MINUTES

MONTANA HOUSE OF REPRESENTATIVES
51st LEGISLATURE - REGULAR SESSION

SUBCOMMITTEE ON EDUCATION

Call to Order: By Chairman Peck, on January 31, 1989, at 8:00 a.m.

ROLL CALL

Members Present: All

Members Excused: None

Members Absent: None

Staff Present: Keith Wolcott, Senior Fiscal Analyst
Sandy Whitney, Associate Fiscal Analyst
Joe Williams, Budget Analyst, OBPP
Claudia Johnson, Committee Secretary

Announcements/Discussion: Rep. Peck stated that Dr. Tietz needed some time to finish up this morning before the Subcommittee could go on to the next regular agenda.

HEARING ON MONTANA STATE UNIVERSITY

Tape No. K1\1:000

Presentation and Opening Statement:

Dr. Tietz, President of Montana State University, stated that there are two elements to the budget that they needed to present. Dr. Tietz introduced Dr. David Gibson, MSU/UTAP.

Dr. Gibson stated that the University Technical Assistance Program (UTAP) is a very important program for the state of Montana. It is doing exactly the things that the state has been talking about that need to be done to develop the economy. Dr. Gibson stated that the small manufacturing firms in Montana are going to become more economically competitive by providing them with manufacturing management and engineering assistance. UTAP is staffed by a director who is a faculty member in the department of Industrial & Management Engineering and engineering graduate students. The program saves and creates jobs, saves dollars and generates the developing of the economy. UTAP began in 1986 and was initiated by the program that is funded through the United States EPA in their university center program. Dr. Gibson stated that UTAP is designed to provide capital to educational institutions to provide and participate in economic development in areas suffering from high

unemployment and low income. Dr. Gibson stated that UTAP is a perfect match for the mission of Montana's only land grant university. Dr. Gibson stated that during the first year of operation UTAP assisted 85 companies, 16 companies were designated as clients and received extensive assistance. Dr. Gibson stated that in the first year the clients were able to save over $478,000, 23 new jobs were created and 26 jobs were saved from elimination. The EPA funding plans for MSU's UTAP have included grants of $100,000 a year for the last three years. They publish their plans to provide Montana with an additional $100,000 for each of the next three years. In six or seven years they will reduce that support to $50,000 a year, and are looking for a state match. Dr. Gibson stated that they are asking for $100,000 for FY 1990 and $120,000 for FY 1991. See Exhibit 2 from January 30, 1989.

(153)
Dr. Gibson read a letter from George Howard who was a client of the UTAP. See Exhibit 1. Dr. Gibson urged the Subcommittee's support for the budget modification request for UTAP. Dr. Gibson closed stating that he sincerely believe this is a very important program for Montana which provides a very excellent benefit.

(162)
Dr. John Jutila, Vice-President for research at MSU, distributed a handout of a modified program modification. See Exhibit 2. Dr. Jutila distributed a short summary on the research budget for program modifications. Dr. Jutila stated that only 1.1 percent of the MSU budget is dedicated to research and that put them very near the bottom of the peer institutions that they compare themselves to. Dr. Jutila stated that indirect costs that are recovered from grants and contracts so they become a very important investment. The indirect cost program modification calls for 100 percent retention of the indirect costs collected on grants and contracts. In contrast to the 50 percent that is retained by each unit of the University System the investment of these indirect costs provides MSU with a substantial return. See Tables in Exhibit 2. Dr. Jutila stated that at the beginning of 1987, 351 proposals were prepared and the end of FY 1988 there were 577 proposals submitted. Dr. Jutila stated that the increase from 1987-88 was associated with a decline of 56 faculty FTE at MSU. Dr. Jutila stated that at this time last year there were 303 proposals submitted, this year 421 proposals prepared by faculty that not only conduct research but engage in teaching and other public service. Mr. Jutila stated that the increase of 118 will probably be another record level of proposal submission by the end of the year and stated that he estimates more than 700 proposals in national, state agencies, foundations and in corporate American by June 30. The success rate as of June 30 was 46 percent. The water resource program modification has gone through a significant change since it was submitted

at the same time last year. The reason was the significant input of the Legislative Water Policy Committee, the Environmental Quality Council, and discussions that occurred between those groups and the staff/administration at MSU and the other units. Dr. Jutila stated that this is the only agency in the University System that is responsible for the development of in coordination of water resource research and extension in the system. Dr. Jutila stated there was difficulty in bringing all the groups together in the University System so program mod was modified to reflect the needed three changes in administration: 1) to establish the interagency water research policy advisory board which would work under the Commissioner of Higher Education and would also serve to expand the role of current water center advisory committee, by expanding their membership and role in directing the research and the extension of the water center, 2) to expand the role of the water center itself so that it would address the critical issues of Montana water, and resources in a more effective way, and 3) the calls for some additional funds to support the technical outreach of the advanced material center at MSU. This represents an outgrowth of the national science foundation funded program which has referred to this center as a center of excellence for the country. The calls for the funds in the program modification are for technical systems in the form of people who would provide services for both industrial and academic users. In the summary statement, a budget of $152,000 for the first year would fund 4 FTE, 2 professionals and 2 graduate student FTE to provide those technical services to those industrial users in the state and the country. See Exhibit 2. Dr. Jutila stated that a similar amount is needed to provide those services in the second year. The recommendation calls for postponing the up-grade the first year and funding it in FY 1991. Dr. Jutila asked for the Subcommittee's support for the 4th program modification which is titled Toxic Materials Laboratories. See Exhibit 2. Dr. Jutila stated this would support a public service responsibility and would include the Reclamation Research Unit at MSU, Environmental Protection Agency, the Bio-Fisheries Laboratories at MSU, and the Bureau of Mines at Montana Tech. The Toxic Material Center would essentially serve as a conductor for information and technical assistance for the private sector as well as academic and governmental. See Exhibit 2.

(388)
Rep. Marks asked Dr. Jutila if they could not combine the two water advisory committees? Dr. Jutila replied that their position is that the inter-agency water policy advisory committee will function essentially as the oversight committee developing policy and providing direction to the water center advisory committee which he stated is a subcommittee of that inter-agency group and the water center advisory group will have a close relationship with the director to identify the research projects through an

inventory process and a review at the direction of the inter-agency policy committee.

(440)
Sen. Nathe asked Dr. Jutila on the last page of (Exhibit 2) on the toxic materials laboratory, the EPA toxic substance research center, if this is the one that is funded under the Department of Agriculture? Dr. Jutila replied that it is not and stated that this is a recently funded program that is sponsored by the environmental protection agency that represents a program that brought MSU together with Kansas State University in competition with other institutions to develop a five year program in hazardous waste research. Dr. Jutila stated that as a consequence of that competition, MSU was named Region 8 Hazardous Waste Research Laboratory. Kansas State was named Region 7 by EPA Laboratory, and is in charge of conducting research in those two regions. Dr. Jutila stated that it is funded at $1 million per year on a five year basis, and MSU shares that budget with Kansas State among others and is entirely funded by the federal government.

Sen. Nathe asked Dr. Jutila if they were asking for an entity to be created in order to put that information out to the public? Dr. Jutila said that was correct and the toxic materials lab will serve as an extension function by providing information and technical assistance to private and public users. Dr. Jutila stated that it serves as a channel of information not only at this center but other laboratories in the University System.

Tape K1/2:000
Discussion on EPA funding the Toxic Lab. Center.

(025)
Dr. Tietz closed by summing up the hearing on MSU on the loyal and aggressive faculty and the quality of the teachers and students at MSU.

HEARING ON EXTENSION EXPERIMENT STATIONS

Tape K1/2:192
Dr. James Welsh, the Dean of College Agriculture and Director of Agriculture Experiment Station and the Cooperative Extension Service, gave a brief overview of the Experiment Station and the Extension Service and showed a video of potential investments and activities that have an impact on the economic and community development. Dr. Welsh stated that the following highlights show a few of the research efforts and educational programs that the Montana Agriculture Experiment Station and Cooperative Extension Service are involved with. The video was about drought and alleviating water stress, dealing with problems of livestock in a

drought, new wheat and barley varieties, the Russian wheat aphid, biological study of controlling weeds, and how to use red meat in low cholesterol diets. Dr. Welsh stated that MSU found that barley is as effective as oat bran in lowering cholesterol. Dr. Welsh said that is just an example of a spectrum of activities that have gone on in both the experiment station and the extension service and that the two organizations are very tightly linked. One is heavily dependent upon the other for the development and distribution of information based on research findings. Dr. Welsh closed by stating that there is a tremendous opportunity for improvement in the economic and social base of the state.

AGRICULTURE EXPERIMENT STATION:

Tape L1/1:000

Dr. Russell Muntifering, Dean of Ag. Ex. Station, stated that he is an animal nutritionist by trade and is 85 percent administrator of the Ag station and 15 percent engaged in a research program of his own. Dr. Muntifering distributed a handout regarding the background on the budget request for the 1991 biennium. See Exhibit 3. Dr. Muntifering stated that the majority of the man-power effort and resources in the Montana Agricultural Experiment Station are at the MSU campus. Dr. Muntifering stated that the Ag station does not directly participate in the 6 mill levy nor the tuition increase.

Dr. Russell Muntifering distributed a 4 page summary of the budget request for the 1990 biennium. See Exhibit 4. Dr. Muntifering showed slides on the research that is taking place at the Ag station. He gave a synopsis of the economic return to the public sector and the agricultural research that has been orientated to the farmers. In reviewing Exhibit 4, Dr. Muntifering stated that in comparing the FTE authorization by HB 2 in the previous biennium and the LFA budget recommendation, there is a loss of 2 FTE from the 1989 appropriation. One is the Spring Wheat Breeder program and biotechnology position which was not reinstated. The second FTE was a removal due upgrading of classified employees and higher costs per FTE. Dr. Muntifering asked the Subcommittee for the retention of the FTE that was associated with the reconfiguration as well as the reinstatement of approximately $35,000 annually in salary and benefits that accompanied that activity. Dr. Muntifering also asked for the reinstatement of the Spring Wheat Breeder position for a total of 243 FTE to represent a zero net change for the previous biennium. Dr. Muntifering spoke about vacancy savings, and stated that it has diminished their ability to rehire in high priority program areas and limits their flexibility to creatively and collectively manage personal services. Dr. Muntifering stated his concern with retirement costs and other forms of

termination pay. He stated it is paid directly out of their current budget and stated he would like come back for a supplemental budget authority. He stated that his department is being recommended for a $300,000 reduction in operating monies from the 1989 biennium, and that they need flexibility in their operation budget to be able to respond efficiently to situations such as weather patterns that affect utility consumption, changing prices of feed for the livestock, etc. Dr. Muntifering distributed a snapshot of their equipment inventory at the southern agricultural research center in Huntley, Montana. See Exhibit 5. Dr. Muntifering stated that they cannot find parts for some of their equipment because it is so old, and that they have submitted requests for nearly $1 million for research equipment. It is recommended they receive about $116,000 each year of the biennium.

