Departmental Base Budget Overview

Department **Agriculture Dean's Reserve** Executive **Provost**

Index **412011** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
107,834	0	72,056	13,100	57,128	55,868	104,304	0	2,185	23,057	36,695	-65.97%

The mission of the College is to provide an engaging and innovative learning experience for undergraduate, graduate students and post docs. Our programs serve as the conduit for revitalizing agriculture, effectively managing natural resources, and for economic development in the state. Instructional programs in the College are evolving and will meet the demands of a changing society in Montana, the region and the nation.

This account is a holding account for the College activities at the administrative level. There are no specific positions budgeted. Funds for personal services are received and disbursed to college departments according to faculty lines that are predominantly funded by the Montana Agricultural Experiment Station. Operating funds at the College level are held for the same reason – to provide support to departments if an unexpected or unbudgeted situation occurs. In addition, funds have been disbursed to support College recruitment/retention functions, graduation, extra sections, spring honors banquet, dues payment to NASULGC, distance education courses and teaching improvement activities. These are the only flexible funds in the College budget to support unexpected or unbudgeted situations that would not be supported by the university.

Departmental Base Budget Overview

Department **Ag Economics & Economics** Executive **Provost**

Index **412100** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
783,421	861,798	828,661	833,157	866,729	767,801	821,848	912,147	915,388	938,786	1,003,387	28.08%

The Department of Agricultural Economics and Economics (DAEE) currently has 20 faculty members, half of whom work in the field of Agricultural Economics and half of whom are General Economists. The DAEE ascribes to the highest academic standards and is dedicated to education that develops human capital. Faculty members are highly productive scholars, who, in addition to their teaching, conduct research in Agricultural Economics and Economics, with a focus on research that generates high quality publications and outreach programs. In 2006, the department underwent a thorough external academic review. The review concluded that, "The Department of AEE is fundamentally a strong and central unit within Montana State University. It is an important source of talent and expertise for the State. It is also a well-respected contributor to high-quality scholarship and policy advice within the state as well as nationally and internationally. Members of the department publish in the top journals in Agricultural Economics and Economics. Faculty members have also served in prominent positions in government and in professional organizations." With respect to teaching, "The quality of instruction offered to both undergraduates and Masters' candidates is high. …The result is that the students are well-trained and highly successful." With respect to research, "the quality and productivity of published research is exceptional for a department that does not maintain a large graduate program of offer a PhD." With respect to outreach, "The outreach programs of the department are generally of high quality, timely, topical, visible, and well-received. They have high impact in the state."

The DAEE offers a very rigorous, highly respected Master's degree in Applied Economics, graduating an average of six students per year. Undergraduate degrees are offered in Economics and in Agricultural Business, with undergraduate majors numbering about 100. DAEE courses also play substantial service roles for other programs in the University. DAEE teaching is innovative and consistently of very high quality. Examples of such innovations include the "Follow the Grain," course which in 2006 traveled to Taiwan and Japan to study Montana's global wheat industry. Recent faculty awards include the 2006 Distinguished Scholar Award from of the Western Agricultural Economics Association, MSU's 2006 Excellence in Outreach Award, MSU's 2006 Cox Family Fund for Excellence Award, a 2006 MSU Foundation "Excellence Award" and MSU's 2006 FFA College of Agriculture "Outstanding Professor" award.

Quality teaching was performed despite a rather small departmental budget relative to MSU and similar departments nationally. As noted in the external review of the department, "Faculty salaries are low and compressed." According to the American Economic Association, economics departments at institutions with an M.A. as their highest awarded degree had an average 2005-2006 AY starting salary for new assistant professors that is well above that of our associate professors.

Departmental Base Budget Overview

Department **Plant Sciences & Plant Pathology** Executive **Provost**

Index **412300** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
75,770	88,740	540,743	624,180	598,206	590,058	570,818	577,686	582,547	611,508	602,942	695.75%

The Plant Sciences and Plant Pathology Department (PSPP) was formed in 1999 with faculty from three departments. In July 2005, we added 2 faculty (both with 20% CoA appointments) from the disbanded Entomology department. Our mission is to provide leadership and expertise in plant sciences and plant pathology in undergraduate and graduate student training, research programs, and outreach/service activities. The department plays a crucial role in the overall mission of the university as a land grant institution and is the only unit in the state focused primarily on plants and their pathogens. We are the largest collection of plant biologists in the region.

As PSPP was formed in 1999, the “10-yr % change” figure is misleading. Since FY2000, PSPP has experienced a 2% net reduction in base budget despite an increase in number of courses offered and a 50% increase in total student credit hours taught per faculty FTE (from FY05 KPI data). The increase in base budget between the 05-06 fiscal years can be totally accounted for by the CoA salaries of the two new faculty members from Entomology and raises.

