

5 \* 3  
- 2 Deans  
- 16 Dept

49

## AGRICULTURE COMMITTEE PRESENTATION

Dean, -

### Welcome and Introduction:

I am Thomas Lindahl, Dean of the College of Business, Industry, Life Science and Agriculture at the University of Wisconsin-Platteville. I wish to thank you for inviting us to share information with you today. We are pleased to know that you are interested in what is taking place in agriculture education on the University of Wisconsin campuses.

### Consortium response to the University System Lateral Review:

The College of Agriculture at UW-Platteville took the efforts of this review very seriously. We listened carefully to what the external review team shared with us. Although they were impressed with the education and success of our students, they did share a concern that they thought we were spread too thin with the resources we had available. We addressed these concerns by further focusing our efforts and making some difficult decisions that would assist the College in reallocating its limited resources.

In this effort we reduced our majors from eight to five. We eliminated our agricultural engineering technology major which had close to 60 majors when this decision was made. Our goal was to reduce our majors while strengthening the remaining majors and maintain our student numbers. In addition to this major, we terminated the Technical Agriculture major which had been a long-standing major and the first major developed when the College expanded beyond just a major in agricultural education. We also eliminated the agricultural economics major and encouraged students with that interest to look to UW-Madison or UW-River Falls.

The majors in the current School of Agriculture are Agribusiness, Agricultural Education, Animal Science, Reclamation, and Soil and Crop Science. Under each of these majors, we have changed and reduced the emphasis areas to better match the programs and resources available. The Reclamation major is an innovative interdisciplinary major that is managed through the School of Agriculture. Today students in this interdisciplinary major are preparing to address environmental concerns related to reclaiming soils. It is one of two undergraduate majors of its type in the United States and has grown from 30 to 80 students over the past three years.

Our goal to develop greater focus and reallocate resources while maintaining the enrollment has been achieved. When we started the process in 1992, we had 430 students enrolled. We did experience a slight reduction in students in the fall of 1993 to 396 students. Today, our enrollment has climbed to 432. Students are recognizing the increased strength in the animal science program, which received additional resources following reallocations. This program has increased in numbers to the point where it is presently one of our largest majors in the School of Agriculture. The reallocation consisted of about 5% of our total College of Agriculture budget in the fall of 1992.

The lateral review helped encourage UW-Platteville to restructure the entire University structure. Our new Chancellor, Robert Culbertson, undertook this challenge in his first year at UW-P. As a result, we began the fall of 1994 with three colleges instead of five colleges. The former College of Agriculture became a School of Agriculture and was combined with programs from three other colleges to make our new college of Business, Industry, Life Science and Agriculture. This new arrangement has increased the cooperation and interaction between some key programs important to a strong School of Agriculture. In particular, the departments of business and biology have been brought into a closer relationship while the relationships with industrial studies has been maintained with the School of Agriculture. The new structure has been working well and we are looking forward to innovative programs that will be born of this new structure. The educational programs from the perspective of the students were not negatively affected by this administrative restructuring.

One benefit of our affiliation with the UW System is the long-standing shared appointments with Cooperative Extension. At the present time, four faculty are included in these appointments. Faculty are provided the opportunity to serve the State, and our students benefit from our faculty experiences.

Trends we note:

1. **Reduction in funding of programs:** While the restructuring in both the former College of Agriculture and the University have had positive results these have been blunted by the continued reduction in the funding available. For example, the end result to the Agriculture programs is a reduction of about 15% of its base over the past three years. While a large amount of this is related to administrative savings, this has also reduced the amount of faculty and administrative time available to interact with the agriculture community in the state. This has impacted our role in serving the state as we would desire.
2. **Greater program cooperation and sharing:** We definitely see a trend in which programming needs to be shared within the System and perhaps beyond. We have experimented by offering a course taught at UW-Madison and shared with UW-P students through interactive compressed video. In 1996, we plan to teach UW-P farm management courses over this delivery system and share it with Madison. We are a cooperating partner with the UW Consortium Challenge Grant being used to expand the offerings further. This activity to become truly effective and cost efficient requires that all the institutions be connected with dedicated lines and similar and compatible equipment.
3. **Increased interaction with the greater community:** Another trend is the need for programs to become more interactive with the community. The Food Systems Project is a good encouragement to addressing this need. This trend will impact our programs in many ways. UW-P programs have always been closely linked with business and industry through effective internship programs and active advisory councils, but we

must interact more with community members not a part of the traditional agricultural community.

4. **Increased demand for graduates.** In agriculture, there is a continued trend for increased demand for our graduates. We have a long record of placing 95% or more of our graduates within the first six months. Most of these graduates have positions at the time of their graduation. We continue to receive requests for graduates after the pool has all been placed. This is also increasing the number of students who see a future in agriculture. One of the reasons we were able to maintain our student numbers while reducing our focus was a result of increased interest of students in the agriculture programs.
5. **Use of new instructional technology.** An important trend is the need to keep programs current with instructional technology. The computer age is changing what technology is available to be applied to teaching and the methods available to teach. Students expect that we will be current and use this technology but it is expensive to obtain and requires support to maintain while obsolescence continues to be a concern. We appreciate the laboratory modernization funds which assist the School in updating some of the laboratory needs.

#### Needs of Agriculture Being Addressed:

1. **Improved management in agriculture:** One of the major trends on the agricultural scene is the increasing need for improvement in management to achieve viable operations. We are addressing this trend by attempting to use our laboratory farm more actively in management instruction through the use of technology. In addition, we are teaching the Global Positioning System and preparing to use this technology in management instruction.
2. **Entering agricultural production operation:** An issue of concern to our faculty and students is the issue of how to get started in a production operation today. The state has made some moves helpful to this issue. As an educational institution we are interested in providing increased programming related to this issue.
3. **Environmental issues:** Another issue is the environmental concerns around agriculture. We believe all programs are interested in providing a sound education to address environmental issues. Our reclamation programs can help provide backgrounds for students to enter positions related to some of the environmental concerns. We are continuing to assess needs and respond with new curricula to meet those needs. Greater funding for the UW Consortium applied research area would be of interest for our faculty as they attempt to provide greater assistance to the state in these areas.
4. **Rural development.** Rural development is an issue of importance to all of rural Wisconsin. We would encourage development of policy that would expand

development around our agricultural base. Dairy 2020 appears to be making a start in this direction but there are opportunities here to link with engineering, business and other programs to provide greater assistance to the rural constituents.

Thank you again for giving us the opportunity to visit with the Agriculture Committee today.



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# Agriculture and Natural Resources Consortium

An Overview

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## Members

- UW - Platteville
- UW - Stevens Point
- UW - River falls
- UW - Extension
- UW - Madison, CALS
- UW - Madison, Sch. of Veterinary Medicine

## Purpose

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- Coordination of programs
- Funding of applied research

## Research Funding

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Total Funds Available - \$219,218 / yr

### Priorities

- Sustainable resource systems
- Structural change in the dairy industry
- Water quality
- Agroforestry
- Building rural communities

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## Lateral Review

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- Extensive self study and review by external team
- Found little duplication
- No DIN at the END

## CALS Response

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- Ag Education to Science education with certificate in ag ed focus on MS
- Dropped Ag Mechanization and Management

**College of Agricultural and  
Life Sciences**

University of Wisconsin -  
Madison

Handout description of college

## A Land - Grant College

- **Instruction**
  - » Undergraduate
  - » Graduate
- **Research**
  - » Fundamental
  - » Responsive, applied, problem-solving
- **Extension and Outreach**
  - » Primary provider Wis. ag/natural resource, research-based information

Strong Partner with COOP Extension

Important to keep agreement to pick up federal short fall in Extension funding. Not doing so will negatively impact CALS

## Research Is Unique Feature

- Fundamental research
  - » Federal funding █
  - » New basic knowledge
- Applied research
  - » State, private, federal funding
  - » Enriched undergraduate curriculum
  - » Responsive to state needs
  - » Supports Extension/outreach efforts
- Rank #1 in Grant \$/Faculty and Sci.  
Impact *How far behind is 2nd place.*

Impact statements: documents past accomplishments

Impact is on going

For example

Sugar substitute - Hellecant

Cure for MS - DeLuca and Hayes

Reduce Phosphate in manure by 40%

Vit E increases shelf life of beef - Shaffer

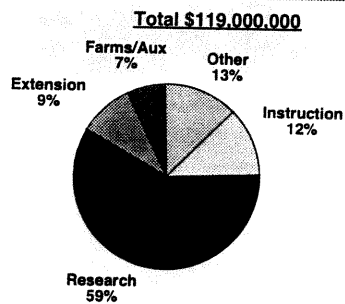
A national Crown Jewel

## Agriculture and More

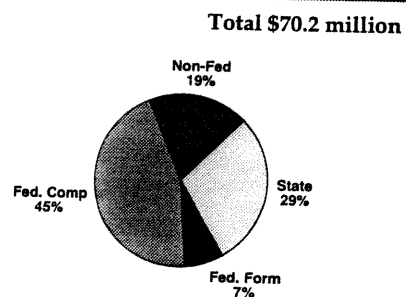
- **Food Production**
  - » Production inputs
  - » Farming
  - » Processing and marketing
- **Environment & Natural Resources**
- **Economic & Community Development**
- **Human Nutrition, Health and Food Safety**
- **Basic Biological Sciences**