EXTENSION SERVICE PROGRAM:

(307)
Dr. LeRoy Luft, Associate Director of Extension Service, distributed a hand-out on the 1991 biennium budget request. See Exhibit 6. Dr. Luft stated that the MSU Extension Service is an educational resource dedicated to improving the quality of peoples lives by providing research-based knowledge to strengthen the social, economic and environmental well-being of families, communities, and agricultural enterprises. He stated that other areas they are involved in are; home economics, community development, and 4-H youth program. The Extension Service is a three way partnership which consists of funding from the United States Department of Agriculture, the state of Montana and the Montana counties. Dr. Luft gave a break-down of their funding and stated that 33.5 percent comes from the federal government and that MSU ranks 27th nationally in terms of percentage of funds from that particular source. He stated that 26.5 percent of their funds come from the state of Montana and that Montana is 54th in a ranking of 57 states and territories. The counties provide 34.4 percent of funds and ranks 6th. Dr. Luft stated that there are only five other states in which the counties provide a higher percentage of funding. Other sources or non-tax revenue are grants which total about 6.4 percent of the budget and rank 10th nationally. Like the Ag station the Extension Service does not share in the 6 mill levy or the tuition increase. Dr. Luft stated that they have consolidated the administrative units and it is working very well. It gives them a closer tie between the research and the extension components of the system. Joint appointments have been made where people will do research and have the responsibility to extend that research. He stated that along with agriculture resources, human resources, and the 4-H program, they also have the community development area. Some of the issues that they are working with are; water quality, improving

nutrition, diet and health, highlighting Montana's economic development, conservation and management of natural resources, family and economic well-being, building human capital, youth at risk, cross-county programs, and tax education programs.

Tape L1/2:000

Dr. Luft stated they lost $229,000 and 20 FTE last year because of the consolidation, and an additional $60,000 for the position that was lost related to Dr. Hoffman. He stated they went through very tough times in 1986 and lost $544,000 for a total $833,000 in reductions. He asked that the FTE remain at 115.77. Dr. Luft went through the comparison sheet on Exhibit 6, and stated that personal services include the salaries, longevity, and hourly wages, but that they did not affect the FTE. Because of some of the changes, LFA had recommended the removal of $36,090 from their current base level. Dr. Luft stated they would like to see vacancy savings eliminated so they can increase their flexibility. He requested that the current level be restored to the appropriated level of $498,000 plus inflation. Their intent is not to cut any programs, as they have done in the past, but to maintain and strengthen them. Their final concern relates to the funding sources. Their request is for $1,946,508. The addition of $106,844 in FY 1990 and $133,067 in FY 1991 is an over-estimation of the federal funds that they expect to get from the federal sources. Dr. Luft stated their projection includes all of the federal funding that they anticipate to receive including the increased funds for retirement costs. See Exhibit 6.

(161)
Dr. Welsh distributed a handout on the 1991 biennium program modification requests approved by the Board of Regents budget committee for AES/ES programs. See Exhibit 7. Dr. Welsh summarized by saying that they feel that the extension service and the experiment station are the key systems of outreach and network for MSU. Dr. Welsh stated that the state offers some tremendous opportunities for assisting in rural development and economic impact, and that the returns on these investments are high. He urged the Subcommittee's support in consideration of their program modification requests.

Public Testimony:

(463)
Lorraine Cattermole, Extension Homemaker, Helena, stated she is in support of the extension club. The extension service works with small clubs and on the county and state levels. Ms. Cattermole stated that the extension service has great impact in the field of education and helps in developing

potential and meeting goals in many areas. A new program started in 1988, called the Family Community Leadership Project, is designed to develop leadership and public policy skills for volunteers in Montana. The FCLP shows the average citizen that they can help, and this encourages them to do so. See Exhibit 8.

(023)
Marilyn May, President of Montana State Leaders Council, Ismay, Mt., stated she represents 4,000 leaders throughout the state and approximately 25,000 youngsters involved in the 4-H program. Ms. May briefly explained what 4-H is. Approximately 1/3 of the kids come from rural communities, with the rest coming from small towns, larger towns and even cities. 4-H operates with the cooperative extension service with a few state specialists, county agents, and unpaid volunteers. Ms. May stated that although it is an educational program, it does not compete with the school system, but complements it. Ms. May stated that many English teachers can point out kids that have been in 4-H by speeches and giving demonstrations. If our kids enroll in the vocational, agriculture or home economics curriculum, they already have a head start in their classes. If the schools do not offer skills, than 4-H will provide the necessary life skills. The 4-H education begins with the member choosing from over 100 different projects. Careers have been chosen because of some of these projects.

(185)
Larry Johnson, President of Mt. Grain Growers Association, rose in support of the funding programs for Montana Agriculture Experiment Station and the Extension Service. Mr. Johnson stated that never before in the history of agriculture has it been so important that research and extension functions for a land grant university be adequately funded. Montana needs to produce the best product for the least cost. He supports the Spring Wheat Breeder Program. He stated that over half the wheat produced in Montana is the dark northern spring wheat, a high quality, high protein, hard red spring wheat. The climate and land is ideally suited to producing this wheat. He asked that the Subcommittee fund the spring wheat breeder and genetics position so that the Montana farmer will continue having the opportunity to raise a high quality specialty crop that plays a major role in the economy of Montana. See Exhibit 9.

(235)
Jim Squires, dry land farmer, Glendive. Mr. Squires stated that he serves on the research advisory council and the extension advisory council in Glendive. The Extension Service came to Glendive in early 1970, and he has utilized their information since that time. Mr. Squires stated that he would not have known the comparison between purchase vs. leasing until he used the extension service's computer template and it resulted in a savings of $15,341. Mr.

Squires asked the Subcommittee to support the funding for both the research and the extension service. He stated that Tom Ree, a colleague at Dawson CC, commented that "the Extension is providing fantastic tools if producers will avail of themselves of them".

(399)
Larry Barber, Chairman of the Montana Wheat and Barley Committee, and wheat and barley grower in Denton, Mt., stated that the 1987 Montana Legislature authorized the position of spring wheat breeder at MSU. Mr. Barber stated that as a result of the 1987 Legislation, the Spring Wheat Breeder has been divided between general fund monies and producers dollars to the Montana Wheat and Barley Committee. The producer funds for the last biennium account for $160,000 in the program which is the largest item in their research budget. While the committee was more than willing to get this project started, funding of continuing research is not the purpose of producer dollars. Producer dollars have been used for research needs such as an immediate problem that cannot wait to be addressed by the biennial Legislature. Mr. Barber stated that it is his hope that, as the chairman of the Wheat and Barley Committee, the Legislature will fund the Spring Wheat Breeding fund at MSU. See Exhibit 10.

(443)
Dennis Winters, Mt. Market Development Company, stated that his company is the only company in Montana whose mission is economic development in the private sector organization. Mr. Winters stated that he recently did a study on all the extension programs in the United States (28) and none of them came close to MSU. Mr. Winters stated that there is a real need for technical expertise, and with the help of MSU, the UTAP program, and the extension agents, these things are available to the public. Mr. Winters asked the Subcommittee not to cut back on the extension service.

(523)
Carl Ores, Chairman of Montana Agriculture Producers Inc., stated they have been involved in two projects and have had extreme support from their county extension service unit and MSU. Mr. Ores stated that their first project was the alternative crop study and stated that they are trying to find out about some crops that will actually change the agricultural economics in Montana. The second one is certified weed-free hay. Mr. Ores stated that when they were not successful they went to the county extension agent and now the project is well on its way. Mr. Ores stated that the county agents are trying to get this second project going through-out the state, and does not cost anyone any money.

Tape M1\1:000

Al Kurki, Director of the Alternative Energy Resource Organization, distributed a handout on agriculture and its

application in Montana. Mr. Kurki stated that the new positions created in the agriculture experiment station could help develop the current high quality, somewhat fragmented research programs in biological pest control and alternative crops into a unified body of useful information. Mr. Kurki stated the need to improve the agriculture experiment station and the extension capacities in effectiveness in securing private sector funds and newly designated USDA funding for low-input stable agriculture and education programs. See Exhibit 11.

Dr. Welsh closed stating the urgency in addressing the question of investment in economic activity from the standpoint of the experiment station and the extension service. Dr. Welsh asked the Subcommittee to consider the budgets for flexibility in budget management, capital equipment issue, salary issues and the questions of the program modifications. Dr. Welsh stated that they are interested in expanding the economic base of the state through research, extension activities, and community development

There being no further business the Subcommittee was adjourned.

ADJOURNMENT

Adjournment At: 1:04 p.m.

Rep Ray Peck

REP. Ray Peck, Chairman

RP/cj

2621.min

DAILY ROLL CALL

EDUCATION SUBCOMMITTEE

DATE Jan 31

NAME	PRESENT	ABSENT	EXCUSED
REP. RAY PECK, CHAIRMAN	✓		
SEN. SWEDE HAMMOND, VICE CHAIRMAN	✓		
SEN. PAUL BOYLAN	✓		
SEN. JUDY JACOBSON	✓		
REP. MIKE KADAS	✓		
REP. BOB MARKS	✓		
SEN. DENNIS NATHE	✓		

Form CS-30A
Rev. 1985

ILX Lightwave

A COMMITMENT TO LASER DIODE INSTRUMENTATION

EXHIBIT 1
DATE Jan 31, 1989
HB

January 30, 1989

Representative Raymond Peck, Chairman
Joint Education Appropriations Sub-Committee
Montana State Legislature
State Capitol Building
Helena, MT

RE: MSU Technical Assistance Program

Dear Mr. Chairman:

Regrettably, the length of this morning's hearings exhausted the time available before I was able to provide testimony on the referenced subject, and the press of business precludes my returning for that purpose tomorrow. However, I consider the subject of sufficient importance to emerging business in the state of Montana, and the overall economic growth of the state, that I beg your indulgence in providing testimony in written form.

When ILX Lightwave first came to Bozeman nearly three years ago, it was located in a small house on Babcock Street. With two or three full time employees, and some part time student assembler help from the MSU campus, the first product was built. In those early days, no manufacturing systems existed in the company. In response to a very real need that company funding precluded getting from any other source, the Technical Assistance Program came to the rescue, providing approximately seventy five (75) hours of consultation in the following areas:

Documentation of manufacturing processes
Providing of reference materials
Providing actual assembly analysis with suggested improvements
Establishing goals/guidelines for a Quality Assurance Program
Providing economic order quantity analysis
Establishing the first tier of inventory control
Forecasting production parts demand
Developing operations process charts

With that professional injection of production management technology, the company growth started in earnest. When I joined the company nearly a year ago, those two or three full time employees had grown to 18. Currently, the number of full time jobs created in Bozeman and Gallatin County has grown to 35. We honestly believe that number will be 58-60 by the end of 1989, and continue to grow from there.

While I would in no way infer that the Technical Assistance Program was solely responsible for this, it was an important one of the many factors that did make it happen. As we seek to attract new, high technology, clean business to Montana, the same will be true. Technical Assistance will not make or break the program per se, rather it will be another element that improves our competitiveness against other states in this search for new business.