PSPP trains undergraduates in the fields of crop science, horticulture, landscape design, plant biology, plant pathology and plant biotechnology. We have the second largest number of undergraduate student majors in the College. The department also contributes considerably to the instruction of undergraduate biology and biotechnology at MSU. We are responsible for teaching half of Biol 102 and Biol 213 every semester they are taught. We teach all of the genetics (Biol 301) and evolution courses on campus (Biol 403 is co-taught with LRES). We have responsibility for teaching many of the biology courses that involve plants and insects, including Biol 106, Biol 430, Biol 434, Biol 435, Biol 436, Biol 437, and Biol 501. We also have responsibility for the Introductory Biotechnology course (PS 101) and a 5 credit biotech laboratory (PS 212) for Biotechnology majors. We advise all of the Biotechnology majors during their freshman and sophomore years.

PSPP faculty are very research active. Departmental research expenditures for FY06 were $3,363,733. Our faculty produce, evaluate and release varieties of crop plants (unique in the state); investigate organisms producing diseases in plants and the control of such diseases (unique in the state); explore plant production methods and various aspects of horticulture (unique in the state), and research basic aspects of plant and plant pathogen biology, including activity in the fields of systematics, physiology, molecular biology, genetics, and natural products. We have active graduate programs in Plant Sciences, Plant Genetics, Plant Pathology, and Entomology, currently with 21 students.

The department serves an important role in outreach/extension, with every member of the faculty expected to communicate his/her research findings to the citizens of Montana outside a formal classroom setting. We house several units that serve the state agricultural community, including the Seed Potato Certification Program, the Cereal Quality Lab, the Seed Testing Lab, Seed Certification Program and Foundation Seed. Our presence is felt in every corner of the sate. Our extension specialists emphasize interactions with grain, potato and sugar beet growers, as well as retailers, wholesalers and producers of horticultural products and landowners.

Departmental Base Budget Overview

Department **Animal and Range Sciences** Executive **Provost**

Index **412400** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
458,301	492,562	437,052	525,778	533,143	513,412	537,114	564,712	570,434	617,501	628,418	37.12%

The mission of the Department of Animal and Range Sciences is the scholarly discovery and dissemination of science and technology supporting livestock, rangelands, and other renewable natural resources in socially-acceptable, and economically- and ecologically-sustainable systems. The Department strives to be a regional leader in applied, integrated range livestock education, research, and service.

Goals of the Department's academic programs are defined by the characteristics desired of graduates. Besides mastering subject matter relevant to their major, successful graduates should possess a solid foundation in the basic sciences (physical, biological, and social), demonstrate proficient written and oral communication skills, be adept at synthesis and problem-solving, and have an awareness of regional and global issues (technical, ethical, and societal) involving animal agriculture, rangelands, and other renewable natural resources. These programs are necessary for the University to meet the current and future needs of its clients – i.e., students, parents, employers, and society as a whole.

The Department provides the following services to the University: we deliver B.S. degree programs in Animal Science and Range Science, M.S. and Ph.D. programs in Animal and Range Sciences, and courses that serve degrees offered by the Department and other units across campus. Further, we recruit, advise and mentor students.

The goal of research programs within the Department is to address meaningful scientific questions and develop technology relevant of animal agriculture, rangelands, and renewable natural resources. Problems pertinent to Montana, the Northern Great Plains, and the Northern Rocky Mountains are emphasized. The Department eagerly looks forward to greater partnerships with USDA-ARS in the area of genomics/proteomics research.

Through extension education and outreach/service programs the Department seeks to be a trusted partner with its clients in the livestock industries and natural resource management, and to serve as their gateway to MSU.

Recent increases in expenditures reflect the refilling of one faculty vacancy and the employment of adjunct professors related to our new Equine Option in Animal Science. Enrollment in this option (approved summer 2002) is currently 56. Enrollment in our natural resources-range program has increased 12% since we changed the degree name from "Range Science" to "Natural Resources and Rangeland Ecology" last year.

Departmental Base Budget Overview

Department **Entomology** Executive **Provost**

Index **412500** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
65,857	68,993	70,165	78,276	76,233	88,231	93,925	109,234	109,990	0	0	-100.00%

As of FY 06 there is no longer a department of Entomology. The faculty of Entomology are now in other departments in the College of Agriculture.

The Department of Entomology has the sole responsibility for entomological research, education, and outreach in the Montana University System. It is our responsibility to conduct research and offer educational programs relating to insects and other arthropods that significantly impact agriculture, natural resource systems and public health. The departmental foci include recruiting and educating a diverse student body, maintaining the efficiency and health of agriculture systems, as well as inventorying, protecting, and improving natural resource environments.