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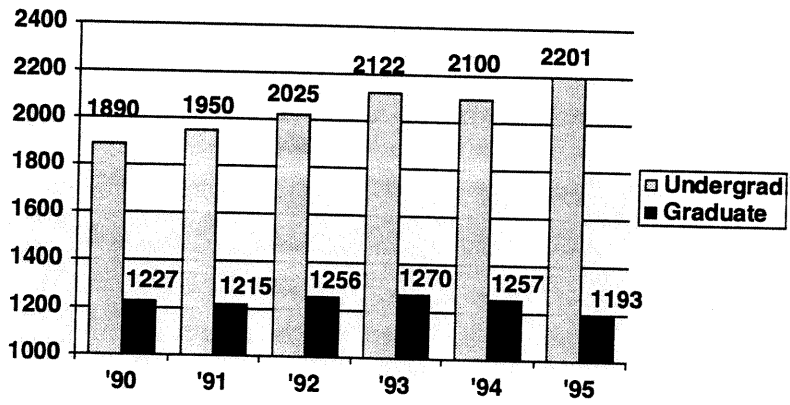
### CALS Expenditures FY 1995



### CALS Research Funding Sources 1995

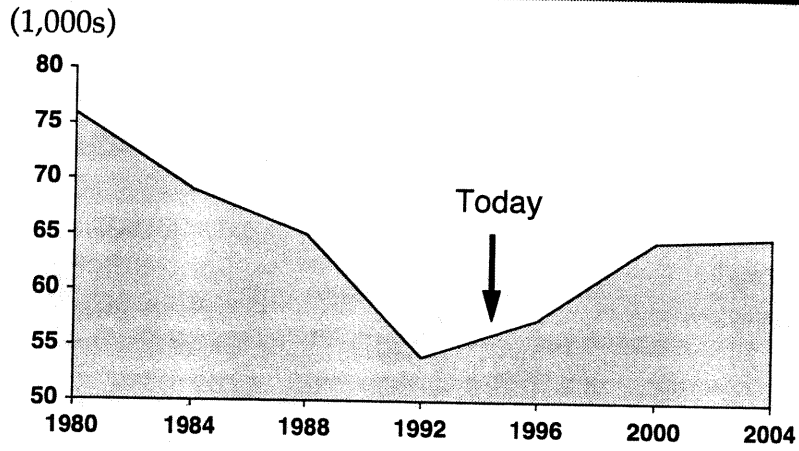


# Enrollment Trends

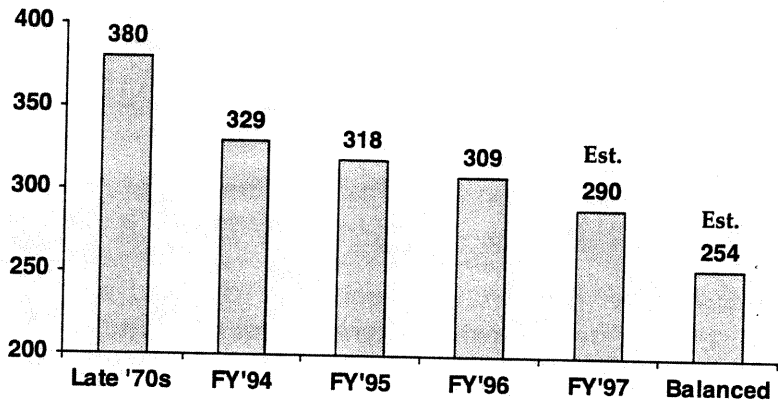




# Wisconsin High School Graduates



# CALS Total Faculty FTEs



**WHY:**

Deficit reduction - \$3.0 million

Legislative cuts - \$2.0 million

## Federal Funding Outlook

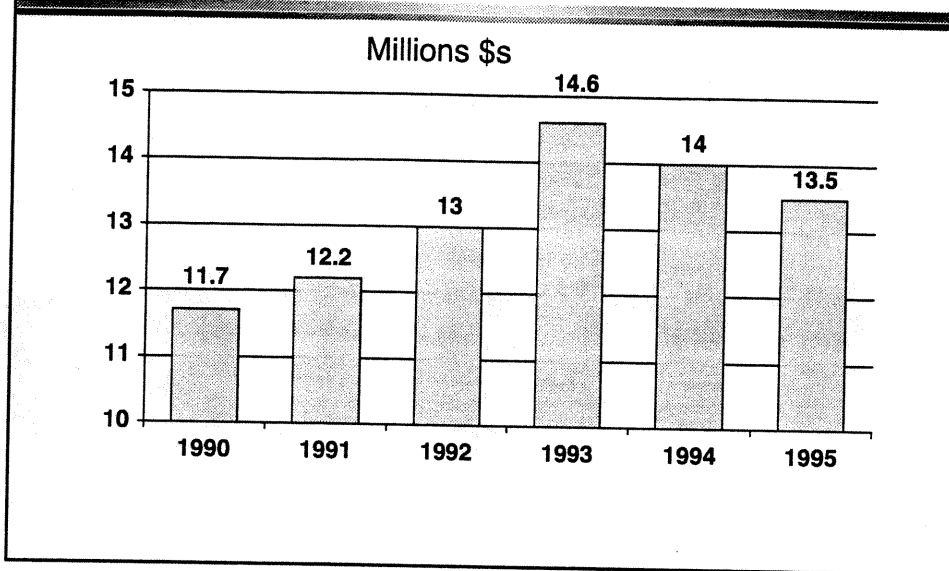
- Budget deficit looms large.
- Research funding may be cut **one-third** if budget comes into balance by 2002.
- Applied research funding may be targeted for special cuts
- CALS will compete effectively for smaller amount of federal basic research funding

## State Research Support for agricultural/natural resources

- **State dollars support research capacity -- salaries**
- **Few state dollars available for applied projects**
- **Federal and private sources provide most project funding**
- **Expect serious shortage of applied research funding that CALS can use to address Wisconsin problems/opportunities**

Double squeeze

## Private/Industry Gifts and Grants



Fastest growing area of support

Very focused, short term outcome orientation

Little support for public good research

Perceived to be tainted, i.e., Monsanto and BST

## State Support for Facilities

- CALS among oldest parts of an old campus
- Project \$700 million need in new and renovated buildings on campus
- Project \$150 million needed in CALS
- Private support carrying large load

*Bill  
Tramm*

One of the most critical needs for the future

## Issues Facing Wisconsin Agriculture

- Economic

- » Agriculture treated as a business
- » Profitability
  - Farmers more in control of price
  - Business management skills
- » Markets (International) and new uses

- Economic

- Agriculture treated as a business **This must be a state policy that penetrates all interactions with ag related industries**
- Profitability - **Key to sustainable ag**
- Markets (International) and new uses - **Need to develop state potential for international marketing**
- Farmers more in control of price - **How can the producer capture a greater portion of the retail dollar**

## Issues Facing Wisconsin Agriculture

### ● Social

- » Major restructuring of agriculture
- » Agriculture in an urban environment
- » Rural community development

### ● Environmental

- » Land use planning
- » Water Quality
  - Waste
  - Pest management

#### •Social

- Changing structure of agriculture - **How many farms can we expect to have in WI**
- Health of our rural communities - **Jobs needed: 61% of farm family income is generated off the farm**
- Urbanization - **85% of Ag production in WI occurs in urban or urbanizing counties!**

#### •Environmental

- Land use planning - **Critical issue to sustainable Ag**
- Waste - **Will limit size of animal ag**
- Pest management - **Major cost and environmental factor**



## Challenges for UW-Madison

- All of the above require a multidisciplinary approaches with outcomes that benefit the general public.
- Source of funds to do this work is unclear.
  - » Federal agencies dropping applied
  - » State funds declining
  - » Industry derives little benefit
- State budget declining for first time in history

## How Are We Changing?

- Downsizing faculty, staff, and Admin
- Reorganizing
  - » Fewer departments
  - » Fewer centers
  - » Fewer majors
- New ways of doing business
  - » Kellogg Project
  - » Interactive with customers
  - » Cooperation with other states

- Downsizing faculty, staff, and Admin  
<221 in 1997 down from        in 1984
- Reorganizing
  - Fewer departments  
merged meat and animal science with poultry science  
CAVE to Education  
LA  
Future about 12 down from 23
  - Fewer centers- Closed 2, More consolidations to come
  - Fewer majors - More interdepartmental  
Closed 3
- New ways of doing business
  - Kellogg Project
  - Interactive with customers
  - Cooperation with other states  
Much done already
    - Potatoes, Vegetables, Dairy with MN
    - Swine and dairy with IA

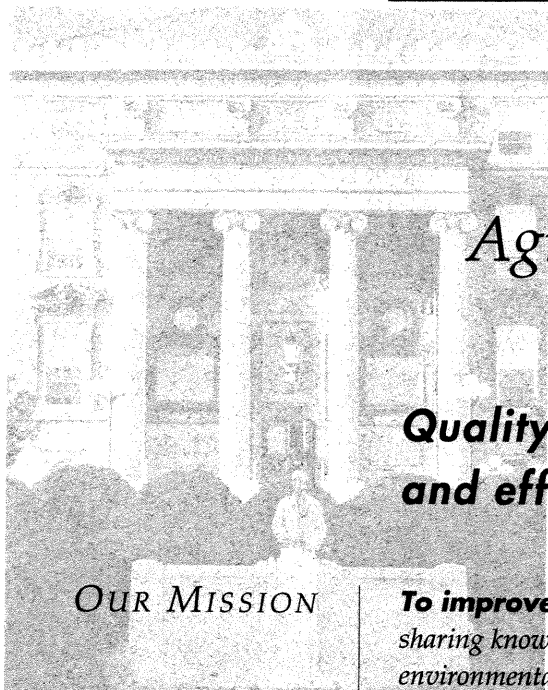
## What are we Doing ?