Having been a long time affiliate, student and supporter of Universities in the "Land Grant" system, please let me comment briefly on how I see the role of a University like MSU within that "Land Grant" definition. The principal roles which have repeatedly been stated, are teaching, research and extension. Most often, this is directly related to the farming or agribusiness element of the state's economy. I would argue that it is equally true for the technical segment of the University, particularly through a program such as Technical Assistance. Specifically, I see the three roles being fulfilled relative to emerging business in the following ways:

Teaching, or continuing education, through the specific types of hands-on assistance we received and as I described above.

Research into the many continuously evolving technical aspects of manufacturing, such as computer applications, process enhancement, manufacturing methods and many more to numerous to list.

Extension of those capabilities and services to the fledgling industries and businesses of the state. If my data is correct, some 90% of the businesses in the state employ 20 employees or less. With that small a mass in each company, the capability to hire private sector expertise or consultation is most often non-existent. Thus, there is no realistic alternative to the Technical Assistance Program.

Lacking a robust economy and facing budget deficits makes the task of maintaining such a program doubly difficult for the legislature. Pressures exist from every quarter for this program or that. However, the issue of relative return on dollar invested must be one extremely important criteria in deciding how to divide the fiscal pie. With a company like ILX Lightwave, 99+% of our sales dollars come from outside Montana. While not all of our purchasing dollars stay in the state, a large number stay here and recycle through several levels with the attendant multiplier effect. Labor dollars for those 35 current employees do the same thing.

Finally, I see not only a state urgency, but a national urgency in supporting programs such as the Technical Assistance Program. People frequently ask me, "What do you see in the manufacturing area? Those type jobs continue to go off-shore, due to labor costs and the general unattractiveness of manufacturing." My answer is simple - We MUST stem this tide of job and national resource loss. We must once again create the attractiveness of creating Quality product that brings dollars to our shores rather than sending them away. Is the need any less for Montana than for the nation as a whole? For these many reasons, I strongly urge both your personal and your committee support of the funding request for the MSU Technical Assistance Program.

Sincerely,

George H. Howard
Director of Operations

EXHIBIT 2
DATE Jan 31, 1989
HB MSU

RESEARCH

MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA 59717

SUMMARIES OF RESEARCH PROPOSALS

Montana State University
January 1989

MONTANA STATE UNIVERSITY
VICE PRESIDENT FOR RESEARCH
GRANTS AND CONTRACTS EXPENDITURES
ACTIVITY - FIVE YEAR COMPARISON

FISCAL YEAR 1984	$ 9,067,796
FISCAL YEAR 1985	. . . . $ 9,641,035
FISCAL YEAR 1986	. . . . . $ 10,745,945
FISCAL YEAR 1987	. . . . . $ 13,162,177
FISCAL YEAR 1988	. . . . . $ 14,946,361

MONTANA STATE UNIVERSITY
VICE PRESIDENT FOR RESEARCH
GRANTS AND CONTRACTS PROPOSAL SUBMISSION

Fiscal Year 1984	351 Proposals
Fiscal Year 1985	405 Proposals
Fiscal Year 1986	422 Proposals
Fiscal Year 1987	498 Proposals
Fiscal Year 1988	577 Proposals

Fiscal Year 1988 Proposals First Year Amounts Requested $37,139,374, Cumulative For Multi-Year Proposals $58,263,940.

* * * * * * * * * * * *

Proposals July 1, 1987 through January 27, 1987 = 303

Proposals July 1, 1988 through January 28, 1988 = 421

Increase in Proposals Submitted = 118

INDIRECT COST (IDC) FUNDS

1. IDC Committed FY88 — $1,173,562

2. Investment Portfolio

   a. Faculty Research and Start-ups — 701,531 (59.8%)

   b. Research Facilities and Services — 332,969 (28.4%)

   c. New Research Centers and Programs — 102,164 (8.7%)

   d. Technical Assistance — 36,898 (3.1%)

3. Return

   a. 74 New Research Projects

   b. 84 Additional Research Proposals

   c. Strengthened Infrastructures (Animal Care, Computers, etc.)

   d. Monetary Return on Investment: 5:1 on IDC

   e. New Initiatives in Materials & Biotechnology

SUMMARY STATEMENT OF
WATER RESOURCE PROGRAM MODIFICATION

The program modification to the Water Resource Center at MSU seeks to

1) **Establish an Interagency Water Research Policy Advisory Board.** The board would: a) set research goals; b) determine priority research areas, and identify research entities; c) identify available and potential funding sources; d) review research programs for consistency with the policy; e) submit a biennial research plan for funding to the legislature; and f) serve as an advocate for the research program.

2) **Expand the scope of the current Water Center Advisory Committee.** The committee would be asked to a) identify research and informational needs; b) review programs of state agencies and the university system for consistency with those needs; c) give research priorities according to the needs; and d) identify areas where coordination could help maximize benefits or conserve resources.

3) **Expand the role of the Montana Water Resources Center.** The expansion would be required because the Center would provide staff for the Policy Advisory Board and the Water Center Advisory Committee, and would write biennial plans and reports. In addition, the Center would continue to serve as a clearinghouse (newsletter, information service, water forum), and would work to establish training programs for public school teachers and adults. Finally, the Center would review the potential for a coordinated graduate degree program in water resources with the University of Montana, Montana State University, and the Montana College of Mineral Science and Technology. A full-time director and a small staff are the major items of the budget.

Budget	1990	1991
	$128,725	$127,415

SUMMARY STATEMENT OF THE
ADVANCED MATERIALS CENTER PROGRAM
MODIFICATION

The Center for Synthesis and Characterization of Advanced Materials (SACAM) has been established at MSU which, in addition to its nationally recognized research effort, offers technical and analytical services to academic and industrial users. Referred to as a "national resource" by NSF, SACAM maintains state-of-the-art equipment and technical expertise that has no dedicated budget to provide continuous and timely services to external users. The program modification requests state support to help maintain and upgrade analytical instruments and add technical staff to operate and conduct work on very sophisticated equipment.

The request supports two technical FTE and two graduate assistants to provide technical assistance to private and university users.

Budget	1990	1991
Personnel	$102,445 (4 FTE)	$102,445
Operations	50,000	50,000
	$152,445	$152,445

Recommendation: Postpone upgrade one year
Fund in 1991 at $152,445

SUMMARY STATEMENT OF
TOXIC MATERIALS LABORATORY

Montana State University proposes to establish a Toxic Materials Laboratory to provide access to information about hazardous materials and technical assistance to university, government and industry. The Laboratory will serve as a public service entity for the following programs:

a) Reclamation Research Unit at MSU which is heavily involved in Superfund site reclamation.

b) Environmental Protection Agency's (EPA) Toxic Substance Research Center at MSU serving Region 8.

c) Biofisheries Laboratory at MSU which develops biological parameters for toxic materials for EPA.

d) Bureau of Mines at Montana Tech which emphasizes research on contamination of groundwater.

Budget	1990	1991
Personnel	$70,410 (22 FTE)	$70,410
Operations/Capital	25,500	12,500
TOTAL	$95,910	$82,910

Recommendation: Postpone one year
Fund $95,910 in 1991

EXHIBIT 3
DATE Jan 31, 1989
HB

MONTANA AGRICULTURAL EXPERIMENT STATION
1991 BIENNIUM BUDGET REQUEST

I. BACKGROUND

A. The Montana Agricultural Experiment Station is the research component of the tripartite mission of teaching, research and Extension in the Land Grant University system. The broad objectives of the Montana Agricultural Experiment Station are to:

(1) undertake scientific research relating to agricultural activities and other uses of the natural resource base;

(2) enhance knowledge of the social and economic impacts of alternative production activities and policies regarding the use and management of the resource base (including human resources as well as natural resources);

(3) make research results relevant and useful in their application to the problems and choices facing the agricultural community and the community-at-large;

(4) disseminate the scientific results in an understandable manner to other researchers and the community-at-large in order to facilitate economic development and enhance social value of the research activities.

B. The national Experiment Station system recently celebrated the 100th Anniversary of the Hatch Act of 1887. The Montana Agricultural Experiment Station was established at Montana State University in 1893 by the Montana Legislature "to conduct and promote studies, scientific investigations and experiments relating to agriculture, natural resources and rural life and to diffuse information thereby acquired among the people of Montana."

C. The Montana Agricultural Experiment Station, funded by state and federal monies, provides a base program of agricultural research in concert with other State Agricultural Experiment Stations and the Cooperative State Research Service, United States Department of Agriculture. The program includes 14 academic departments and laboratories at MSU in Bozeman (Main Station) and seven research centers around the state. In addition, Fort Keogh Livestock and

Range Research Station (LARRS) at Miles City is a cooperative program between the Montana Agricultural Experiment Station and the Agricultural Research Service, United States Department of Agriculture.

D. The Montana Agricultural Experiment Station does not participate in either the six-mill levy or MSU tuition increases.

II. PROGRAM EMPHASIS

A. With encouragement from the Montana Legislature, the Experiment Station has established a network of advisory committees and councils to help identify priorities and establish the research agenda. Each Research Center and LARRS has an advisory committee which in turn elects a member to the statewide Advisory Council. Cooperative Extension, producer/commodity groups, agri-business and private citizens are consulted for input and guidance to the Station programs. All research projects undergo a comprehensive review process to include a personal evaluation seminar by the principal investigator followed by in-house and external review.

B. The major goals of the Experiment Station are as follows (not necessarily in priority order):

(1) reduce crop production costs and maximize net profits;

(2) reduce livestock production costs and maximize net profits;

(3) add value to Montana-produced crops and livestock;

(4) improve natural resource management and conservation;

(5) improve the economic aspects of agriculture, including marketing;

(6) understand and improve the human condition;

(7) systematized management.

III. 1991 BIENNIUM BUDGET REQUEST

A. Budget information summarized in Tables 1-4 of handout

B. Significant budget concerns are:

(1) 2.00 FTE reduction by LFA;

(2) Vacancy savings;

(3) Operations budget;

(4) Capital equipment budget

IV. OTHER CONSIDERATIONS

A. Flexibility to meet programming needs.

B. Program modifications.

EXHIBIT 4
DATE Jan 31, 1989
HB

TABLE 1. BUDGET COMPARISONS FOR 1991 BIENNIUM

MONTANA AGRICULTURAL EXPERIMENT STATION
(EXCLUDES U.S. LIVESTOCK & RANGE STATION)

	FY 1989	FISCAL YEAR 1990		
BUDGET ITEM:	HB 2 AUTHORIZATION	AGENCY REQUEST	EXECUTIVE BUDGET	LFA BUDGET
F.T.E. 1/	243.00	242.00	242.00	241.00
Personal Services	$6,824,799	$6,780,299	$6,729,111	$6,737,944
(Vacancy Savings) 2/	(182,956)	(230,530)	(134,582)	(229,222)
Operations 3/	1,488,720	1,500,999	1,500,999	1,323,469
Capital 4/	124,875	473,647	123,965	116,000
Total Expenditures	$8,255,438	$8,524,415	$8,219,493	$7,948,191
FUND SOURCES:				
General Fund	6,257,135	$6,493,280	$6,188,358	$5,917,056
Earmarked Revenue	325,000	325,000	325,000	325,000
Federal Funds	1,673,303	1,706,135	1,706,135	1,706,135
Total Funds	$8,255,438	$8,524,415	$8,219,493	$7,948,191

