijz@caas.net.cn">pijz@caas.net.cn</a></td>
<td>010-68919886-2329</td>
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<td>Jiezhen, director service</td>
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<td>Zhou Kailian</td>
<td>Director, Sr. Researcher</td>
<td><a href="mailto:hailianz@yahoo.com.cn">hailianz@yahoo.com.cn</a></td>
<td>86-871-5749567</td>
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<td>He Ming Dong</td>
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<tr>
<td>Zhao Qian</td>
<td>Vice director of basic section</td>
<td><a href="mailto:zhaopin_99@yahoo.com.cn">zhaopin_99@yahoo.com.cn</a></td>
<td>0871-6074001 13095336188 cell</td>
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<td>Li Gang</td>
<td>Director of Books and Information Center</td>
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<td>Mark Tu</td>
<td>director, Ag Info Center</td>
<td><a href="mailto:marktu@ynagri.gov.cn">marktu@ynagri.gov.cn</a></td>
<td>0871-5611598 13708854058</td>
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<tr>
<td>John Langston</td>
<td>Director &amp; Agriculturist</td>
<td>Lincang</td>
<td><a href="mailto:ilangston@pobox.com">ilangston@pobox.com</a></td>
<td>01186 883 268 0519 Office</td>
<td>Thursday, March 22 evening meal</td>
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<tr>
<td>Don Lytton</td>
<td>Danyun Business Affairs LTD</td>
<td>Kunming</td>
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<tr>
<td>Ren Shao Hui</td>
<td>Enterprise Development consultant</td>
<td>Kunming</td>
<td><a href="mailto:renshaghui@danyun.com">renshaghui@danyun.com</a></td>
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<td>Li Cheng-Yun</td>
<td>National Center of Agro-biodiversity</td>
<td>Kunming</td>
<td><a href="mailto:l.chenyun@gmail.com">l.chenyun@gmail.com</a></td>
<td>0871-522-7552</td>
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<tr>
<td>Wangyun Yue</td>
<td>Professor, head of Plant Pathology</td>
<td>Kunming</td>
<td><a href="mailto:YunyueWant40@hotmail.com">YunyueWant40@hotmail.com</a></td>
<td>0871-522-0389</td>
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<td>Hebei Ag. Broadcasting &amp; Television School</td>
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<td>Natural Village DaPingDe</td>
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<tr>
<td>Zhang Huimin, VP of Hebei ABTS</td>
<td>Hebei Ag. Broadcasting &amp; Television School</td>
<td><a href="mailto:hebingxzhm@yahoo.com.cn">hebingxzhm@yahoo.com.cn</a></td>
<td>13832173687 Cell</td>
<td>Monday</td>
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<tr>
<td>Mr. He Jianbin, Pres. Hebei ABTS</td>
<td>Hebei Ag. Broadcasting &amp; Television School</td>
<td><a href="mailto:ngxhjb@yahoo.com.cn">ngxhjb@yahoo.com.cn</a></td>
<td>13932151918</td>
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<tr>
<td>Zhang Shumin, Vice director &amp; Research Fellow</td>
<td>Plant Protection General Station of Hebei Province</td>
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<td>86-0311-86685221 13803374518 Cell</td>
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<tr>
<td>Li Yuchua, Technology director</td>
<td>Plant Protection General Station of Hebei Province</td>
<td><a href="mailto:yuehuali6368@126.com">yuehuali6368@126.com</a></td>
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<tr>
<td>Zhang Qisheng</td>
<td>Vice Director</td>
<td>Shijiazhoung, Hebei Province</td>
<td><a href="mailto:zhang3@heinfo.net">zhang3@heinfo.net</a></td>
<td>86-311-86210936</td>
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<tr>
<td>Shi Jianxin</td>
<td>Director</td>
<td>Shijiazhoung, Hebei Province</td>
<td><a href="mailto:shij@heagri.gov.cn">shij@heagri.gov.cn</a></td>
<td>86-311-86210211</td>
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<tr>
<td>Zheng Jilu</td>
<td>Chief</td>
<td>Shijiazhoung, Hebei Province</td>
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<tr>
<td>Han Jincai</td>
<td>Division Chief</td>
<td>Shijiazhoung, Hebei Province</td>
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<td>Liu Suijin</td>
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**BEIJING**

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<tr>
<td>Dr. Sherman Bai</td>
<td>University of Florida, Center for International Studies</td>
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<td><a href="mailto:sbai@beijing.ufl.edu">sbai@beijing.ufl.edu</a></td>
<td>86-10-82837885 1371-868-3118</td>
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<td>Rex</td>
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<td>Zhou Lijin</td>
<td>Center of International Cooperation Service, Ministry of Ag</td>
<td>Beijing</td>
<td><a href="mailto:zhoulijin@agri.gov.cn">zhoulijin@agri.gov.cn</a></td>
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<tr>
<td>Lin Luogeng, Vice-director of Cooperation Service, Min.</td>
<td>Center of International Cooperation Service, Ministry of Ag</td>
<td>Beijing</td>
<td>translator</td>
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<td>86-871-5749489(O) +86-13577176610</td>
<td>Yunnan trip</td>
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</table>
Appendix Ten

Team Bios

Dave King

Dave King serves as the communication leader for the Oregon State University Extension Service and the Agricultural Research unit of the OSU College of Agriculture. The OSU Extension and Experiment Station Communications department is responsible educational materials development, training, and scholarly work in the area of communications and technology adoption.