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- Concentrating on strengths
  - » Great science and graduate education
  - » Responsiveness
  - » Quality undergraduate education
- Do less, Focus more, Maintain Quality
- New and stronger partnerships
  - » Industry
  - » Other states

## Focus and Opportunities

- Focus on Crosscutting Initiatives
  - » Multidisciplinary
  - » Social, economic, environmental dimensions
- A few examples
  - » Alternative Pest Management Strategies
  - » Land Use and Resource Management
  - » Waste Management
  - » Agribusiness Institute



## The College of Agricultural & Life Sciences

**Quality education, superb science,  
and effective response to society's needs**

### OUR MISSION

**To improve the quality of life** by discovering, critically analyzing and sharing knowledge in food and agriculture, the life sciences, natural resource and environmental stewardship, and rural community development.

**To offer strong, research-based education** that is responsive to public needs and sensitive to social, economic and environmental concerns. The college places great emphasis on the discovery of knowledge and is committed to the application of knowledge for society's betterment. The college advances the technical skills and intellectual growth of its students, and all others who seek knowledge. It broadens their appreciation of cultural diversity, promotes environmental stewardship, and helps them solve problems and take advantage of opportunities.

### WHAT WE DO

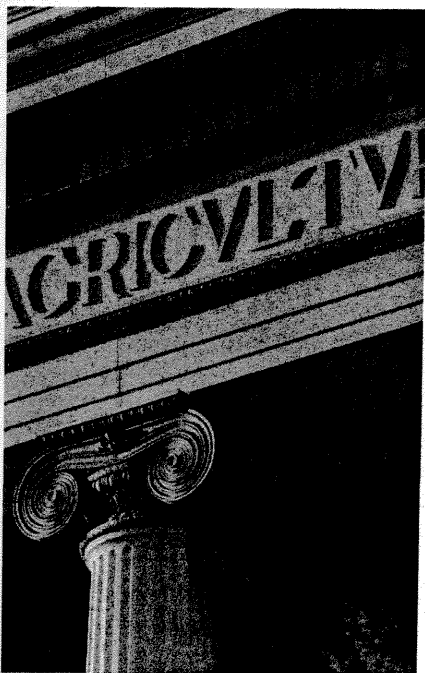
**Instruction.** The science curriculum at the College of Agricultural and Life Sciences covers a broad spectrum of topics related to food and agriculture, biology and biotechnology, natural resources and rural issues. Enrollment in the college's degree-credit program is the largest among agricultural colleges in the state and eighth in the nation. The average high school percentile ranking of the college's 1993 freshman class was 85 — nearly two points above the Madison campus average and well above the average for all other UW-System campuses. The college has awarded more Ph.D. degrees in agricultural and related sciences during its history than any other U.S. agricultural college.

**Research.** CALS is the UW System's primary provider of original research into agriculture, food, natural resources, life sciences, and rural behavioral and social sciences. It trains most of the UW-Madison graduate students studying those subjects, and provides the bulk of the research-based agricultural and natural resource knowledge used in Cooperative Extension programs.

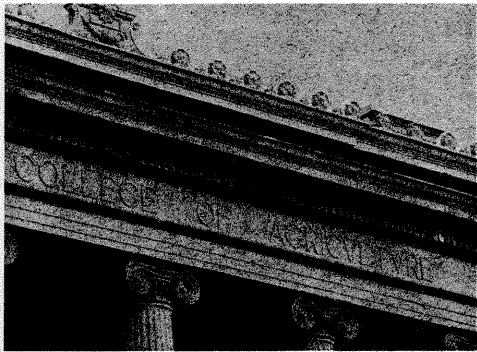
Research laboratories are also great places for undergraduates to learn hands-on science. The college makes a concerted effort to bring interested undergraduates into research laboratories, where they can design and conduct their own research under the direction of some of the university's top scientists.

**Outreach.** All college faculty members are expected to help convey research-based information to those who need it, but this role falls primarily on

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WHAT WE DO  
(continued)



PERFORMANCE

NEW DIRECTIONS

Cooperative Extension. Many CALS faculty and staff have Extension appointments; most of these also do research. As CALS extension specialists work with farmers, natural resource managers, public officials, business leaders and others, they learn first-hand the pressing research questions that are emerging across the state. These questions help guide the college's research program.

**Natural Resources.** The college recognizes the need for wise use and conservation of natural resources. CALS faculty associated with the School of Natural Resources conduct interdisciplinary research and policy analysis to find effective long-term solutions to natural resource issues that span the social, biological and physical sciences. The college's agricultural research program emphasizes environmental protection along with profitability.

**International Programs.** The college helps developing countries improve their ability to produce, process and market food and fiber and to better manage their natural resources. CALS faculty have extensive experience in Central and South America, the Far East, Middle East and Africa. CALS seeks to improve the state's international competitiveness through research and outreach on international trade, collaboration with strong foreign research agencies, and international training programs.

CALS brings in more federal competitive research grant money per researcher than any other U.S. agricultural research institution. CALS ranks among the leaders in number of peer-reviewed scholarly journal articles published per researcher.

CALS has more past and present faculty members elected to the National Academy of Sciences — the nation's pre-eminent science honor society — than any other agricultural college in the nation.

CALS has long been considered a leader among U.S. land grant agricultural colleges. Peer rankings by scholars in various disciplines support this: Six CALS departments rank first in the nation and none ranks lower than eighth. CALS awards more graduate degrees than any other U.S. agricultural college.

Through the Center for Biology Education, the college leads a campus-wide project to train and assist elementary and high school teachers with new approaches to instruction and research in the biological sciences.

The School of Natural Resources gives CALS considerable research capacity in ecological restoration, sustainable agriculture, wildlife ecology, forestry and other environmental matters. The integration of agricultural practices and environmental protection continues to be a central thrust of the School of Natural Resources.

Concerted efforts will continue in the areas of food safety, genetic engineering, new food and non-food items from agricultural products, agricultural marketing and nutritional well-being.

Through the nation's first Bachelor of Science in International Agriculture and Natural Resource degree, CALS is preparing students for a global future.



# The College of Agricultural & Life Sciences

## IMPACT REPORT

### *Examples of how Wisconsin's research investment pays off*

*As a land grant college, part of the mission of the College of Agricultural and Life Sciences is to conduct practical, problem-solving research. The people of Wisconsin help fund this research effort, along with support from federal and non-governmental sources. Following are a few examples of how our research is being applied to help people solve problems and take advantages of opportunities.*

#### Returns on investments in food processing and marketing research.

**Eliminating a \$6-million-a-year sales loss.** Norm Olson and others at the College's Center for Dairy Research found a way to eliminate a \$6-million-a-year problem for Wisconsin cheese makers. That was the cost of sales lost when consumers rejected Cheddar-type cheeses coated with an unattractive, but harmless, white haze. CDR researchers developed low-cost ways to eliminate the haze. The research cost \$87,000.

**A new use for beets and a new product for a Wisconsin food processing firm.** A Wisconsin firm is supplying red dye from beets to the food industry, with help from CALS research. The natural dye, used in a wide variety of meat, bakery, gelatin and related products, is an alternative to synthetic food colorants. Food scientist Joe von Elbe saw a market for natural dyes in the 1970s and began studies to determine their uses in foods. Over a 15-year period, vegetable breeder Warren Gableman developed beet varieties with more than twice the concentration of red pigment as regular beets. The Wisconsin plant that grows the beets is the nation's primary producer of beet dyes.

**Low-fat and low-sodium cheeses.** A team of College food scientists is working on new cheese cultures that will help produce low-fat and low-sodium cheeses with improved flavor and texture.