	FY 1989	FISCAL YEAR 1991		
BUDGET ITEM:	HB 2 AUTHORIZATION	AGENCY REQUEST	EXECUTIVE BUDGET	LFA BUDGET
F.T.E. 1/	243.00	242.00	242.00	241.00
Personal Services	$6,824,799	$6,781,152	$6,729,952	$6,738,784
(Vacancy Savings) 2/	(182,956)	(230,560)	(134,599)	(229,251)
Operations 3/	1,488,720	1,511,991	1,511,991	1,330,243
Capital 4/	124,875	467,407	123,965	116,000
Total Expenditures	$8,255,438	$8,529,990	$8,231,309	$7,955,776
FUND SOURCES:				
General Fund	6,257,135	$6,498,855	$6,200,174	$5,924,641
Earmarked Revenue	325,000	325,000	325,000	325,000
Federal Funds	1,673,303	1,706,135	1,706,135	1,706,135
Total Funds	$8,255,438	$8,529,990	$8,231,309	$7,955,776

See Attached Footnotes

LE 2. BUDGET COMPARISONS: 1987, 1989, 1991 BIENNIUMS

MONTANA AGRICULTURAL EXPERIMENT STATION

(EXCLUDES U.S. LIVESTOCK & RANGE RESEARCH STATION)

	BIENNIUM		
DGET ITEM:	1987 AUTHORIZED	1989 AUTHORIZED	1991 AGENCY REQUEST
T.E.	255.57	243.00	242.00
rsonal Services	$13,598,268	$13,618,798	$13,561,451
acancy Savings)	(407,948)	(365,912)	(461,090)
erations	3,406,506	2,954,395	3,012,990
pital	500,000	251,428	941,054
Total Expenditures	$17,096,826	$16,458,709	$17,054,405
UND SOURCES:			
eral Fund	$12,351,290	$12,462,103	$12,992,135
marked Revenue	1,040,000	650,000	650,000
ederal Funds	3,705,536	3,346,606	3,412,270
Total Funds	$17,096,826	$16,458,709	$17,054,405

TABLE 3. BUDGET COMPARISONS FOR 1991 BIENNIUM

MONTANA AGRICULTURAL EXPERIMENT STATION

U.S. LIVESTOCK & RANGE RESEARCH STATION

	FY 1989	FISCAL YEAR 1990		
BUDGET ITEM:	HB 2 AUTHORIZATION	AGENCY REQUEST	EXECUTIVE BUDGET	LFA BUDGET
F.T.E.	16.70	16.67	16.00	17.67
Personal Services	$377,254	$378,374	$417,859	$376,493
(Vacancy Savings)	0	(15,135)	(8,357)	(15,060)
Operations	5,700	10,611	10,611	10,611
Capital	3,000	3,000	3,000	3,000
Total Expenditures	$385,954	$376,850	$423,113	$375,044
FUND SOURCES:				
Ft. Keogh LARRS	$385,954	$376,850	$423,113	$375,044
Total Funds	$385,954	$376,850	$423,113	$375,044

	FY 1989	FISCAL YEAR 1991		
BUDGET ITEM:	HB 2 AUTHORIZATION	AGENCY REQUEST	EXECUTIVE BUDGET	LFA BUDGET
F.T.E.	16.70	16.67	16.00	17.67
Personal Services	$377,254	$377,639	$417,615	$375,784
(Vacancy Savings)	0	(15,105)	(8,352)	(15,031)
Operations	5,700	10,611	10,611	10,611
Capital	3,000	3,000	3,000	3,000
Total Expenditures	$385,954	$376,145	$422,874	$374,364
FUND SOURCES:				
Ft. Keogh LARRS	$385,954	$376,145	$422,874	$374,364
Total Funds	$385,954	$376,145	$422,874	$374,364

TABLE 4. BUDGET COMPARISONS: 1987, 1989, 1991 BIENNIUMS

MONTANA AGRICULTURAL EXPERIMENT STATION

U.S. LIVESTOCK & RANGE RESEARCH STATION

	BIENNIUM		
BUDGET ITEM:	1987 AUTHORIZED	1989 AUTHORIZED	1991 AGENCY REQUEST
F.T.E.	36.13	16.70	16.67
Personal Services	$1,501,900	$754,508	$756,013
(Vacancy Savings)	0	0	(30,240)
Operations	359,874	11,400	21,222
Capital	6,000	6,000	6,000
Total Expenditures	$1,867,774	$771,908	$752,995
FUND SOURCES:			
Lic. Keogh LARRS	$1,867,774	$771,908	$752,995
Total Funds	$1,867,774	$771,908	$752,995

FOOTNOTES FOR TABLE 1

MONTANA AGRICULTURAL EXPERIMENT STATION

1/ F.T.E. -
The Spring Wheat Breeder program was not included in the Executive Budget Request submitted by the Agricultural Experiment Station; reinstatement was requested through Program Modification.

2/ Vacancy Savings -
The Agency Budget Request included a 3.4 percent vacancy rate in compliance with the budget preparation instructions.

3/ Operations - The LFA recommendation is $359,278 less than the Agency Budget Request, and is a drop of 10 percent from the 1989 Biennium appropriation and 13.8 percent from the 1987 Biennium authorization.

4/ Capital -
The LFA recommendation is 3.7 percent less than average expenditure level for 1986, 1987 and 1988; and is 7.8 percent less than the 1989 Biennium appropriation and 53.6 percent less than the 1987 Biennium authorization.

EXHIBIT 5
DATE Jan 31, 1989
HB Ag Exp. Station

MONTANA STATE UNIVERSITY

MONTANA AGRICULTURAL EXPERIMENT STATION

SOUTHERN AGRICULTURAL RESEARCH CENTER

HUNTLEY, MONTANA

CAPITAL EQUIPMENT INVENTORY
REVISED 1/27/89

PROP#.	MAJOR EQUIPMENT	DATE PUR.	1988	1991	1993	1997
089062	Ridger/Deridger-Kirchner	02-18-86	2	5	7	11
099822	White Spinner Plow	10-02-87	4	7	9	13
084507	Planter - 6-row JD #7100	05-01-83	5	8	10	14
010311	J.D. Scraper	06- -82	6	9	11	15
087602	Roller Harrow - Kewanee 12'	09-17-85	8	11	13	17
024245	Sprayer, 200 gal, 3 pt	09-01-81	7	10	12	16
075004	Spreader, Fert 12' Barber	05-01-78	10	13	15	19
063847	Manure Spreader - Dual	10-01-77	11	14	16	20
069840	Chopper - 2-row JD #35	04-01-77	11+	14+	16+	20+
010290	Harrow - 2 sec JD Spiketooth	02-01-76	12	15	17	21
051215	Grain Drill JD #246	01-01-76	12	15	17	21
063838	Planter - 6-row Buffalo	10-01-76	12	15	17	21
063850	Harrow JD 4 sec, 3 pt	01-01-76	12	15	17	21
088570	Land Plane, JD, 1975	12-09-85	13	16	18	22
051181	Dumpbox, Farmhand - 2 whl	10-01-74	14	17	19	23
051182	Triple K	06-01-74	14	17	19	23
004777	IHC Forage Chopper	05-01-74	14	17	19	23
017584	Cult Field Triple K	04-01-74	14	17	19	23
040776	JD #343 Corn Head	10-01-73	15	18	20	24
017589	3 pt Delta Blade	04-01-72	16+	19+	21+	25+
040772	JD Rotary Mower	07-01-72	16	19	21	25
039127	Rod Weeder - 10'	05-01-71	17	20	22	26
049676	Flexiplanter #71 6-row JD	05-01-71	17	20	22	26
017616	Cult Sweep-underground Noble	04-01-70	18	21	23	27
034900	Flexiplanter #70 6-row	01-70	18+	21+	23+	27+
034461	Ditcher J.D. 60", 3 pt	03-01-70	18	21	23	27
034461	JD 60" 3 pt Ditcher	03-01-70	18	21	23	27
034458	JD M#55 Combine	03-01-70	23+	26+	28+	32+
034460	Chisel Cultivator JD 10'	03-01-70	18	21	23	27
020657	Cultivator, 6-row J.D.	12-01-67	21	24	26	30
020658	JD Baler #24T	12-01-67	21	24	26	30
018682	Tandem Disk 12' IHC	12-01-65	23	26	28	32
018678	IHC Swather #201	12-01-65	23	26	28	32
017588	5' Blade Rear Mt, 3 pt	04-01-60	28	31	33	37

+ Actual age unknown - Indicates equipment used when purchased

PROP#.	RESEARCH EQUIPMENT	DATE PUR.	1988	1991	1993	1997
089143	Hege Planter Drill Ser. 1000	03-31-86	2	5	7	11
089142	Hege Planter drill w/7 dbl open	3-28-86	2	5	7	11
087550	Trlr 5th wheel Gooseneck	06-07-85	3	6	8	12
084741	Trailer 16' Norwest	10-12-84	4	7	9	13
063828	Trlr 7x21 - FB w-whl	09-01-78	10	13	15	19
017563	Harvestore Forage Rem	08-01-76	12	15	17	21
051183	Combine Plot Hege #125B	07-01-75	13	16	18	22
036409	Soil Sampler, Gidding Hydr	05-01-72	16	19	21	25
023814	Mower Plot Jari 36" 3 HP	07-01-68	20	23	25	29
011847	Seeder Cone - 4-row	03-01-57	31	34	36	40

TRACTOR LIST January 1, 1988

	PROP#.	YEAR	MODEL	DATE PUR	1988	1991	1993	1997
	084581	1983	JD 2350 w/loader	07-01-83	5	8	10	14
	001796	1982	JD 4040	04-01-82	6	9	11	15
	051212	1974	JD 2630	02-01-76	14	17	19	23
	051214	1974	JD 1530	02-01-76	14	17	19	23
	052085	1963	JD 3010	02-01-63	25	28	30	34
	011800	1957	640 Ford	10-01-57	31	34	36	40
	011801	1946	IHC Farmall "A"	06-01-46	42	45	47	51
*	084533	1983	JD 318 w/mower	06-01-83	5	8	10	14
**	089067	1986	Ford Diesel 1710 w/mower	03-12-86	2	5	7	11
	051201	1975	Kubota B-6000	09-01-75	13	16	18	22

* Lawn mower for Center grounds
** Tractors for research plot work

PROP#.	YEAR	VEHICLE	1988	1991	1993	1997
088598	1986	GMC Suburban	2	5	7	11
078748	1979	Ford PU - Courier	9	12	15	19
063837	1976	Chev Sportwagon	12	15	17	21
051193	1975	Chev PU 3/4 ton	13	16	18	22
017560	1971	IHC Pu 1/2 ton	17	20	22	26
065722	1963	Dodge PU 1/2 ton	25	28	30	34
017556	1959	Ford PU 3/4 ton	29	32	34	38
084564	1969	Chev, 2-1/2 ton	19	22	24	28
051206	1964	Dodge 3 ton	24	27	29	33
051207	1964	Dodge Dump - 2 ton	24	27	29	33
017618	1958	Chev Dump Truck - 2 ton	30	33	35	39

EXHIBIT 10
DATE Jan 31, 1989
HB

MONTANA EXTENSION SERVICE

1991 BIENNIUM BUDGET REQUEST

I. BACKGROUND

A. The Montana State University Extension Service is an educational resource dedicated to improving the quality of people's lives by providing research based knowledge to strengthen the social, economic and environmental well being of families, communities and agricultural enterprises.