From 1998 to 2006, King was executive director of the Indiana Higher Education Telecommunication System (IHETS)—a consortium of 40 Indiana colleges and universities designed to create efficiencies and provide vision in the development and use of technology for teaching and learning. He led the development of the Access-Indiana statewide network—at its height serving more than 2,500 schools libraries, campuses, and state agencies. He also help develop the funding for the I-Light regional optical network providing fiber connections throughout the state.

King also served as CEO of the Indiana College Network. With more 3,000 courses available in 132 degree and certificate programs, the Indiana College Network is one of the nation’s longest available and influential virtual universities.

Before that King led the Agricultural Communication Service department at Purdue University from 1990-1998, and was on the Agricultural Communications faculty at Oregon State University from 1976-1990.

King has a Masters degree from the University of Oregon in Journalism (1983) and Bachelors degree from California State University, Chico in Mass Communication (1972.)

Roger Terry

Roger Terry’s education includes 1981 doctorate in Soil Physics from Kansas State University, 1979 Master of Science in Soil Physics from Kansas State University, and a 1976 Bachelor of Science in Agronomy from Brigham Young University.

Terry’s expertise includes the development and administration of information technology and distance education delivery systems and support services. His interests in educational technologies with specific emphasis on mediated learning, collaboration/communication tools, and electronic publishing.

Currently Terry serves as the administrator of a communications and information technology unit comprised of 1 tenured faculty and 55 professional rank staff. He is responsible for strategic planning, policy and budget development, departmental interactions, and personnel issues including staffing and performance management. CIT is a service unit supporting the production and delivery of information and educational materials via technology for the Institute of Agriculture and Natural Resources.

Previously Terry has worked as a Professor and Coordinator of Information and Educational Technology (IET), Department of Communications, Kansas State University (KSU),

Terry’s accomplishments include chairing the University Groupware Committee which recommended the implementation of groupware capability for campus and the establishment of a Chief Information Architect, and guiding Web development for the College of Agriculture and its academic departments using a content management system.
Jeanne Gleason

Jeanne Gleason is director of the Media Productions at New Mexico State University. The professor has built a nationally recognized production studio for creative videos, multimedia, distance outreach and education game production. She is the executive producer for more than 700 educational videos; 100 multimedia projects; and supports a team of noted game developers.

Gleason received the USDA Diversity Award and ACE Harmony Award for her programs for non-English speaking audiences. She has generated more than $15 million for NMSU through grants and contracts. Her documentaries have been featured at the Smithsonian Institution and carried on PBS stations in the USA, the Australian Broadcasting Company and Israeli Discovery Channel. Her interactive media productions are in use internationally and by numerous federal agencies, universities and school systems.

Gleason's education includes a Doctorate in Educational Technology (Curriculum and Instruction) Virginia Polytechnic Institute and State University, 1991. Master of Science, television and family studies 1977 ; Bachelor of Arts, mass communications; Bachelor of Science 1974, journalism and family studies, New Mexico State University. Gleason is a certified teacher, K-12 vocational home economics, journalism, and language arts.

Robert Rubinyi

Robert Rubinyi also serves as the Portal Manager of the “MyU” University of Minnesota web site which provides students, faculty, and staff with personalized information about the University.

Rubinyi currently serves as a member of the University of Minnesota Extension Service Learning Technology group which is responsible for providing training and support on the use of instructional and distance technology for Extension programs. Past technology Extension projects he has worked on include using U.S. Census Bureau population data with geographic information system software in rural areas, creation of the original public web site for the University of Minnesota Extension Service, and co-authoring a U.S. Department of Commerce grant involving the demonstration of how the Internet could be used to promote economic development in rural areas of the State of Minnesota.

Rubinyi also works with the Technology Enhanced Learning Team in the University of Minnesota Provost's Office. His recent projects with that office have included overseeing the development of new personalized “portals” for University of Minnesota campuses and programs (including the Extension Service) and the acquisition and implementation of a new search tool for the University’s academic web site users. Rubinyi currently serves a member of the IT Advisory Committee for the national “eXtension” project and, until last year, served as one of the technology leaders for the national Extension Children, Youth and Families Education and Research Network (CYFERnet).

Rubinyi received his Bachelor's Degree from the University of California, San Diego and his Master's Degree and PhD from the University of Wisconsin.