**Super-sweet corn tailored to Wisconsin.** Sweet corn breeder Bill Tracy aims to get Midwesterners their first ears of the summer a bit sooner. He has developed a half-dozen commercial varieties of super-sweet corn. He's now developing super-sweet corn lines that tolerate cold better and can be planted earlier in Wisconsin.

**Vitamin E keeps the red in red meat.** In response to a concern expressed by a Wisconsin meat packer, animal scientist Dan Schaefer discovered that meat from steers fed extra vitamin E stayed fresh-looking up to five days longer in supermarket coolers. The meat will still turn from red to brown before harmful bacteria develop. If adopted nationwide, the practice could save the beef industry nearly a billion dollars annually.

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**A warning call on a \$50-million marketing problem.** Economist Bruce Marion has testified before Congress about results of his studies of structural changes and market concentration in the meat packing industry. Marion's research sounded a warning call to Wisconsin livestock producers. He showed that a nationwide shift toward fewer, larger meat packing firms cost cattle feeders \$50 million each year nationwide; locally, it means the Wisconsin swine farmers earn \$1.50 per hundredweight less than Iowa farmers when they sell their animals.

**European-style cheeses give Wisconsin a new market niche.** Food scientist Bob Lindsay studies the mix of molecules that give foods their unique and subtle flavors. His studies helped a CALS team develop domestic versions of high-value specialty cheeses, such as Havarti and Jarlsberg, a sweet-type Swiss. Lindsay's research on maple syrup showed how syrup makers can improve the consistency of their product and maximize its flavor. Other research findings have helped the DNR set wastewater treatment policies that have helped improve the flavor of sportfish caught in the Wisconsin River.

**Eggs with less fat and cholesterol: A new market for a Wisconsin company.** Poultry scientists Art Maurer, Bernie Wentworth and Mark Cook worked with graduate student John Brunnuell to develop a method to produce shell eggs with 25 percent less fat and cholesterol than regular eggs. WARF licensed the method to Century Acre Eggs of Port Washington, which will franchise the method to other egg producers. The Reedsburg Egg Company, the first franchise holder, sold \$69,000 worth of the eggs during its first four months of operation in 1994. Century Acre Eggs hopes to issue franchises in other states soon.

## Returns on investments in food production research.

**Cutting \$1 million in production costs also improved environmental quality.** A comprehensive program to manage potatoes is a national model for growing crops with minimal chemical inputs. Developed by a CALS team, the program saves Midwestern potato growers nearly \$1 million a year in pesticide and irrigation costs while improving environmental quality.

**Why the nation's biggest potato chip makers came back to Wisconsin.** A potato cultivar named Snowden, developed by geneticist and breeder Stan Peloquin, has brought the chip potato industry back to Wisconsin. Since Snowden was released in 1990, the nation's two largest potato chip manufacturers have been shifting potato contracts from Minnesota's Red River Valley to Wisconsin's Central Sands. They like Snowden's chipping characteristics and storability. One Wisconsin grower says his sales have gone from \$180,000 to \$9.5 million in four years, all due to Snowden. In 1994 Snowden ranked third among cultivars in terms of U.S. acreage planted.

**Soybean growers can boost yields and profits by 15 to 30 percent** if they rotate soybeans with corn or wheat rather than growing beans year after year, CALS research shows. Soybeans are an increasingly important crop for Wisconsin farmers, but the crop is "rotation sensitive" and prone to diseases. Agronomist Ed Oplinger estimates that 80 percent of Wisconsin farmers now rotate soybeans with a second crop, thus earning an additional \$23 to \$46 million during the years they plant beans. During corn years, the rotation also boosts yields for that crop by 10 percent, resulting in even greater profits, Oplinger says.

**Farmers save millions by following CALS field trials.** Whether it's a Door County orchard owner selecting new apple trees or a farmer picking corn, soybean, oat or alfalfa varieties, Wisconsin growers depend on the plant variety evaluations CALS scientists carry out each year around the state. For example, a recent study showed that almost 60 percent of Wisconsin farmers depend primarily on the CALS evaluations when selecting alfalfa varieties. By harvesting alfalfa varieties that rank in the top 10 percent rather than varieties that produced the average yield, farmers earned an additional \$55 million in 1994.

**New biological control agent will protect soybeans from root disease.** Farmers who now apply a fungicide to protect young soybean plants from root rot will soon be able to protect the crop with a biological control agent discovered by CALS plant pathologist Jo Handelsman and her colleagues. The bacterial agent is being marketed by LiphaTech of Milwaukee, which hopes to have products ready for farmers in 1995. The company expects the new product to cost considerably less than the \$12 to \$20 per acre farmers now spend on the most effective chemical fungicide. That could amount to a \$2 million savings per year for soybean growers if half of them use it and the new agent costs \$5 less per acre than the fungicide.



**A natural compound could shave millions off the cost of producing meat animals.** Mike Pariza of the CALS Food Research Institute and poultry scientist Mark Cook found a way to reduce the amount of feed needed to grow animals. The method involves adding a compound called conjugated linoleic acid to livestock diets. A Wisconsin company has licensed the technology from WARF. Cook estimates that Wisconsin's poultry industry could save \$1 million each year in production costs and foresees much larger savings for the cattle and swine industries.

**In one crop alone, an extra \$2 million to \$4 million annually from improved varieties.** CALS plant breeders improve small grains, field corn, soybeans, grasses, peas, clover, alfalfa, sweet corn, potatoes, onions, carrots, beets and other crops for Wisconsin farmers and consumers. The improved plant varieties make a big difference. Just consider one crop, oats. With a state investment of approximately \$150,000 a year, Wisconsin farmers benefit to the tune of \$2 million to \$4 million in higher yields each year by planting CALS oat varieties developed for Wisconsin rather than planting oats developed elsewhere.

**Wisconsin corn farmers could get by with 10 to 30 percent less nitrogen fertilizer,** thus improving profitability while helping to protect the state's groundwater, thanks to research by soil scientist Larry Bundy. Bundy has developed tests that help farmers adjust fertilizer applications based on how much nitrogen is already available in the soil. Farmers who apply less nitrogen based on Bundy's research can save \$10 to \$20 per acre. Bundy conservatively estimates that Wisconsin corn farmers currently save nearly \$2 million by following this practice. If all corn farmers followed these recommendations the savings could be 20 times greater, Bundy says.

**Cutting fertilizer and herbicide bills without cutting yields.** The Nutrient and Pest Management Program has shown that many corn growers can cut their fertilizer and herbicide bills without sacrificing yields by following recommendations developed through CALS research under Wisconsin conditions. Over the past five years, the NPM program cooperated with Wisconsin farmers on 167 demonstrations, attracting more than 3,000 visitors to field days. Field-day participants learned that cooperating farmers would have earned an average of \$18 more per acre for their corn by following NPM's recommended practices rather than those farmers' standard practices.

## Returns on investments in human nutrition, health and biomedical research.

**Safer drinking water and animal feeds.** Food toxicologist Fun Sun Chu has pioneered state-of-the-art tests for measuring natural toxins in feed and water. In 1993, Chu cooperated with the DNR and communities around Lake Winnebago to test drinking water supplies there for toxins from lake algae. In a letter to UW-Madison Chancellor David Ward, DNR Secretary George E. Meyer praised Chu, writing in part: "His willingness to help . . . went beyond what would normally be expected. In addition to assisting with use of his test, he worked closely with us as we developed a sampling strategy, he visited and met with those in the Fox River communities who were cooperating with us, and he did an excellent job maintaining a positive and professional approach as results of the study were being followed closely by the Milwaukee and Fox Valley media."

**Tens of thousands avoid bone degeneration.** Biochemist Hector DeLuca's vitamin D research led to one drug that has saved tens of thousands of individuals with kidney disease from serious bone degeneration and helped many others with a type of rickets or parathyroid problems. His work also led to a drug that has treated hundreds of thousands worldwide for osteoporosis. DeLuca's current research on vitamin D analogs may produce treatments for diseases ranging from psoriasis to some forms of cancer.

**Understanding how the immune system works is a key to controlling Lyme disease** and other infectious diseases. Biochemist Colleen Hayes studies the role that vitamin A plays in controlling the body's immune responses. (Immune response falls when vitamin A levels fall.) She plans to test whether vitamin A can reduce inflammation by studying its role in controlling the arthritis-like symptoms common in Lyme disease.

**Thousands are finding relief from painful involuntary muscle contractions** through injections of one of the world's most potent poisons, botulinum toxin, licensed in 1989 as an orphan drug. Edward Schantz, a biochemist and food scientist, grew and purified the toxin used in clinical trials. He remains the only source for all the toxin used today by physicians in the United States and several other countries.

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**Using biotechnology to make a cancer-fighting compound.** Horticulture scientists Brent McCown and Dave Ellis are using biotechnology to attempt to extract taxol, a cancer-fighting compound, from yew cells grown in culture rather than from yew trees in the Pacific Northwest. In the 1980s, McCown became the first individual to genetically engineer woody plants and evergreens.