B. The Extension System nationally celebrates its 75th Anniversary on May 8, 1989.

C. The Extension Service is a three-way partnership consisting of the Extension Service, USDA; the Montana Extension Service as part of MSU; and Montana counties. MSU Extension staff serve 53 counties through 49 offices. As of September 30, 1988, only one state provides to their Extension Service a lower percentage of the total funds than does Montana; that state is New York.

D. The Extension Service does not share in either the six mill levy or tuition increases.

II. PROGRAM EMPHASIS

A. The Extension program is developed from the grassroots. Advisory Councils are organized at the state and county level with approximately 1000 Montanans serving in an advisory capacity. These councils provide program direction.

B. Traditionally, programming has been provided in four areas: agriculture and natural resources, human resources and home economics, community development and 4-H/youth. We are moving toward an approach that emphasizes major issues or concerns. There are nine major issues:

1. Competitiveness and profitability of agriculture
2. Water Quality
3. Improving nutrition, diet and health
4. Vitalizing Montana
5. Alternative agricultural opportunities
6. Conservation and management of natural resources
7. Family and economic well being
8. Building human capital
9. Youth at Risk

III. 1991 BIENNIUM BUDGET REQUEST

A. The FY89 Budget Authorization, the Agency Request, the Executive Budget and the LFA Budget for FY1990 and 1991 are shown on Table 1.

B. Significant budget concerns are:

1. 1.22 FTE reduction by the LFA
2. Vacancy Savings
3. Operations Budget
4. Fund Sources, i.e. Federal Funds projections

IV. OTHER CONSIDERATIONS

A. Flexibility to meet programming needs

B. Electronic technology

TABLE 1. BUDGET COMPARISONS FOR 1991 BIENNIUM FOR MONTANA EXTENSION SERVICE

	FY 1989	FISCAL YEAR 1990		
BUDGET ITEM:	HB 2 AUTHORIZATION	AGENCY REQUEST	EXECUTIVE BUDGET	LFA BUDGET
F.T.E. 1/	115.77	115.77	115.77	114.55
Personal Services	$3,983,888	$3,547,496	$3,538,207	$3,506,060
(Vacancy Savings) 2/	(133,738)	(141,900)	(68,026)	(140,242)
Net Personal Services	3,850,150	3,405,596	3,470,181	3,365,818
Operations 3/	500,456	520,427	520,421	483,664
Capital	12,829	101,552	25,696	20,000
Total Expenditures	$4,363,435	$4,027,575	$4,016,298	$3,869,482
FUND SOURCES:				
General Fund	2,534,167	$2,081,067	$2,069,790	$1,816,130
Federal Funds 4/	1,829,268	1,946,508	1,946,508	2,053,352
Total Funds	$4,363,435	$4,027,575	$4,016,298	$3,869,482

	FY 1989	FISCAL YEAR 1991		
BUDGET ITEM:	HB 2 AUTHORIZATION	AGENCY REQUEST	EXECUTIVE BUDGET	LFA BUDGET
F.T.E. 1/	115.77	115.77	115.77	114.55
Personal Services	$3,983,888	$3,574,946	$3,539,813	$3,533,210
(Vacancy Savings) 2/	(133,738)	(142,998)	(68,057)	(141,328)
Net Personal Services	3,850,150	3,431,948	3,471,756	3,391,882
Operations 3/	500,456	521,210	521,204	484,447
Capital	12,829	69,678	22,750	20,000
Total Expenditures	$4,363,435	$4,022,836	$4,015,710	$3,896,329
FUND SOURCES:				
General Fund	2,534,167	$2,076,328	$2,069,202	$1,816,754
Federal Funds 4/	1,829,268	1,946,508	1,946,508	2,079,575
Total Funds	$4,363,435	$4,022,836	$4,015,710	$3,896,329

FOOTNOTES FOR TABLE 1

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1. F.T.E. -

   The Agency requests that the 1.22 FTE removed by the LFA from the authorized FTE level of 115.77 be reinstated. Even though the Agency through reorganization and/or pay changes increased its salary base by $36,090, the total number of staff and FTE did not change.

2. Vacancy Savings -

   The Agency did not request vacancy savings in its Executive Budget request. The Agency had an imposed four percent vacancy rate applied to its House Bill 2 appropriation for FY 1988. The Executive Budget submission computer template applied a four percent vacancy rate to the Agency's base year personal services request.

3. Operations -

   The LFA level of operating dollars suggests a reduction in programming. Our intent is not to cut programs but to maintain and strengthen them.

4. Fund Sources -

   The LFA estimate of federal funds is overstated by $106,844 in FY 1990 and $133,067 in 1991. The Agency request for both years of the biennium included all federal carryover funds as of June 30,1988, all estimated additional funds for increased retirement costs, as well as the estimated amount to be received from the normal yearly federal appropriation. An overstatement of federal funds could cause the Agency to return to the Interim Finance Committee when the actual federal figures are known.

EXHIBIT 7
DATE Jan. 31, 1989
HB

1991 BIENNIUM PROGRAM MODIFICATION REQUESTS APPROVED BY BOARD OF REGENTS BUDGET COMMITTEE FOR AGRICULTURAL EXPERIMENT STATION (AES)/EXTENSION SERVICE (ES)

	Request	Recommended
1. ***Spring Wheat Breeding*** ***AES***	$ 320,000	$ 320,000

OBJECTIVE: To improve economic yield and marketability of spring wheat; specifically, 1) to incorporate higher protein content and improved quality into high-yielding wheats, and 2) to develop high-yielding, high-quality wheats with resistance to Montana diseases and insects.

2. ***Electronic Technology*** ***ES***	$ 707,120	$ 250,000*

OBJECTIVE: To maintain a well-educated citizenry; specifically, 1) to increase Extension capability in the use of electronic technology and to develop educational packages for distribution directly to Montana citizens, and 2) to evaluate new offerings in the electronic technology marketplace in order to maximize program delivery efficiency.

3. ***Value Added Agriculture*** ***AES/ES***	$ 232,000	$ 116,000*

OBJECTIVE: To explore ways of adding value to Montana's agricultural products; specifically, 1) to identify and develop processes to increase the value of commodities, and 2) to explore the potential of new and expanding markets.

4. ***Low Input Agriculture*** ***AES/ES***	$ 352,900	$ 176,000*

OBJECTIVE: To expand current minimally funded programs and to speed up the adoption process in Montana; specifically, 1) to develop a usable database of existing research, and conduct educational programs for producers using material from the database, 2) to expand research on the use of legumes, 3) to teach producers how to use integrated pest management techniques, and 4) to identify specific areas where research is needed to enhance the application of low input agriculture.

	Requested	Recommended
5. *Water Quality* *AES/ES (UNIVERSITY SYSTEM-WIDE)*	$ 336,000	$ 168,000*

OBJECTIVE: To conduct research and develop an information delivery program on water quality and management aimed at prevention of groundwater contamination and sustainability of economically efficient agricultural productivity under both irrigated and dryland conditions.

6. *Range Livestock Nutrition* *AES*	$ 204,000	$ 102,000*

OBJECTIVE: To reinforce existing range livestock nutrition program; specifically, 1) to identify and manipulate factors which govern nutrient availability from rangeland forage, and 2) to develop techniques for manipulating the ruminal microflora to enhance their utilization of fibrous feedstuffs.

7. *Restoration of Operations Budget* *ES*	$ 457,914	$ 228,957**

OBJECTIVE: To restore operational funds removed from FY 86 base due to mid-year budget cuts and administrative consolidation; specifically, 1) to recover $340,000 general operating support, and 2) $117,914 for increased emphasis in rural economic development.

SUMMARY	Requested	Recommended
AES/ES	$2,609,934	$1,360,957

*Board of Regents recommended a one-year delay - start in FY 91.
**Board of Regents recommended restoring one-half of lost funds.

MONTANA STATE UNIVERSITY
PROGRAM MODIFICATION REQUEST FORM
1990 - 1991 BIENNIUM

TITLE: Spring Wheat Breeding and Biotechnology Program
AMOUNT: Fiscal 1990 $160,000 Fiscal 1991 $160,000
PROGRAM: Montana Agricultural Experiment Station

ABSTRACT:

Montana ranks third in the nation's agriculture for spring wheat production. Until 1984, the Spring Wheat Breeding Program in Montana was carried out by the Agricultural Research Service of the United States Department of Agriculture. The USDA has since reoriented this research program and has discontinued variety development altogether. In 1986 Montana produced 70.2 million bushels of spring wheat valued at $179 million, representing more than 15% of total cash receipts from marketing of all agricultural commodities. The General Appropriations Act of 1987, House Bill 2, provided 50 percent of the funding ($80,000 per year) to initiate a Spring Wheat Breeding and Biotechnology Program; the remaining 50 percent was provided in a two-year grant from the Montana Wheat and Barley Committee. General fund support for startup of the program was restricted to the 1989 biennium, and other funds required for continuing the program have not been identified. Continued genetic improvement is imperative to provide better quality in the market place and better adaptation to Montana's conditions. This modification requests full funding for this program as a permanent fixture in the budget base of the Montana Agricultural Experiment Station.

OBJECTIVE(S) OF MODIFICATION:

The Spring Wheat Breeding and Biotechnology Program at Montana State University is oriented toward improving the economic yield and marketability of spring wheat. Specific objectives are:

1. to incorporate higher protein content and improved quality into high-yielding wheats, and
2. to develop high-yielding, high-quality wheats with resistance to Montana diseases and insects.

BUDGET:	1990	1991
FTE	4.0	4.0
Personal Services		
Contract Faculty (1)	$ 44,000	$ 44,000
Professional		
GTA/GRA (1)	18,000	18,000
Technicians (2)	50,000	50,000
Other		
Subtotal Personnel Services	$112,000	$112,000
Operations		
Contracted Services		
Supplies	18,000	18,000
Communications		
Travel	4,000	4,000
Other Operations	16,000	16,000
Subtotal Operations	$ 38,000	$ 38,000
Capital	10,000	10,000
Total Budget	$160,000	$160,000

TITLE: Spring Wheat Breeding and Biotechnology Program

PROGRAM MODIFICATION DESCRIPTION:

The proposed program will develop new spring wheat varieties with special emphasis on more desirable market properties (e.g., higher protein content), and use insect and disease biotechnology to develop basic information on spring wheat characteristics with economic impacts. Stem rust, leaf rust and the wheat stem sawfly continue to be major pests in Montana, and the Russian wheat aphid will require immediate and on-going attention. With regard to these objectives, the Spring Wheat Breeding Program will be conducted cooperatively with plant pathologists, cereal chemists, nutritionists, entomologists and agronomists. The development of improved varieties requires careful selection of parental material with desirable agronomic and quality characteristics with subsequent evaluation of large numbers of lines derived from well-conceived genetic crosses. Evaluation is performed in several locations in order to identify varieties best suited for Montana soils and climate. A complementary approach involves the appropriate integration of biotechnology into the improvement of spring wheat in Montana. This will involve identification of superior parents based on molecular analysis of the genetic material and eventual molecular isolation and transfer of desirable traits. The mechanics of the spring wheat research may vary; however, the ultimate goal will be to produce improved spring wheat varieties for Montana farmers.