The department offers a minor and MS degree in entomology because specific training or a degree in entomology is often required for employment. In AY 03-04, the entomology instructional FTE (1.15) was distributed over seven faculty. While the instructional emphasis is on graduate training, (13 courses were taught), faculty teach three undergraduate courses serving approximately 175 undergraduates coming from various campus departments and colleges. Because the department's resident instruction emphasis is graduate education, our specialized graduate courses cater to training graduate students in our discipline and closely related fields, thus enrollment in some of our graduate classes was limited to entomology students.

Research faculty (5.0 MAES distributed over eight faculty) and graduate students work in areas such as integrated pest management in small grains, forages, and stored grain, cropping systems, chemical ecology, insect behavior, biocontrol of weeds, rangeland insects, veterinary entomology, systematics and biodiversity. During the 2003 calendar year, 15 papers appeared in referred journals and numerous abstracts and presentations at professional meetings. All faculty were successful in receiving competitive grants in 2002 with the total number of dollars received approximately $1.6million. This figure reflects grants from state, regional, national and international sources and represents an excellent blend of funding agencies for the research programs the department has on-going.

Each faculty member contributes time and expertise to the departmental outreach and extension mission. Approximately 100 meetings were conducted by faculty on insect pest management on small grains and forages, updates on entomological issues, livestock insect management, biological control of weeds, pesticide policies and registration issues, and 4-H. Audiences for these programs included students in elementary and secondary schools, agricultural practitioners and businessmen, members of non-profit organization, etc. Several extension programs are coordinated through the department: IPM, pesticide applicator training, pesticide impact assessment, and crop pest management.

Faculty were represented on numerous college and university committees, served as reviewers of scientific publications, received appointments to national grants panels, elected to professional society offices, and selected for editorial boards. Appointments to these offices and panels are an acknowledgment of the regional and national recognition the faculty has earned.

Departmental Base Budget Overview

Department **Agricultural Education** Executive **Provost**

Index **412600** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
0	0	0	0	10,000	173,417	198,283	201,309	201,864	205,110	212,828	

Agricultural Education (AgEd) and Agricultural Operations Technology (AOT) programs provide students and agricultural professionals with innovative and comprehensive instruction on leadership, technology, science, and educational activities basic to the land-grant mission and that engage students in the profession of agricultural education (K-adult). These programs are grounded in scholarly activities aimed at creating new knowledge to enhance professional and technical skills of teachers and leaders who work with the agricultural industry, which is expanding in sophistication relative to machinery and processes.

The Division of AgEd/AOT offers a BS in Ag Ed and in AOT and MS in AgEd. There are approximately 85 undergraduate majors in these two programs and 5 to 8 graduate students. In AY04-05, 3.0 FTE instructed 18 courses plus seminars. The division offers one university core course, which is also required by several other majors in the College of Agriculture. Ag Ed majors have two options from which to choose: Broadfield Teaching and Extension. Alumni play an important role in recruiting students.

The division serves students who seek careers often found in Montana. A distinction of this program is its high percentage (80%) of division graduates who find professional employment in Montana, which contributes to the Montana agriculture sector and economy. These statistics apply to M.S. graduates as well. Agricultural Education majors are prepared to fulfill careers as agricultural education teachers, county extension agents, and agricultural communications specialists. Employment opportunities for Agricultural Operations Technology students exist on farms and ranches, with agribusinesses, agricultural industry, and government agencies.

Agricultural Education students have excelled in service and academic related activities. Since 1994, five agricultural education graduates have been named “Outstanding College of Agriculture Student” at Montana State University. National 4-H and the National Association of Agricultural Educators have awarded Agricultural Education and Agricultural Operations Technology student national scholarships. In the past three years, two AgEd students, Heather McCartney and Mary Anne Anderson, were awarded an internship at ACDI/VOCA in Moscow, Russia through a U.S. State Department Educational Partnership program.

Services provided: (1) International Cooperative Business Training Program focuses on improving the management and strategic planning of agricultural cooperative leaders from other countries. Work on this initiative has been conducted in Poland, Russia, and Croatia; (2) Montana State FFA Convention: Every year over 1,000 FFA members attend the State FFA Convention in one of three cities in Montana cities: Billings, Bozeman, and Great Falls. This is the largest youth organization event in the state of Montana. The MSU Agricultural Education and Agricultural Operations Technology division and their student organizations Collegiate FFA and the AOT club, sponsor all of the state FFA competitions in early April of every year.