**A research model for heart diseases.** Animal scientists and biochemists have identified and are maintaining distinct strains of swine that differ dramatically in their susceptibility to atherosclerosis. The animals show that genetic patterns play a dominant role in heart disease, the nation's number one killer. This ideal animal model of heart disease is playing an important role in efforts to increase our understanding of heart disease and ways to treat it.

**Your health may depend on plant compounds that aren't nutrients or vitamins.** Nutritional scientist Charles Elson is studying between 30 and 40 related compounds found in fruits and vegetables that protect against cancer and heart disease. He is now testing the strength of the compounds — all isoprenoids — and studying exactly how they work. Several are being evaluated at high concentrations as a potential treatment for cancer and elevated cholesterol. The compounds are so powerful, says Elson, that if you eat a diet based on the USDA's Food Pyramid guidelines you will probably consume enough to suppress cholesterol production and inhibit tumor growth.

**More vitamin A from carrots.** Americans now get a third of their vitamin A — an essential nutrient — from carrots. The level of beta carotene, the precursor of vitamin A, in carrots has doubled over the last 30 years, thanks largely to carrot breeding lines developed in the CALS horticulture department by USDA scientists Clint Peterson and Phil Simon. Simon recently developed a carrot line with five times the beta carotene content of typical carrots. He says farmers may soon be growing them just to extract the beta carotene as a food supplement.

## Returns on investments in natural resources and waste management research

**Turning an irksome waste product into a valuable manufacturing material.** Food scientist Jim Steele has developed bacteria that change a cheese-making waste product into a valuable byproduct. The bacteria convert lactose in whey from cheese plants into a form of lactic acid that can be converted to polyactide polymers — giant molecules which can be used to make biodegradable films for an array of recyclable paper products.

**New manufacturing uses for wood fibers.** Wood chemists Roger Rowell and Ray Young are modifying wood fibers chemically to make wood more versatile for manufacturing. They mix wood fibers with polyester or plastic, creating composite materials that can be molded into circuit boards, furniture, and interior panels for cars.

**Pine and spruce could grow 10 to 30 percent faster.** Forest geneticist Ray Guries has developed genetically improved pine and spruce trees expected to grow 10 to 30 percent faster and have better stem form and greater disease resistance than trees previously available. In 1994, most of the 4 million jack pine and white spruce seed sown in the DNR's forest nurseries for planting by Wisconsin's citizens and forest industries came from Guries' work. In 1990 — the most recent year for which data are available — loggers harvested more than 646 thousand cords of pine and spruce in Wisconsin where mills turned them into paper products. Guries expects similar improvement in the next round of selection on jack pine and white spruce; he is also working on improving red pine.

**Cities and towns in Wisconsin and across the country are planting elms again** because CALS research continues to produce new elms resistant to Dutch elm disease. During the past 20 years, plant pathologist Eugene Smalley has patented and released five elm varieties — Saporro Autumn Gold, Regal Elm, Cathedral Elm, American Liberty Elm and New Horizons Elm. Tens of thousands of these elms are propagated and sold each year — both in the United States and Europe — primarily for planting in urban areas.

**Restoring Wisconsin's prairies.** Landscape architect John Harrington is working to preserve, restore and manage Wisconsin's prairies. Harrington is evaluating ways to restore prairies along railroad lines and establish new ones along highways. He's also helping a Racine high school class develop a prairie there.

*If you would like more information about these or other research projects, write the College of Agricultural and Life Sciences, 1450 Linden Dr., Madison, WI, 53706. Or call (608) 262-4930.*

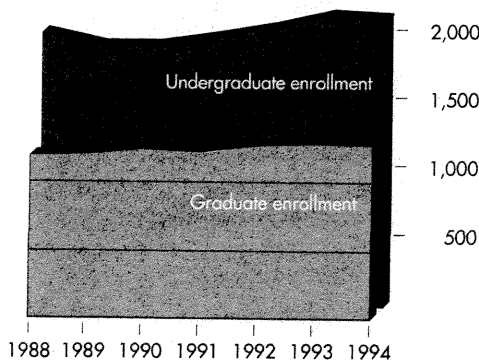
## SOME FACTS & FIGURES

**Return on the research investment.** The state provides base salary for scientists, who then attract research grants — more than \$47 million last year. For every dollar the state puts into the research effort, the college's scientists generate more than two additional dollars. Using a standard multiplier of three, this outside funding has an estimated economic impact of more than \$140 million on Wisconsin's economy. However, the big payoff comes in the students trained, in advances in fundamental knowledge, and in new ideas for improving food safety and nutrition, managing natural resources and producing, processing and marketing food.

**Staffing changes.** During the 1993-94 fiscal year, the college employed 329 faculty, 534 academic staff, and 378 classified staff. The college currently is undergoing a gradual downsizing, which is expected to reduce the faculty by approximately 30 positions and other staff by about 40 positions.

**Enrollment trends.** While undergraduate enrollment has dropped since peaking in 1980-81 (2,634), it is still well above 1970 levels (1,073). Student numbers declined during the 1980s in reaction to difficult financial times in rural America — a trend which affected most U.S. agricultural colleges. Many suffered declines larger than those experienced here. In the fall of 1994, undergraduate enrollment was up more than 11 percent from the recent 1990 low. Strongest enrollment growth has been in dietetics, biochemistry, wildlife ecology, meat and animal science, soil science and genetics. Highest enrollments are in bacteriology, biochemistry, genetics, landscape architecture and wildlife ecology. Strong demand exists for graduates in most agriculturally related areas, and new college efforts are under way to attract young people to these promising career areas.

Graduate enrollment has risen steadily from the 1970 level (908).

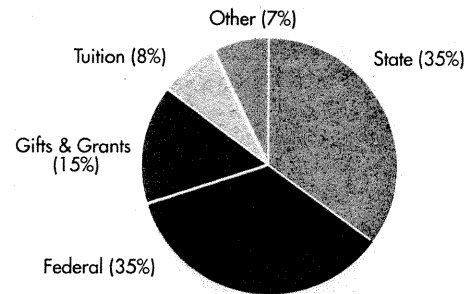


### Fall 1994 enrollments:

Undergraduate: 2,100.

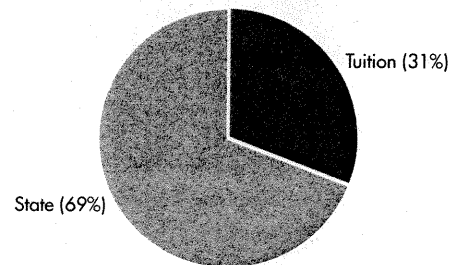
Graduate: 1,257.

### WHO FUNDS THE COLLEGE



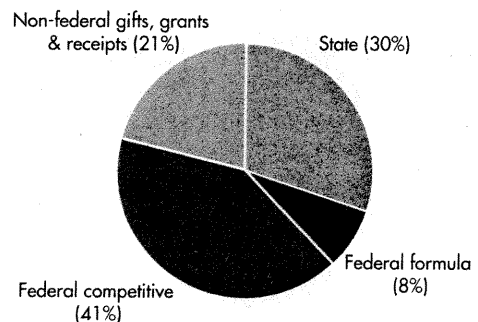
1992-93 operating budget: \$104.7 million

### WHO PAYS FOR INSTRUCTION



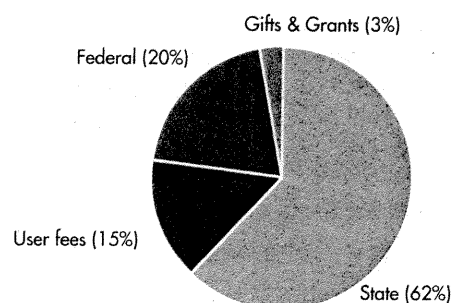
The UW-System sets resident, undergraduate tuition at a level that covers approximately one-third of the cost of instruction.