MONTANA STATE UNIVERSITY
PROGRAM MODIFICATION REQUEST FORM
1990-1991 BIENNIUM

TITLE: Electronic Technology Support Unit
AMOUNT: Fiscal 1990 $394,400 Fiscal 1991 $312,720
PROGRAM: Montana Extension Service

ABSTRACT:

According to a recent report on Montana's climate for economic development, one of our greatest assets is a well-educated citizenry. Maintenance of this capability will require that we adopt cost effective "distance delivery" techniques to bring current information to a widely scattered audience. Electronic technology, including computers, will improve the flow of educational material to Montana citizens. Existing and new staff will have to become fully competent in the use of new methods of information retrieval, organization, and dissemination to maintain our position of leadership in the education of Montana citizens. In addition, we need to continually evaluate new offerings in the electronic technology marketplace in order to maximize program delivery efficiency.

BUDGET:	1990	1991
FTE	7.0	7.0
Personal Services		
Professional Staff		
Programmers (3 FTE)	$102,480	$107,600
Education (1 FTE)	34,160	35,860
Technicians (1 FTE)	34,160	35,860
Secretarial (2 FTE)	36,600	38,400
Wage Payroll	26,000	26,000
Subtotal Personal Services	$233,400	$243,720
Operations		
Contracted Services	4,000	6,000
Supplies	10,000	10,000
Communications	3,000	4,000
Travel	20,000	22,000
Other Operations	3,000	
Subtotal Operations	$ 40,000	$ 42,000
Capital		
Start-Up Equipment	121,000	
Annual Additions		27,000
Subtotal Capital	$121,000	$ 27,000
Total Budget	$394,400	$312,720

TITLE: Electronic Technology Support Unit

PROGRAM MODIFICATION DESCRIPTION

This program modification will enable us to train Extension staff in the use of electronic technology and to subsequently develop educational packages for distribution directly to Montana citizens. The unit will contain a mobile component which will enable "on-site" training, thus reducing a major portion of the travel cost associated with centralized training. An equipment evaluation and repair component will help minimize "down time" and direct future acquisitions toward proven items. Programmatic support will assist faculty and staff with development of specific software appropriate to Montana.

At the present time, approximately 75 percent of Extension Service offices are equipped with at least one computer. External funds are being solicited to improve our computer technology base. It appears that we will be successful in this effort and that all units will be equipped with computers in the near future. Our greatest need will then be establishment of the proposed support unit to enable us to fully utilize this and other emerging technology.

MONTANA STATE UNIVERSITY
PROGRAM MODIFICATION REQUEST FORM
1990-1991 BIENNIUM

TITLE: Value Added in Agriculture
AMOUNT: Fiscal 1990 $116,000 Fiscal 1991 $116,000
PROGRAM: Montana Agricultural Experiment Station/Montana Extension Service

ABSTRACT:

This proposed program modification is designed to evaluate Montana's agricultural products in terms of potential for value added and to identify and develop processes to potentially increase the value of these commodities. In addition, the program would explore potential new and expanding markets for Montana commodities.

OBJECTIVE(S) OF MODIFICATION:

The goal of this program is to improve Montana's economy by concentrating efforts on adding value to the commodities produced in the state.

BUDGET:

EXTENSION SERVICE	1990	1991
FTE	1.0	1.0
Personal Services		
Contract Faculty .5	$ 22,500	$ 22,500
Professional	12,500	12,500
GTA/GRA		
Classified .5	9,000	9,000
Other		
Subtotal Personal Services	$ 44,000	$ 44,000
Operations		
Contracted Services	$ 1,000	$ 1,000
Supplies	2,000	2,000
Communications	1,000	1,000
Travel	2,000	2,000
Other Operations	4,000	4,000
Subtotal Operations	$ 10,000	$ 10,000
Capital	$ 4,000	$ 4,000
Total Budget (Extension Service)	$ 58,000	$ 58,000

TITLE: Value Added in Agriculture

AGRICULTURAL EXPERIMENT STATION	1990	1991
FTE	1.0	1.0
Personal Services		
Contract Faculty .5	$ 22,500	$ 22,500
Professional	12,500	12,500
GTA/GRA		
Classified .5	9,000	9,000
Other		
Subtotal Personal Services	$ 44,000	$ 44,000
Operations		
Contracted Services	1,000	1,000
Supplies	2,000	2,000
Communications	1,000	1,000
Travel	2,000	2,000
Other Operations	4,000	4,000
Subtotal Operations	$ 10,000	$ 10,000
Capital	$ 4,000	$ 4,000
Total Budget (Experiment Station)	$ 58,000	$ 58,000
Total Modification Budget	$116,000	$116,000

TITLE: Value Added in Agriculture

PROGRAM MODIFICATION DESCRIPTION

Agriculture is Montana's largest industry. Agricultural products are produced and sent elsewhere in raw form for processing. An added value of five percent to Montana's gross agricultural revenues would mean an extra $7.5 million in gross sales alone. Currently, a few small firms are successful by adding value to Montana's grains and livestock.

This proposed program modification is designed to evaluate Montana's agricultural products in terms of potential for value added and to identify and develop processes to potentially increase the value of these commodities. In addition, the program would explore potential new and expanding markets for Montana commodities.

The Agricultural Experiment Station component would involve research aimed at development of new technologies for converting current-value components or by-products of agricultural commodities into enhanced-value specialty products to meet specific market needs. The research thrust could be expanded to include development of new or alternative crops for specialty needs of industry and non-food uses and development of processing technologies for transforming raw agricultural commodities into new products.

The Extension Service is currently operating an educational program aimed at assisting Montanans understand the concepts of "value added" and how to incorporate them into an organized business enterprise. Unfortunately, current budget levels allow us to reach only 10-15 percent of the potential audience for this material. Funding of the modification would allow us to increase efforts in the dissemination of the research information on value added opportunities to Montana producers and processors. This effort would include information on the licensing and other start-up aspects of small business development, educational assistance in developing business and marketing plans, and assistance in organizing marketing groups.

The goal of this program is to improve Montana's economy by concentrating efforts on adding value to the commodities produced in the state.

MONTANA STATE UNIVERSITY
PROGRAM MODIFICATION REQUEST FORM
1990 - 1991 BIENNIUM

TITLE: Water Quality
AMOUNT: Fiscal 1990 $168,000 Fiscal 1991 $168,000
PROGRAM: Montana Agricultural Experiment Station/Montana Extension Service

ABSTRACT:

Survival of both agriculture and municipalities depends on wise management of water. Problems associated with depletion and pollution of both surface and groundwater reserves are of critical importance to the State of Montana and the nation. Unfortunately, water is often taken for granted until its availability is constrained by limitations on either its supply or quality. Montana is in a particularly eminent position, since within her boundaries is one of the largest watersheds and headwaters of one of North America's largest agricultural and commercial waterways. In Montana, approximately 96 percent of water withdrawal is by agriculture. Information on the effects that agricultural management systems have on groundwater quality is severely lacking. Information delivery is severely hampered by lack of appropriate data to permit formulation of prescriptive recommendations. The proposed program modification will be a joint Agricultural Experiment Station/Cooperative Extension Service venture in water quality and management to develop knowledge, information and public understanding of appropriate ways to prevent groundwater contamination while maintaining high agricultural productivity.

OBJECTIVE(S) OF MODIFICATION:

To conduct research and develop an information delivery program aimed at prevention of groundwater contamination and sustainability of high agricultural productivity under both irrigated and dryland conditions.

BUDGET:	1990	1991
AGRICULTURAL EXPERIMENT STATION		
FTE	2.0	2.0
Personal Services		
Contract Faculty (1.0)	$45,000	$45,000
Professional (0.5)	12,500	12,500
GTA/GRA (0.5)	9,000	9,000
Classified		
Other		
Subtotal Personnel Services	$66,500	$66,500
Operations		
Contracted Services		
Supplies	5,000	5,000
Communications	1,000	1,000
Travel	2,000	2,000
Other Operations	2,000	2,000
Subtotal Operations	$10,000	$10,000
Capital	5,000	5,000
Total Budget (Agricultural Experiment Station)	$81,500	$81,500

BUDGET:	1990	1991
COOPERATIVE EXTENSION SERVICE		
FTE	2.0	2.0
Personal Services		
Contract Faculty (1.0)	$ 45,000	$ 45,000
Professional (0.5)	12,500	12,500
GTA/GRA		
Classified (0.5)	10,000	10,000
Other		
Subtotal Personnel Services	$ 67,500	$ 67,500
Operations		
Contracted Services	2,000	2,000
Supplies	5,000	5,000
Communications	2,000	2,000
Travel	4,000	4,000
Other Operations	2,000	2,000
Subtotal Operations	$ 15,000	$ 15,000
Capital	4,000	4,000
Total Budget (Cooperative Extension Service)	$ 86,500	$ 86,500
TOTAL MODIFICATION BUDGET (AES/CES)	$168,000	$168,000

PROGRAM MODIFICATION DESCRIPTION:

Water quality research has begun to address groundwater contamination problems; however, the extent of research is insufficient for developing knowledge required to insure an adequate quantity of quality groundwater in the presence of sustained agricultural, industrial and municipal activities. Similarly, public education programs in the United States have addressed the problem of groundwater contamination, but the scope of these Extension programs is insufficient for developing public understanding of public and private actions needed to insure an adequate quantity and quality of groundwater. The proposed program in Research and Education in Water Quality is needed to:

1. assess the impact of water pollutants on livestock, crops, forest and aquatic ecosystems;
2. formulate improved management systems that better utilize chemicals, minimize erosion and reduce the movement of pollutants to surface and groundwater;
3. develop economical practices to increase water yields from forests and rangelands;
4. increase efficiency of irrigation water use;
5. increase understanding of relationships between crop production systems and the quality of ground and surface waters;
6. improve soil and water management systems to reduce the impact of salinity and improve irrigation efficiencies;
7. design systems for the safe and economical disposal of contaminated irrigation waters;
8. to develop and implement coordinated interdisciplinary activities concerned with the nature of water resources, the importance of water to human health and nutrition, the proper use, handling and disposal of agricultural chemicals and the impact of various land uses.

MONTANA STATE UNIVERSITY
PROGRAM MODIFICATION REQUEST FORM
1990-1991 BIENNIUM

TITLE: Research and Education on Low Input Agriculture
AMOUNT: Fiscal 1990 $176,900 Fiscal 1991 $176,000
PROGRAM: Montana Agricultural Experiment Station/Montana Extension Service

ABSTRACT:

Changes in production and management practices have the potential to improve the profitability of Montana agriculture through carefully designed reduction of purchased inputs. Known more commonly as "low input or sustainable agriculture," practice changes frequently involve reduction of chemical inputs, which has secondary benefits to the land, air, and water components of our environment. Determination of changes applicable to Montana and actual implementation of these will require both a research and extension effort. Minimal programs are currently being carried out using redirected funds. The proposed modification will expand this effort and speed up the adoption process in Montana.