Departmental Base Budget Overview

Department **Land Resources & Environmental Science** Executive **Provost**

Index **412700** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
366,653	452,139	205,631	281,220	292,406	397,411	420,360	425,622	428,933	549,833	546,608	49.08%

The Land Resources and Environmental Sciences (LRES) Department was created through restructuring during 1998; thus 1999 marks the first true year for our base budgets. 2006 figures include the addition of 4 faculty and multiple staff from the former Department of Entomology. The LRES mission is "the generation and dissemination of objective, scientifically-based knowledge about land resources through integrated multi-disciplinary approaches to understanding and managing landscapes". LRES is a core component of the MSU land grant mission, providing excellent research, on- and off-campus instruction, Extension, and outreach. Our 20 tenurable faculty members provide scholarship, leadership, and professional service in integrated agricultural, biological, and physical sciences of high relevance to Montana and the nation. LRES faculty are highly productive in securing extramural research funds from a variety of sources, mentor about 40 MS and 20 PhD graduate students, and are nationally and internationally recognized in their disciplines. Research and other sponsored programs expenditures in FY06 were $8,834,954, exceeded by only one other MSU academic unit. LRES research programs integrate and bridge scales and disciplines from microbial to landscape. Faculty and staff actively collaborate with other departments, colleges, research centers, institutions, and agencies. For example, we are working to substantially enhance the quality and coherence of ecology and environmental sciences programs at MSU by working with the Ecology Department in the College of Letters and Sciences (CLS) and other entities. Faculty consistently earn very good to excellent instructional reviews from our undergraduate majors and other supported majors from across campus. Of the 24 undergraduate courses offered through LRES (excluding 270, 289/290, 489/490, 470, 476, etc.), 22 are taught by faculty and 2 by instructors; all 16 graduate courses are taught by tenurable faculty. About 70% of our courses provide supplementary hands-on laboratory/field experiences, and the department critically requires additional GTA, instructional equipment, software license, and operational resources to maintain and improve our services to MSU students; much of this shortfall is chronically subsidized by research equipment, personnel, and dollars. Our faculty were early adopters of the undergraduate research model, and continue as strong participants. LRES research and undergraduate and graduate instructional programs have grown continually and substantially, and this growth potential is expected to continue. Nonresident student enrollment is currently 34% for undergraduate majors, and 33% for graduate students, somewhat lower than is typical for us but right on the MSU 5-year goal. These proportions could be further increased through targeted recruiting and by adding innovative quality components such as a summer field camp to our curricula. Continued ability to grow in these areas will be constrained by new faculty hires, instructional support, and instructional FTE. Of 17 teaching faculty, 13 have split MAES:College funding, with departmental mean of 0.39 instructional component per teaching faculty. Of these, two senior faculty joined LRES from L&S with substantial instructional FTE (21% of the LRES total) but with negotiated very small teaching loads. Because of limited teaching resources, we focus on upper division undergraduate and graduate instruction. While this effectively serves our own and related majors, lack of instructional FTE to provide lower-division service courses strongly impacts total student credit hours and related indices.

LRES is a truly comprehensive, diverse, highly relevant, and extremely productive department that is central to MSU's current and future role as THE land grant university situated in the Greater Yellowstone Ecosystem. We are uniquely positioned to take advantage of growing student interests, and rapidly expanding research and employment opportunities in the environmental sciences.

Index **412800** Program **01**

Base Budgets:

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-Year % Change
71,275	82,021	83,458	114,688	115,484	117,951	126,551	161,209	161,812	166,740	172,532	142.07%

The primary mission of Veterinary Molecular Biology (VMB) is to perform basic and applied research to achieve a better understanding of livestock, wildlife, and human health and disease for the ultimate benefit of Montana, the Nation, and society in general. VMB fulfills this mission through instruction, research, and service, as outlined below.

Faculty members teach 20 different classes representing 44 class credit hours per year (not including 470, 476, 489/490, 500, 570, 589, and 690 credit hours). Faculty members contribute to the undergraduate Biotechnology degree by teaching most of the upper-division courses in the Animal Option. VMB also offers M.S. and Ph.D. degrees. VMB has a total teaching FTE of 1.74, and faculty average 30 credits taught per FTE, excluding hours spent directing graduate and undergraduate students in research. Faculty members also take an active role in advising undergraduate and graduate students.

VMB is responsible for advising students in the pre-veterinary option (130-150 students annually) and students enrolled in the Biotechnology degree (30-40 annually). Faculty members also advise graduate students and serve on numerous thesis committees. VMB has developed one of the premier infectious disease research programs in the Northwest, as demonstrated by the success of our faculty in competing nationally for extramural grant funds and publishing high-impact papers. Researchers in VMB currently address important infectious disease issues relevant to all animals. Indicative of the success of the research effort, faculty increased research grant and contract expenditures to approximately $11 million in FY2006. In addition, faculty members publish in high quality journals and are invited to national and international locations to present their research findings.

VMB faculty members serve on numerous committees at all levels, including several major university committees such as the Institutional Animal Care and Use, Human Subjects, Biosafety, and Radiation Safety Committees, and the MSU Graduate Council. Faculty members are also involved in numerous grant and manuscript review panels and serve on MAES project reviews.