### WHO PAYS FOR RESEARCH



1992-93 research budget: \$67.3 million

### WHO PAYS FOR OUTREACH



# THE COLLEGE OF AGRICULTURAL & LIFE SCIENCES

## How To Get in Touch:

### CALS ADMINISTRATION

#### Dean's Office

Roger Wyse, Dean

(608) 262-4930;

Fax: (608) 262-4556

Neal Jorgensen,

Executive Associate Dean

(608) 262-9812

Len Maurer, Assistant Dean

(608) 262-5570

#### Student Affairs

Richard Barrows, Associate Dean

(608) 262-3003

#### Research Division

Robert Steele, Associate Dean

(608) 262-2397

#### Extension and Outreach

Edward Jesse, Associate Dean

(608) 262-4591

#### School of Natural Resources

Donald Field, Associate Dean

(608) 262-6968

#### International Programs

Kenneth Shapiro, Associate Dean

(608) 262-1271

#### Agricultural Research Stations

Dale Schlough, Interim Director

(608) 262-2757

#### Director of Development

Marcy Schultz Heim

(608) 263-6669

#### Farm and Industry

##### Short Course

Rick Daluge, Assistant Dean

(608) 263-3918

#### Student Enrollment Information

Elizabeth McCarthy

(608) 265-2051

#### Career Advising

Scott Johnson, Assistant Dean

(608) 262-3001

### ACADEMIC DEPARTMENTS

#### Agricultural Economics

(608) 263-4472

#### Agricultural Engineering

(608) 262-3310

#### Agricultural Journalism

(608) 262-1464

#### Agronomy

(608) 262-1390

#### Animal Health and Biomedical Sciences

(608) 262-3177

#### Bacteriology

(608) 262-2975

#### Biochemistry

(608) 262-3040

#### Continuing and Vocational Education

(608) 263-5893

#### Dairy Science

(608) 263-3308

#### Entomology

(608) 262-3227

#### Food Science

(608) 262-3046

#### Food Microbiology and Toxicology

(608) 263-7777

#### Forestry

(608) 262-9975

#### Genetics

(608) 262-1069

#### Horticulture

(608) 262-1490

#### Landscape Architecture

(608) 263-7301

#### Meat and Animal Science

(608) 263-4300

#### Nutritional Sciences

(608) 262-2727

#### Plant Pathology

(608) 262-1410

#### Poultry Science

(608) 262-1243

#### Rural Sociology

(608) 262-1510

#### Soil Science

(608) 262-2633

#### Wildlife Ecology

(608) 262-2671

### CENTERS FOR INTERDISCIPLINARY RESEARCH AND OUTREACH

#### Agricultural Research Stations

Campus: (608) 262-0744

Arlington: (608) 846-3761

Ashland: (715) 682-6844

Hancock: (715) 249-5961

Lancaster: (608) 723-2580

Marshfield: (715) 387-2523

Spooner: (715) 635-3735

Sturgeon Bay: (414) 743-5406

#### Agricultural Technology and Family Farm Institute

(608) 265-2908

#### Wisconsin Fast Plants and Bottle Biology Program

(608) 263-2634

#### Applied Population Laboratory

(608) 262-1515

#### Aquaculture Program

(608) 263-1242

#### Babcock Institute for International Dairy Research and Development

(608) 262-4621

#### Center for Biology Education

(608) 263-0478

#### Center for Dairy Profitability

(608) 263-5655

#### Center for Dairy Research

(608) 262-5970

#### Center for Integrated Agricultural Systems

(608) 262-5200

#### Environmental Resource Center

(608) 262-0020

#### Environmental Toxicology Center

(608) 263-4580

#### Institute for Muscle Biology

(608) 262-0463

#### Land Information and Computer Graphics Facility

(608) 263-5534

#### Land Tenure Center

(608) 262-3657

#### Nutrient and Pest Management Program

(608) 262-4326

#### Small-Scale Waste Management Project

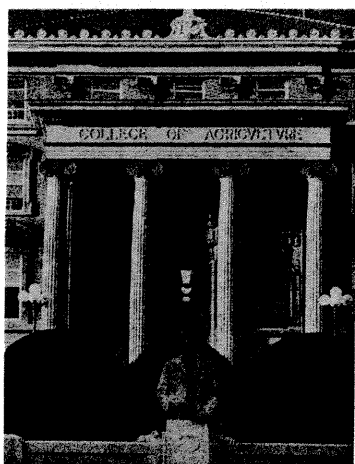
(608) 262-0853

#### University Center for Cooperatives

(608) 262-3382

#### Dairy Forage Research Center

(608) 263-2030



Mailing address: College of Agricultural and Life Sciences  
1450 Linden Drive, Madison, WI 53706

Directory Assistance for the UW-Madison: (608) 262-1234

# UNIVERSITY OF WISCONSIN-RIVER FALLS USDA CHALLENGE GRANTS PROGRAM

## VIRTUAL CLASSROOM: DEVELOPING PEDAGOGY AND PROCEDURES PROJECT SUMMARY

With recent technological advances, interactive television has become a viable medium for distance education. But two problems have arisen: most faculty do not know how to teach over this unfamiliar medium, so different from the traditional classroom, and most universities do not know how to administer classes taught *via* interactive TV.

This proposal comes from the four public universities in Wisconsin which offer programs in agriculture and natural resources: UW-Madison, UW-River Falls, UW-Stevens Point, and UW-Platteville. All four institutions have begun using interactive TV to teach courses. Some courses are offered to students at sites remote from our campuses, some are offered electronically at other institutions. We plan to do much more. But our faculty need to learn appropriate teaching methodologies for interactive TV and our administrators need to learn how to apportion credits and tuition, how to reward faculty, how to schedule inter-institutional interactive TV courses.

We propose a two-year joint project between these four institutions. Our plan is to engage a Project Director (Gary E. Rohde, Dean, College of Agriculture, UW-River Falls) and Project Assistant, co-Project Directors on each of the campuses (Chere Gibson, UW-Madison, who will also serve as Project Consultant; Katrina Larsen, UW-River Falls; Mark Zidon, UW-Platteville; and Rick Wilke, UW-Stevens Pt.), and three faculty from each campus. (Each of these appointments is one-fourth or one-third time.) The co-PD's and participating faculty from each institution will form campus teams devoted to preparing one interactive TV course which will be scheduled for a site off-campus or at another institution for 1996-97. All participants will join in a monthly teleconference to plan these courses, discuss appropriate pedagogy, and resolve administrative issues. During summer, 1996, all project participants will attend the Teaching at a Distance conference in Madison. Immediately following that conference, participants will gather in River Falls to further develop their courses and present sample classes to each other over the wire, thereby field testing their pedagogy.

During 1996-97, we will offer the four interactive TV courses we have prepared. We will continue to discuss pedagogical and administrative issues in our monthly teleconferences. Our Project Consultant and Project Assistant will investigate how well it all works: do students learn? Are institutions and faculty fairly compensated? Does interactive TV save resources? They will compile a comprehensive final report which we will publish both electronically and in the traditional fashion.

This project is complementary to one current and two pending Challenge Grants: *Electronic Distance Delivery of Agriculture Courses*, funded 1994-97, \$71,605, Katrina Larsen, UW-RF, PD; *Teaching at a Distance: Training Faculty for Interactive TV*, pending, \$80,000, Katrina Larsen, UW-RF, PD; and *Teaching in a Virtual Classroom: Developing Courses and Assessing Learning Styles*, pending \$80,000 Mark Zidon, UW-Platteville, PD.

## Michigan Animal Initiative

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### ■ Background

- Property tax relief tightened state budget
- Deep industry concern -- it led funding charge
- Michigan has experiment station budget line
- Animal ag research not priority in MSU budget priorities

### ■ Proposal

- Facilities building and renovation to strengthen animal programs
- Base budget add for animal research, extension, instructions -- positions and projects

## Michigan Animal Initiative

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### ■ Strategies

- Client groups led effort, with support from MSU faculty
- Initiative outside MSU budget building
- Broad support coalition made lobbying effective
  - » 20 organization leaders formed committee
  - » Five person executive group worked with College
- Users, not university people, contacted legislators
- Broad faculty agreement -- animal initiative priority
- Extension other faculty supported in public meetings

### ■ Outcomes

- \$70 million one-time funding for new and renovated buildings and facilities
- \$4 million base add for positions and programs

## Michigan Animal Initiative

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### ■ Outcomes, continued

- University hard feelings -- base may be transferred through Michigan Dept. of Agr.

### ■ Future Plans

- Resolve fund transfer problem
- Launch Green Initiative with plant client groups in state

## Iowa State 3X5 Program

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### ■ Background

- Born in 1980s farm crisis
- Intense political concern about future of Iowa ag -- 40% of state jobs
- Leopold Center formed outside ISU with pesticide fees and tax dollars, and given to ISU to administer
- Experiment Station has line in budget, but must go up as part of overall university budget
- ISU had low state support for ag research (about \$15 million at start)

### ■ Proposal --Three pronged attack

- 3X5 base support for research positions and programs -- \$3 million per year for 5 years

## Iowa State 3X5 Program

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### ■ Proposal, continued

- Improved faculty salaries
- New and renovated buildings

### ■ Strategies for 3X5

- ISU faculty capitalized on political/public concerns
- ISU campus administration supported and encouraged
- Developed effective interactions with client groups
- Great emphasis put on ISU faculty listening and responsiveness
  - » Paychecks
  - » Grants vs. constituent contacts
  - » Campaign helped develop closer relations to client groups

## Iowa State 3X5 Program

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### - Strategies, continued

- Four major program areas evolved
  - » Biotechnology - molecular biology
  - » Environment and natural resources
  - » Rural development and rural policy
  - » Value added, new products and marketing strategies
- ISU developed comparative data on Iowa ag research funding
- Faculty worked with client groups to develop support structure -- but ISU led the charge
  - » Statewide farm leader group of about 50 formed, sole purpose to advance 3X5
  - » Support network developed to each county



## Iowa State 3X5 Program

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### ■ Strategies, continued

- Client groups did most of the Legislative contacts
  - » ISU supported efforts with information and other backup
- Lobbying effort went on for six years
  - » Two positions in deans office work on state and federal relations