BUDGET:

EXTENSION SERVICE	1990	1991
FTE	1.5	1.5
Personal Services		
Contract Faculty		
Professional (1.0 FTE)	$ 42,700	$ 44,800
GTA/GRA		
Classified (.5 FTE)	9,750	10,200
Other		
Subtotal Personal Services	$ 52,450	$ 55,000
Operations		
Contracted Services	12,600	12,600
Supplies	2,000	2,000
Communications	1,400	1,400
Travel	4,000	4,000
Other		
Subtotal Operations	$ 20,000	$ 20,000
Capital	$ 6,000	$ 2,000
Total Budget (Extension Service)	$ 78,450	$ 77,000

TITLE: Research and Education on Low Input Agriculture

AGRICULTURAL EXPERIMENT STATION	1990	1991
FTE	1.5	1.5
Personal Services		
Contract Faculty	$	$
Professional (1.0 FTE)	42,700	44,800
GTA/GRA		
Classified (.5 FTE)	9,750	10,200
Other		
Subtotal Personal Services	$ 52,450	$ 55,000
Operations		
Contracted Services	20,000	20,000
Supplies	10,000	10,000
Communications	2,000	2,000
Travel	5,000	5,000
Other	3,000	3,000
Subtotal Operations	$ 40,000	$ 40,000
Capital	$ 6,000	$ 4,000
Total Budget (Experiment Station)	$ 98,450	$ 99,000
Total Modification Budget	$176,900	$176,000

TITLE: Research and Education on Low Input Agriculture

PROGRAM MODIFICATION DESCRIPTION

Implementation of an economically sound low input agricultural program in Montana will require both research and extension program efforts, hence this combined proposal for program modification. Specific objectives to be accomplished include the following:

1. Development of a usable database of existing research in the low input agricultural area.

2. Conduct educational programs for producers using material from the database. This will include teaching producers techniques of low input agriculture, assessment of risk involved with change, and marketing of products from their farms.

3. Expand research on the use of legumes to supply a portion of the nitrogen required by field crops.

4. Teach producers how to use integrated pest management techniques to better control vectors.

5. Identify specific areas where additional research is needed to enhance the application of low input agriculture in Montana.

MONTANA STATE UNIVERSITY
PROGRAM MODIFICATION REQUEST FORM
1990 - 1991 BIENNIUM

TITLE: Range Livestock Nutrition Program
AMOUNT: Fiscal 1990 $102,000 Fiscal 1991 $102,000
PROGRAM: Montana Agricultural Experiment Station

ABSTRACT:

Animal products are major sources of many essential nutrients in the human diet. Animal protein is a high quality, complete, balanced protein but the composition (such as muscle-to-fat ratio) of certain animal products must be altered to improve consumer acceptability in terms of current dietary standards. Increased use of rangeland in livestock growing/finishing programs should decrease fat content of animal products because sustained high rates of gain and accompanying high fat accumulations are not possible under this type of production system. Leaner animal products for human consumption and increased economic value of these commodities can be achieved by manipulating nutritional processes to optimize rangeland forage utilization.

Sixty percent of the state's land surface area produces rangeland forage used for livestock production. Reinforcement of the range livestock nutrition area through redefinition of the traditional Dairy Scientist position will permit us to more satisfactorily meet the needs of the Montana livestock industry and health-conscious consumers. This modification requests restoration of personal services and operations dollars associated with the loss of the Dairy Scientist position at MSU and the closure of the Dairy Research Program to permit reallocation of resources and reinforcement of the existing Range Livestock Nutrition Program. Research in this area can significantly impact the economy of Montana through more competitive red meat products in the market place.

OBJECTIVE(S) OF MODIFICATION:

The Range Livestock Nutrition Program at Montana State University is oriented toward improving the efficiency of livestock production by manipulating nutritional processes to optimize rangeland forage utilization. Specific objectives of the modification are:

1. identify and manipulate factors which govern nutrient availability from rangeland forage, and to develop techniques for manipulating the ruminal microflora to enhance utilization of cellulosic (i.e., high fiber) feedstuffs;
2. to define precise nutrient requirements for lean animal growth and reproduction under rangeland conditions;
3. to seek genetic, nutritional or endocrinological controls over factors governing synthesis and degredation of protein and fat in food animals raised under range conditions, and manipulate these mechanisms to effect efficient production of lean animal products with increased economic value.

PROGRAM MODIFICATION REQUEST FORM
1990 - 1991 BIENNIUM

TITLE: Range Livestock Nutrition Program

BUDGET:	1990	1991
FTE	2.25	2.25
Personal Services		
Contract Faculty (.75)	$ 33,000	$ 33,000
Professional (1.0)	20,800	20,800
GTA/GRA (.5)	9,000	9,000
Classified		
Other		
Subtotal Personal Services	$ 62,800	$ 62,800
Operations		
Contracted Services	4,000	4,000
Supplies	18,700	18,700
Communications		
Travel	4,000	4,000
Other Operations	7,500	7,500
Subtotal Operations	$ 34,200	$ 34,200
Capital	5,000	5,000
Total Budget	$102,000	$102,000

PROGRAM MODIFICATION DESCRIPTION:

The proposed program will be directed at optimizing biological efficiency in the production of lean animal products by improving the genetics, physiology, nutrition, health and management systems of animals grown under rangeland conditions. Efficient utilization of rangeland forage may be accomplished by identifying and manipulating factors which increase nutrient availability in forages and by developing techniques to manipulate ruminal microflora to enhance their utilization of fibrous feedstuffs. A basic livestock nutritionist and accompanying support staff is a necessary research team component to effectively address these problems. Modern molecular biology techniques such as genetic engineering can be used in the successful pursuit and resolution of problems associated with effective utilization of ranglands by livestock. The rangeland resource is particularly well suited for the production of lean red meat and animal products with potential for greatly enhanced economic value to Montana producers and consumer appeal to a health-conscious public.

MONTANA STATE UNIVERSITY
PROGRAM MODIFICATION REQUEST FORM
1990 - 1991 BIENNIUM

TITLE: Restoration of Operational Funds and Emphasis on Economic Development
AMOUNT: FISCAL 1990 $228,957 FISCAL 1991 $228,957
PROGRAM: Montana Extension Service

ABSTRACT:

Operating costs for Education and Information Delivery continue to increase. For the FY 89 Biennium, Extension was appropriated $630,381 per fiscal year. Because of mid-year cuts, actual expenditures were $545,757 for FY 86. The lower figure was used as a basis for the FY 89 Biennium and $498,984 and $500,456 was appropriated. This has seriously impacted program delivery. In addition, savings of $228,957 accrued from administrative consolidation with the Experiment Station and the College of Agriculture were removed by the Conference Committee and the legislative bodies. This modification to restore these funds includes $170,000 for operating dollars, $130,000 to replace general operating funds lost, $40,000 for operating support for Instructional Development and $58,957 for increased emphasis in Economic Development.

Extension requests for educational assistance in Economic/Rural Development continue to increase. The $58,957 would support 1.5 FTE and provide operating funds to support the efforts in Rural Economic Development.

BUDGET:	1990	1991
FTE	1.5	1.5
Personal Services		
Professional Staff (1.0)	$40,000	$40,000
Classified (.5)	9,750	10,200
Subtotal Personal Services	$49,750	$50,200
Operations		
Contracted Services	2,000	2,000
Supplies	3,207	2,757
Communications	1,000	1,000
Travel	3,000	3,000
Other Operations		
Subtotal Operations	$ 9,207	$ 8,757
Total Budget	$58,957	$58,957

TITLE: Restoration of Operating Funds and Emphasis on Economic Development

PROGRAM MODIFICATION DESCRIPTION:

This program modification will allow the Extension Service to enhance and reinforce the existing system and methods of program delivery. Personal Services make up 86.4 percent of the total budget. The operating dollars are, in fact, what drives the delivery mechanism provided by the personal services dollars. The reinstatement of these dollars, including the operational dollars for instructional development would enhance the delivery capabilities of the system.

Rural Economic Development educational efforts would be greatly enhanced by this modification. A rural development/technology institute would be organized to serve as a focal point for economic development educational efforts as well as services provided. Referrals would be made from this institute to appropriate providers of services on information. Assistance would also be provided for feasibility studies and other educational support.

EXHIBIT 8
DATE Jan 31, 1989
HB

January 31, 1989

Mr. Chairman, Members of the Appropriation Committee:

Good morning. My name is Lorraine Cattermole. I live in the Cave Bay area of Canyon Ferry Lake. I am an extension homemaker and am here in support of the Montana Extension Service.

When I first joined my extension homemakers club I thought it was just a social club but I soon found out it was much more than that. By working through clubs, usually composed of a small group of women, and then on the county and state level, the Extension Service has great impact in the field of education. It helps us in developing our potential and meeting goals in many areas that we set for ourselves.

Our County Extension Home Economist prepares and presents classes that are both informative and helpful to our individual clubs and for county meetings. She has a weekly column in the local newspaper as well as a radio program. She and the staff are always there when we need help or guidance.

In my own club I've seen how participation in programs and workshops has broadened the horizons of many of the members and it has been just great. From these members alot of this has been passed on to their families and friends because of their enthusiasm and interest.

Extension Homemakers provide scholarships to college students through the dues that they pay because they realize how important education is.

The Extension Service staff are faculty of Montana State University. Money is needed to facilitate programs to the people of the State of Montana. This is not only for the rural population as many think, but for all of us.

Every June several hundred women from all over Montana meet at the MSU campus in Bozeman to participate in Woman's Week. They take classes in a wide variety of subjects dedicated to enriching their lives. A few of the classes that I have taken include Estate Planning, Women in Religion, Montana History, Using a Financial Calculator, Leading Effective Meetings, and Interpersonal Communication.

A new program started in 1988 is the Family Community Leadership Project. This is designed to develop leadership and public policy skills in volunteers in Montana. It is aimed at creating an awareness and increasing knowledge of public affairs and the legislative process. Recipients of the training are expected to share what they have learned with others in their local communities. The average citizen cares about what is happening and often would like to become involved but either doesn't know how to participate or thinks that his participation wouldn't make a difference. The Family Community Leadership program is to show him that he can help and encourages him to do so.

I thank you for your attention and ask that you support the requested appropriation for the Extension Service.

Lorraine Cattermole

Lorraine Cattermole
P. O. Box 1195
Helena, Mt. 59624

2102 E. 6th Ave.
Helena, Montana 59601
January 24, 1989

Members of the Appropriation Committee:

Dear Sirs:

I am writing in support of Extension Homemakers and their County offices.

I have been a member of County Extension Homemakers clubs for over 30 years. Extension clubs bring many women together (both city and rural residents) for fellowship, programs, idea exchanges, Community projects etc. Our programs are varied and informative. The County offices have many useful pamphlets, lists of available speakers, Phone resource answering, County meetings etc. Their monthly newsletters are very helpful.

I urge you to support the Extension Homemakers offices and programs used by many Montana women.

Thank you,

Marie D. Carlson

Marie D. Carlson
2102 E. 6th Ave.
Helena, Montana 59601

Member of L.&C. Town and Country Club

January 25, 1989

Appropriations Committee
c/o Capitol Station
Helena, Mt. 59620

Dear Committee Chairman and members,

Please accept and consider this written testimony by me on behalf of the MSU Extension Service in general and the Extension Homemakers of Lewis and Clark County in particular.

