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***UNIVERSITY OF WISCONSIN SYSTEM***

***2002 RESEARCH REPORT***

## UNIVERSITY OF WISCONSIN SYSTEM 2002 RESEARCH REPORT

### I. OVERVIEW

As shown in Table 1, the University of Wisconsin System's 2001-02 GPR research budget was **\$72 million**. The majority of the research funding (**82.2%**) was in the UW-Madison budget.

**TABLE 1**  
**RESEARCH FUNDING BY INSTITUTION**  
**2001-02 FISCAL YEAR**

<u>INSTITUTION</u>	<u>FUNDING</u>	<u>PERCENT</u>
Madison	\$ 59,454,146	82.2%
Milwaukee	10,614,038	14.7%
Comprehensives and Colleges	1,188,834	1.6%
Systemwide	1,066,916	1.5%
Extension		
Totals	\$ 72,323,934	100.0%

### II. UW-MADISON RESEARCH

#### A. Background

UW-Madison's 2001-02 GPR research budget was \$59.5 million. Some of the key facts about the research budget include:

- \$40.7 million was allocated to salaries and wages, and \$15.7 million was allocated to fringe benefits.
- The salary and wage budget provided funding for 437.38 unclassified and 315.43 classified FTE research positions.
- The budget was divided among three funds: general program operations, industrial and economic development, and distinguished professorships.
- The general program operations fund accounted for 98% of the total GPR research budget.
- Five schools and colleges accounted for approximately 85% of the general program operations GPR research budget: the Colleges of Agricultural and Life Sciences, Engineering, and Letters and Science, and the Graduate and Medical Schools. The budget for the College of Agricultural and Life Sciences alone was almost 50% of the general program operations research budget.

## B. Use of Funds

The GPR research funding functions as an investment in UW-Madison's research enterprise. *It provides the core support and basic infrastructure that are required for the continued operation of sponsored research programs.* In a typical department, GPR research funds support the salaries of classified clerical and fiscal staff responsible for payroll processing and purchasing related to external grants, typing grant applications and correspondence related to grant activities, etc. Typical biological and physical science departments and campus-wide research support centers also budget GPR research funds for classified and unclassified technical support personnel, such as laboratory technicians, lab animal care staff, and instrumentation technicians. These positions form a human resource infrastructure that provided general support to sponsored research programs. Responsibilities of the positions are not limited to, or associated with, particular research grants or projects. Instead, they provide broad support to the total sponsored research program. Continuity of funding for these positions is a fundamental requirement. A department cannot, for example, hire and terminate a payroll benefits specialist whenever it begins and concludes a sponsored research project. The GPR research budget ensures continuity of funding.

The budget was also invested in partial salary support for faculty members. GPR research funds are budgeted for faculty salaries for a variety of purposes, including:

- match money for federal grants that require institutional contributions,
- supplements to existing sponsored research activities,
- support for a faculty member to compete for extramural funds, or
- "bridge" funds which support a faculty member's research efforts for an interim period when extramural funding has expired.

In 2001-02, the return on this investment in support staff and faculty salaries was \$561.2 million in extramural grants and contract awards.

## C. Relationship of Research Funding and Research Projects

With the exception of legislated research projects and projects funded through the Faculty Research Committee, the GPR research budget is not allocated on a project basis or for narrowly defined research purposes. The support staff discussed above are rarely associated with specific research efforts or projects. Therefore, they are not budgeted in that manner. At any time, the research components of a particular faculty member's salary might be associated with multiple research projects (some federally and some privately funded) with different time frames and purposes. In these multiple projects, the salary serves different functions (e.g. as a required match in some, as a supplement in others, etc.). Alternatively, the research component of a faculty member's salary might

not be associated with any specific research projects; the faculty member might be writing one or multiple grant proposals. Given these complexities, GPR research funds for faculty salaries, like support staff salaries, are not budgeted for specific projects or narrowly defined research purposes.