### ■ Outcomes

- 3X5 research initiative
  - » \$15 million over six years (1989-'94)
    - State ag research now about \$35 million a year
  - » Extension lost about 23% of positions during same period
  - » Instruction programs went from \$15 million to \$11 million

## Iowa State 3X5 Program

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### ■ Outcomes, continued

- Faculty salary levels increased 33% over six years
- More than \$50 million in buildings
  - » federal, state and private
  - » \$26 million more in next budget
- Solid relations with client groups
- Excellent relations with Legislators and Governor's office
  - » Senate leader contacted ISU to lead new \$10 million animal waste project

### ■ Future Plans

- 3X5 committee active, working broader agenda
- fed and state outlook bleak, private is most promising
  - » Check offs
  - » Research grants

# Illinois CFAR

## Coalition for Food & Agricultural Research

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### ■ Background

- Illinois ag research funding low given ag importance in state
  - » Ranked 29th among experiment stations, want to move into top tier

### ■ Proposal

- Increase state funding for ag research by \$15 million over five years
- Applied research emphasis, but market broad spectrum of basic and applied

### ■ Strategies

- Started two years ago with great emphasis on listening to customers
  - » Kellogg Foundation grant support

# Illinois CFAR

## Coalition for Food & Agricultural Research

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### ■ Strategies, continued

- Developing new ways to show research impacts and market those impacts to client groups
- Borrowed Iowa's 3X5 experience
  - » Faculty training session
- UI faculty provide backup -- client groups do legislative contacts
  - » Ag and natural resources coalition formed
  - » In exchange for support, coalition members advise research agenda, have special research reporting sessions

### ■ Outcomes

- \$3 million base research add this year
- Much stronger partnership with client groups

# **Illinois CFAR**

## **Coalition for Food Agricultural Research**

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### **■ Future Plans**

- Continue coalition building
  - » Marketing specialist brought on admin staff
- Governor committed to next \$6 million of funding
  - » Legislative battle will be difficult

## **Summary**

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- **New state dollars for ag and natural resources research possible, even during difficult budget times.**
- **College must have or develop close partnership with support groups.**
  - Responding to real needs is key.
- **Pick objectives & agenda carefully -- all support top objective.**
- **User groups, not university people, must lobby the legislature and Governor**
  - University should play support role



COLLEGE OF AGRICULTURE

UNIVERSITY OF WISCONSIN-  
RIVER FALLS

PRESENTATION TO THE  
STATE OF WISCONSIN  
ASSEMBLY AGRICULTURE  
COMMITTEE

NOVEMBER 30, 1995  
BY Dr. Gary E. Rohde, Dean

# COLLEGE OF AGRICULTURE UW-RIVER FALLS

## CRITICAL COMPONENTS OF A COMPREHENSIVE UNDERGRADUATE COLLEGE OF AGRICULTURE

*Employment needs.*

- FULL ARRAY OF MAJORS  
(SEE ATTACHED WHEEL)
  - UNDERGRADUATE FOCUS
  - INTEGRATION BETWEEN DISCIPLINES
- FOCUS ON BUSINESS, SCIENCE, TECHNOLOGY,  
PRODUCTION, AND EDUCATION
- STRONG FACULTY THAT WANT TO TEACH
  - EXTENSION/OUTREACH OPPORTUNITIES
- INTEGRATION OF CLASSROOM AND LABORATORY  
ACTIVITIES
- INTERNSHIPS
- LINKAGE WITH HIGH SCHOOLS & TEACHERS -- AG ED
- ACTIVE STUDENT ORGANIZATIONS  
-- JUDGING -- LEADERSHIP
- INTERNATIONAL STUDY OPPORTUNITIES
- STATE-OF-THE ART INSTRUCTIONAL TECHNOLOGY  
-- COMPUTERS/CAPITAL

# COLLEGE OF AGRICULTURE UW-RIVER FALLS

## CURRENT STATUS

### ■ ENROLLMENT

(SEE ATTACHED 5-YEAR ENROLLMENT SUMMARY BY MAJOR)

- \* 1305 FIRST MAJORS IN FALL SEMESTER 1995
- \* 15% INCREASE OVER PAST 5 YEARS

### ■ NUMBER OF PROGRAMS

- \* 14 UNDERGRADUATE PROGRAMS
- \* 2 GRADUATE PROGRAMS

### ■ NUMBER OF FACULTY AND STAFF

- \* 49 FACULTY MEMBERS
- \* 7 ACADEMIC SUPPORT STAFF
- \* 5 CLASSIFIED LABORATORY FARM STAFF
- \* 8 PROGRAM ASSISTANTS

# COLLEGE OF AGRICULTURE UW-RIVER FALLS

## BUDGET TRENDS

(EXCLUDES FACULTY AND STAFF SALARIES)

*60% on Students*

	1991-92	1992-93	1993-94	1994-95	1995-96
TRAVEL	38,100	39,100	38,700	37,800	38,300
SUPPLIES/SERVICES	131,890	132,390	122,246	124,146	123,646
CAPITAL	8,500	7,000	7,500	6,500	6,500
STUDENT ASSISTANTS	18,394	18,394	18,594	18,594	18,594
<b>TOTAL</b>	<b>196,884</b>	<b>196,884</b>	<b>187,084</b>	<b>187,040</b>	<b>185,040</b>

NOTE: Capital expenditures have come almost exclusively  
from laboratory modernization funds.

COLLEGE OF AGRICULTURE  
UW-RIVER FALLS

STAFFING TRENDS

- REDUCTIONS SINCE 1985
  - \* 3.4 TEACHING POSITIONS
  - \* 1.0 PROGRAM DIRECTOR/  
ADMINISTRATIVE POSITION
  - \* .75 PROGRAM ASSISTANT POSITION
  
- ANTICIPATE 1-2 ADDITIONAL POSITION  
REALLOCATIONS PLUS SAVINGS FROM  
RETIREMENTS TO ADD TO INSTRUCTIONAL  
SUPPORT, CAPITAL, SUPPLIES/SERVICES.
  
- CURRENTLY HAVE NEARLY 7 FULL-TIME  
EQUIVALENT COOPERATIVE EXTENSION  
FACULTY POSITIONS.



# COLLEGE OF AGRICULTURE UW-RIVER FALLS

## CHALLENGES -- THE FUTURE

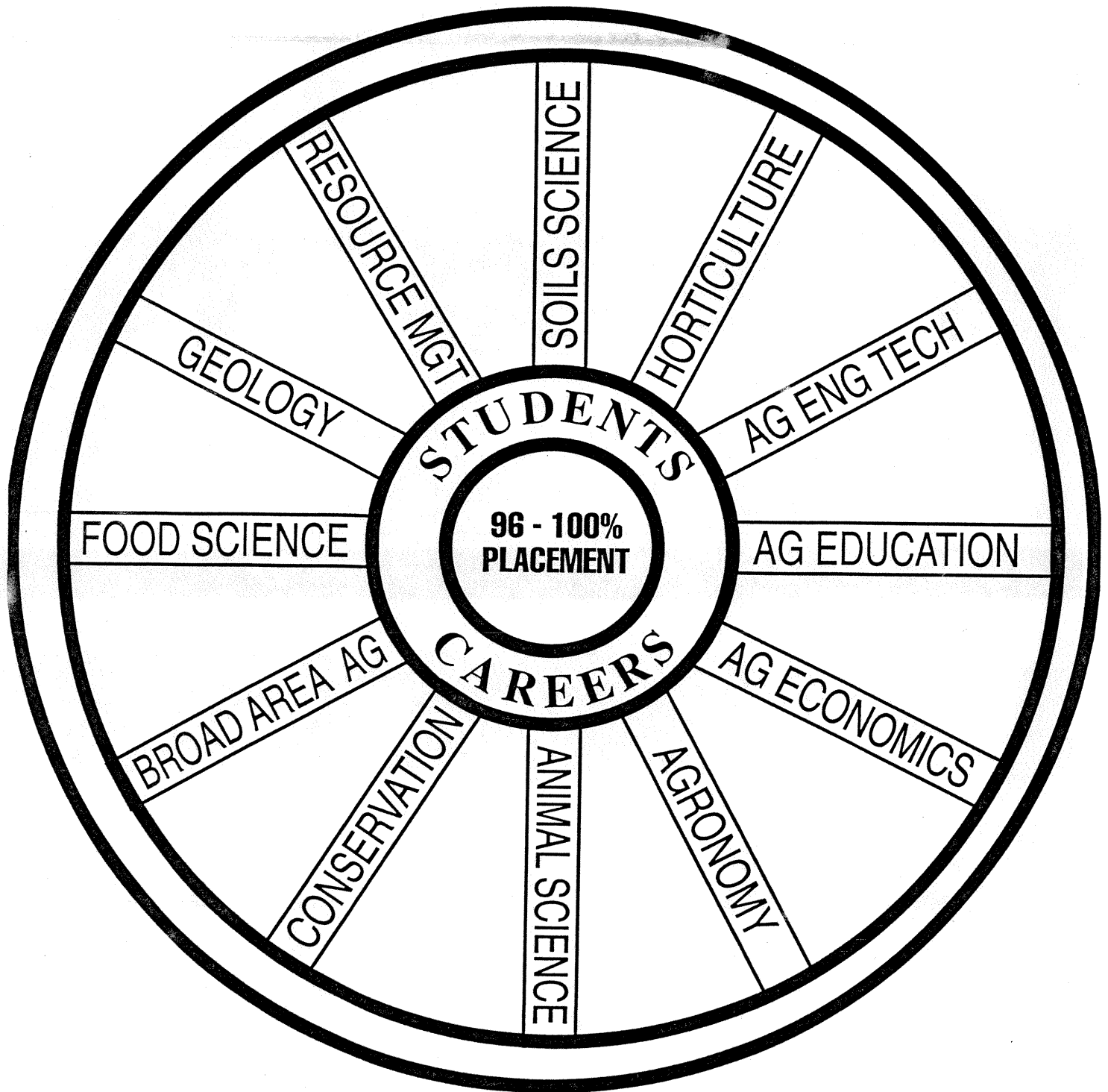
- NAME ADDITION -- TO BECOME A “COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENTAL SCIENCES”
- FUNDING FOR FACILITY UPDATING AND CAPITAL EQUIPMENT (LABORATORY MODERNIZATION PROGRAM IS IMPORTANT)
- ACADEMIC PROGRAM AND NEW COURSE OFFERINGS
  - INTERDISCIPLINARY PROGRAMS
    - » BIOTECHNOLOGY
    - » MARKETING COMMUNICATIONS
  - FUNDING COURSES LIKE PLANT TISSUE CULTURE, HYDROLOGY, LANDSCAPE CONSTRUCTION, COMPUTER DRAFTING, ETC.
  - DEVELOPMENT OF ENVIRONMENT SCIENCE OPTIONS WITHIN PROGRAMS
- MAINTAINING AND EXPANDING COOP ED/ INTERNSHIP PROGRAMS