As a 24 yr. charter member of an extension homemaker club, I cannot stress enough how important this branch of the Extension Service is to this wife, mother and working lady. Through its educational services I have broadened my knowledge in health, family life, citizenship and community outreach, housing and environment, lobbying and legislative processes. This ongoing education has given me skills in public speaking, and the self-esteem necessary to teach others in my community.

By continuing your support of the MSU-Extension Service, you will be supporting homemakers and their families throughout Montana who otherwise would not be able to realize the benefits of this continuing education.

Thank you.

Sincerely,

Alene A. Stoner

Alene A. Stoner
6330 Blackfoot Drive
Helena, Montana 59601
458-5158

7746 - Canyon Ferry Rd
Helena, MT 59601
Jan. 25, 1989

Members of the Appropriations Committee
1989 Montana Legislature

I am a member of the Bayshore Belles Extension Club, one of the many extension clubs in this area.

We are groups of women meeting monthly to promote a better way of life for all through fellowship, continuing education and service, to provide guidance in our homes and communities for the uniting of people to make the world a better place in which to live,

We have many projects that come on a National level with clubs in each area carrying out the projects on community levels, to name a few - Food, Health and Nutrition, which we have sponsored Health Fairs for all in the area.

We have projects to promote safety, in the home, in the car and all we do. We have international projects, which our club became a "sister club" to. Ladies in another country and exchanged ideas. At present our international project is to raise money to help families buy goats in Haiti. These are a few examples. We also give a scholarship to a boy and a girl every year to study agriculture in college. We donate money to local charities in our community. We have visited nursing homes to cheer these lonely people.

We are a busy group of women and the community is a better place because of our clubs.

Thank you,

Mrs. Ethel S. Conover

January 27, 1989
Helena, Montana
59601

Members of Appropriation Committee:

As a member of Extension Homemakers I feel it is important we receive monies to continue this program.

Education is emphasized thru scholarships for Home Economic students. Montana State University has Women's Week in Bozeman, for a week of continuing education, with a large variety of classes.

Mrs. Ruth E. Hardin
3868 East Shore Drive
Helena, Montana 59601

EXHIBIT 9
DATE Jan 31, 1989
HB

Testimony of the

Montana Grain Growers Association

before the

Joint Appropriations Educational Subcommittee

January 31, 1989

on
Funding of the
Montana Agricultural Experiment Station & Extension Service

Mr. Chairman, members of the committee, my name is ~~Dean Folkvord~~ Harry Johnson. I am a wheat and barley producer from ~~Three Forks~~ Kremlin. I am a ~~director~~ President of the Montana Grain Growers Association and serve as ~~the chairman~~ a member of its Research and Utilization committee. I rise in support of funding the programs of the Montana Ag Experiment Station and Extension Service.

Never before in the history of agriculture has it been so important that the research and extension functions of our Land Grant Universities be adequately funded. I say that for two reasons.

First, because the agriculture industry in the United States and the World has become extremely competitive. While the drought of 88 and the 1985 farm bill have somewhat reduced the burdensome stocks of grains worldwide, the ability to produce greatly exceeds the demand for our products. This has made price and quality very important factors in our struggle to capture domestic and world markets.

To capture and maintain an acceptable share of world grain markets, U.S. producers must continue producing a high quality product at a price that can competitively move into world markets. To do this, on-going research must be conducted to provide new and improved varieties--varieties that are more efficient, that are disease resistant, that require less fertilization -- grains that not only meet the needs of the buyer, but that cost less to produce.

Second, because the world as a whole is seeing the folly of agriculture subsidies that create barriers to natural trade. While it will no doubt take many years, perhaps decades, to decide how the world will approach the removal of ag subsidies, it will happen. We will someday need to be ready to produce wheat and barley for whatever price they can demand from the marketplace. To be able to that, we need to be the best at what we do--we need to be able to produce the best product at the least cost. It's going to take research and education to do that.

Specifically, I would like to support the Program Modification request for $160,000 for the spring wheat breeding and genetics position for the Experiment Station.

Spring wheat is extremely important to the economy of Montana. Over half of the wheat produced in Montana is Dark Northern Spring Wheat, a high quality, high protein, Hard Red Spring Wheat. DNS is a bread wheat primarily used to blend with Hard Red Winter Wheat flours to increase protein levels and improve milling and baking qualities. Montana, on the average, is the number 2 producer of Hard Red Spring wheats in the U.S. Our climate and land is ideally suited to producing this high quality and unique wheat. We can't raise high yields, but we can raise good consistent quality that is recognized by the discriminating buyer.

But we have competitors. The Canadians and other U.S. states also raise Hard Red Spring wheats. To maintain our position in domestic and world markets, Montana must continue building better wheats--wheats that have higher protein, better milling and baking qualities, and higher nutrition values. And they need to be wheats that have a low cost of production -- wheats that produce more with less fertilizers, herbicides, pesticides, and fungicides.

Mr. Chairman, I ask that you consider funding the spring wheat breeder and genetics position so that Montana farmers will continue to have the opportunity of raising a high quality specialty crop that plays a major role in the economy of Montana. Thank you for listening. I would be happy to answer any questions at the appropriate time.

EXHIBIT 10
DATE Jan 31, 1989
HB

MONTANA WHEAT AND BARLEY COMMITTEE

Research and Marketing

750 Sixth Street S.W. • P.O. Box 3024, Great Falls, Montana 59403-3024
Telephone (406) 761-7732

JIM CHRISTIANSON
Executive Vice President

TESTIMONY OF THE
MONTANA WHEAT AND BARLEY COMMITTEE

Great Falls, Montana

PRESENTED BY

LARRY BARBER, CHAIRMAN

For the record of

the

SENATE AGRICULTURE COMMITTEE

on

Program Modification of the
Montana Agricultural Experiment Station
and
Extension Service Budget

Helena, Montana

January 31, 1989

My name is Larry Barber, a Denton-area wheat and barley grower, and chairman of the Montana Wheat and Barley Committee.

In 1987, the Montana Legislature authorized the position of Spring Wheat Breeder at Montana State University. Dr. Luther Talbert is in place at MSU filling that vacancy of 7 years.

Having Dr. Talbert in place, of course, is only half the story. That position must be funded on a permanent basis, or a professional of Mr. Talbert's caliber will be difficult to keep. As a result of the 1987 legislation, the funding for spring wheat breeding has been divided between general fund monies and producer dollars through the Montana Wheat and Barley Committee. Producer funds, in the last biennium, accounted for $160,000 of the program -- which is the largest item in our research budget. While the Committee was more than willing to help get this program started, the funding of "continuing research" is not the purpose of the producer dollars.

Producer dollars should be used for research needs such as:

1) An immediate problem that can not wait to be addressed by the bi-annual legislature. Example -- $38,000 for Russian Wheat Aphid research in 1988.

2) Very theoretical research for which the use of general fund dollars would be considered too high a gamble. If that gamble pays off and the research shows merit, the MW & BC would expect the general fund to pick up the effort. An example currently would be "sweet wheat" or "chickbar" research.

3) Check-off dollars that attract private sector matching. Example -- high lysine barley, and infra-red soil mapping. Many grants are contingent on seed money which the Montana Wheat and Barley Committee provides to MSU researchers.

4) The Montana Wheat and Barley Committee looks for product enhancement or "science advancing" research.

Of the $413,000 of producer money the Wheat and Barley Committee has contracted for this year with MSU, fully half of the research budget is supporting "continuing research" on items that were not funded by MSU's

legislative budget. Currently, 20 percent of the Committee's total research budget is being spent on the Spring Wheat Breeding program.

However, there is a core research program that is the responsibility of the Legislature and their appropriation of general fund dollars. While I would argue that the Legislature has a responsibility to fully fund all the small grain breeding programs at MSU, at the very least, the Legislature should fund spring wheat breeding at a par with the support given to winter wheat and barley breeding.

It is my hope, as chairman of the Montana Wheat and Barley Committee, that the Legislature will fund a Spring Wheat Breeding program at MSU.

Thank you for your consideration.

Alternative Energy Resources Organization
44 N. Last Chance Gulch, #9, Helena, Montana 59601
406-443-7272

EXHIBIT 11
DATE Jan 31, 1989

Testimony presented to the Education Subcommittee by Al Kurki of the Alternative Energy Resources Organization (AERO) January 31, 1989

I am here to urge this committee to support the proposed low-input sustainable agriculture research and extension program.

What is low input sustainable agriculture?

Sustainable agriculture is characterized as those practices that are both economically viable and ecologically sound over the long term. Sustainable farming or ranching systems tend to be 1) less dependent on expensive, energy-intensive commercial inputs, 2) resource conserving, using good stewardship and animal husbandry, 3) market sensitive, and 4) diversified and adaptive.

Why is this program necessary?

While the economic squeeze of spiraling farm operating costs and declining commodity prices has recently eased somewhat, pesticides and fertilizers are still the largest share of energy consumed on farms and ranches. Contamination of groundwater, particularly from nitrates, severe soil erosion and declining organic matter levels are very real problems in Montana. Health, safety and environmental concerns, interest in higher-value non-program crops and in reducing operating costs have spurred many Montana farmers to seek information on sustainable farming practices even though so little regionally-applicable information is available.

Why is separately-funded sustainable agriculture important?

1) The new positions created in this program could help tie together the current high-quality (but somewhat fragmented) research programs in biological pest control, cereal/legume rotation and alternative crops into a unified body of useful information.

2) It would improve the Ag Experiment station and Extension capacity and effectiveness in securing private sector and newly designated USDA funding for Low Input Sustainable Agriculture research and education programs.

3) Last, but not least, a commitment of funds now is a logical next step in an action the legislature set in motion in 1985.

In 1985, both houses of this legislature directed the state ag experiment station and Extension to develop a comprehensive program in sustainable ag. While there was no money in that directive, which passed by overwhelming margin, there was a message--a mandate. MSU took that message seriously.

For over three years, Experiment Station and Extension officials met with a committee of farmers and ranchers seeking regionally applicable sustainable agriculture information. Together, they identified and prioritized the most important research needs in this topic area. MSU expanded its cereal/legume research to more of the state research centers, dedicated a half-time Extension specialist to sustainable agriculture and became a cooperative and active player in a number of farmer and extension agent-level initiatives in this area.

But those of us watching these efforts could see that they were being attempted within the confines of resources already strained to the limit.

I urge you to support this very modest budget amendment as it was originally drafted. Montana's farmers, consumers and environment will benefit from your positive action.

VISITOR'S REGISTER

Education SUBCOMMITTEE

AGENCY(S) Ag & Extension DATE 1-31-89

DEPARTMENT

NAME	REPRESENTING	SUPPORT	OPPOSE
LARRY BARBER	Mont Wheat & Bk Comm	X	
DAVID F. GIBSON	MSU - UTAP	X	
Lorraine Cattermole	Mt Extension Svc	x	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT
IF YOU HAVE WRITTEN COMMENTS, PLEASE GIVE A COPY TO THE SECRETARY.

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