# COLLEGE OF AGRICULTURE UW-RIVER FALLS

## CHALLENGES -- THE FUTURE (CONT.)

- SUPPORTING APPLIED RESEARCH AND FACULTY DEVELOPMENT
- CONTINUATION OF A RURAL DEVELOPMENT INSTITUTE/AG RESOURCE CENTER AS AN EFFECTIVE OUTREACH-EXTENSION PROGRAM
- STAFFING TO MEET NEW PROGRAM AND STUDENT NEEDS -- COOP EXTENSION SPECIALISTS
- FINANCIAL SUPPORT FOR STUDENT FIELD TRIPS, INTERCOLLEGIATE COMPETITIONS, ATTENDING PROFESSIONAL MEETINGS
- OBTAINING FUNDING FOR A NEW DAIRY TEACHING CENTER *80 cows w/ flexibility*
- DEVELOPMENT OF DISTANCE EDUCATION - STATEWIDE & REGIONAL
- MEETING CHANGING EMPLOYMENT AND CAREER NEEDS OF AGRICULTURAL BUSINESSES AND GOVERNMENT AGENCIES

UNIVERSITY OF WISCONSIN-RIVER FALLS  
COLLEGE OF AGRICULTURE



September 29, 1995

UNIVERSITY OF WISCONSIN-RIVER FALLS  
COLLEGE OF AGRICULTURE

MAJORS:	1991-92 MAJORS		1992-93 MAJORS		1993-94 MAJORS		1994-95 MAJORS		1995-96 MAJORS	
	TOTAL	1ST	TOTAL	1ST	TOTAL	1ST	TOTAL	1ST	TOTAL	1ST
AG BROAD AREA <sup>1</sup>	202	196	234	232	241	237	190	188	216	206
AG BUSINESS <sup>2</sup>	116	108	128	120	118	109	131	125	111	106
AG ECONOMICS	17	12	14	9	18	13	12	10	6	6
FARM MGMT	15	13	19	16	9	7	5	4	2	2
AG EDUCATION	76	71	77	74	89	87	96	96	114	114
AG ENG TECH	52	51	64	63	65	61	61	60	49	49
AG MARKETING	12	11	16	14	16	14	15	13	12	11
ANIMAL SCI	269	250	297	288	279	246	339	324	384	368
FOOD SCI/TECH	38	35	53	49	57	52	54	51	50	49
AGRONOMY	18	18	27	24	41	37	45	43	55	52
CONSERVATION	94	87	106	99	114	98	113	104	114	111
EARTH SCIENCE/ BROAD FIELD SCI <sup>3</sup>	11	10	6	5	14	10	10	9	8	8
GEOLOGY	37	34	38	35	51	45	55	50	49	44
HORTICULTURE	63	61	66	62	67	65	95	92	106	104
LAND MGMT	61	55	61	55	66	55	54	47	46	40
SOIL SCIENCE	17	14	16	13	22	19	20	16	15	14
PRE-FORESTRY	6	4	8	4	9	7	3	2	8	1
PRE-VET <sup>4</sup>	145	101	98	51	88	48	121	24	134	2
BIOTECH-AG	4	4	16	16	19	18	29	23	25	21
TOTALS	1253	1135	1344	1229	1383	1228	1448	1281	1504	1305

This report does not include any of the pre-major students, some of whom will be declaring an agricultural major.

<sup>1</sup> Includes total students in Extended Degree Program: 1991-92 (85), 1992-93 (85), 1993-94 (85). Effective 1994-95 includes students enrolled: 1994-95--17 1st, 18 total majors; 1995-96--22 1st, 33 total majors.

<sup>2</sup> Effective 1994-95 includes students enrolled in Extended Degree Program: 1994-95--6 1st, 7 total majors; 1995-96--2 1st, 2 total majors.

<sup>3</sup> Effective 1993-94 this report reflects Broad Field Science majors with advisors in the College of Agriculture. Earth Science Education is in the process of being phased out.

<sup>4</sup> Effective 1992-93 this report reflects Pre-Vet (Animal Science and Food Science) Majors with advisors in the College of Agriculture. A total of 127 students have Pre-Vet as a 2nd major and Animal Sci or Food Sci as a 1st major.

# UNIVERSITY OF WISCONSIN-RIVER FALLS USDA CHALLENGE GRANTS PROGRAM

## VIRTUAL CLASSROOM: DEVELOPING PEDAGOGY AND PROCEDURES PROJECT SUMMARY

With recent technological advances, interactive television has become a viable medium for distance education. But two problems have arisen: most faculty do not know how to teach over this unfamiliar medium, so different from the traditional classroom, and most universities do not know how to administer classes taught *via* interactive TV.

This proposal comes from the four public universities in Wisconsin which offer programs in agriculture and natural resources: UW-Madison, UW-River Falls, UW-Stevens Point, and UW-Platteville. All four institutions have begun using interactive TV to teach courses. Some courses are offered to students at sites remote from our campuses, some are offered electronically at other institutions. We plan to do much more. But our faculty need to learn appropriate teaching methodologies for interactive TV and our administrators need to learn how to apportion credits and tuition, how to reward faculty, how to schedule inter-institutional interactive TV courses.

We propose a two-year joint project between these four institutions. Our plan is to engage a Project Director (Gary E. Rohde, Dean, College of Agriculture, UW-River Falls) and Project Assistant, co-Project Directors on each of the campuses (Chere Gibson, UW-Madison, who will also serve as Project Consultant; Katrina Larsen, UW-River Falls; Mark Zidon, UW-Platteville; and Rick Wilke, UW-Stevens Pt.), and three faculty from each campus. (Each of these appointments is one-fourth or one-third time.) The co-PD's and participating faculty from each institution will form campus teams devoted to preparing one interactive TV course which will be scheduled for a site off-campus or at another institution for 1996-97. All participants will join in a monthly teleconference to plan these courses, discuss appropriate pedagogy, and resolve administrative issues. During summer, 1996, all project participants will attend the Teaching at a Distance conference in Madison. Immediately following that conference, participants will gather in River Falls to further develop their courses and present sample classes to each other over the wire, thereby field testing their pedagogy.

During 1996-97, we will offer the four interactive TV courses we have prepared. We will continue to discuss pedagogical and administrative issues in our monthly teleconferences. Our Project Consultant and Project Assistant will investigate how well it all works: do students learn? Are institutions and faculty fairly compensated? Does interactive TV save resources? They will compile a comprehensive final report which we will publish both electronically and in the traditional fashion.

This project is complementary to one current and two pending Challenge Grants: *Electronic Distance Delivery of Agriculture Courses*, funded 1994-97, \$71,605, Katrina Larsen, UW-RF, PD; *Teaching at a Distance: Training Faculty for Interactive TV*, pending, \$80,000, Katrina Larsen, UW-RF, PD; and *Teaching in a Virtual Classroom: Developing Courses and Assessing Learning Styles*, pending \$80,000 Mark Zidon, UW-Platteville, PD.