#### D. Reductions and Reallocations

UW-Madison has absorbed significant reductions and made significant reallocations of its GPR research budget over the past 29 years. Since 1972-73, \$12.3 million of GPR funds has been cut by the state or reallocated to other programs (e.g. instruction, academic support). The reallocation resulted from three categories of funding shifts:

- institutional reallocations to meet institutional priorities,
- internal school and college reallocations to meet school and college priorities, and
- program and activity reclassifications.

In addition, there have been significant reallocations that did not affect the total GPR research budget. Existing GPR research funds have been shifted between school and colleges, and departments. Although there have been large individual reallocations, most reallocations are relatively small, take the form of vacant position transfers or redefinitions, and are conducted at the school or college level. *The position approval process is the primary tool available to school and college administrators for reallocating the GPR research budget.*

Appendix 1 provides historical analysis of the UW-Madison research budget. Appendix 2 describes the research budget review process of the largest UW-Madison schools and colleges. Appendix 4 describes legislated UW-Madison research projects.

### III. UW-MILWAUKEE RESEARCH

UW-Milwaukee's total 2000-01 GPR funded research budget was \$10.6 million. The specific use of more than 75% of this funding is reviewed on an annual basis. These funds are prioritized and assigned in several different ways.

- The Graduate School Research Committee awards modest amounts of funding, primarily earmarked for junior faculty, to develop new research programs.
- The Graduate School Office of Research Services and Administration provides matching funds on research grants to satisfy funding agency expectations, primarily in the form of required cost sharing on major equipment grants.
- The Graduate School research centers, laboratories, institutes, and offices fund continuing research projects and review the research of faculty and staff scientists.

- The College of Engineering and Applied Science awards matching funding on grants to senior faculty as well as seed money and release time from teaching to junior faculty to initiate research programs and projects.
- The College of Letters and Science assigns research funding based upon the research activity and extramural funding generated by faculty; this often serves as a match on grants.

The remaining 25% of the GPR research funding is committed on a permanent basis. These commitments are primarily used to support the research infrastructure. This total amount includes funding assigned to the Graduate School Office of Research Services and Administration and funding assigned to the various research support offices of the schools/colleges.

Table 3 in Appendix 1 provides a breakdown by school/college of GPR funded research expenditures for 1981-82, 1991-92, and 2001-02.

#### **IV. UW COMPREHENSIVE INSTITUTIONS AND UW COLLEGES RESEARCH**

Although nearly 97% of the UW System's GPR research funding is budgeted at UW-Madison and UW-Milwaukee, faculty at the comprehensive institutions also need to engage in research in order to remain current in their fields. The comprehensive institutions have established internally funded programs designed to encourage and support faculty and academic staff members to engage in research and other scholarly and creative activities. Funds are available for researchers, writers, artists, and performers who need project support for gathering data, accessing primary materials, equipment, services, supplies, student research collaboration, and clerical assistance. Funding awards are relatively small (\$100 to \$5,000).

The UW Colleges have established department-based funding for supporting professional development activities for all faculty and instructional academic staff. Funds are available for individual research, department-wide research, and attending professional conferences.

Funding awards range from \$100 to \$800.

#### **V. SYSTEMWIDE RESEARCH**

Funding for three UW System research programs is held in systemwide accounts. These programs include:

- **APPLIED RESEARCH**, which provides funding for UW System institutions for research addressing specific problems faced by Wisconsin industries. Details regarding this program are provided in a separate annual report to the State.

- **DISTINGUISHED PROFESSORS**, which provides partial support for 20 Distinguished Professor positions in the University of Wisconsin System. The GPR funding is matched by an equal or greater match from businesses and/or other non-GPR sources. At the end of the 1999-00 fiscal year, this funding supported ten professors at UW-Madison, three at UW-Milwaukee, Two at UW-Stevens Point, and one at La Crosse. An annual fiscal report is provided for this program.

- **SOLID WASTE EXPERIMENT CENTERS, NONCOMPOSTIBLE LANDFILL AND SLUDGE**, which provides funding to UW system institutions for research into the alternative methods for the disposal of solid waste. Details regarding these programs are provided in a separate annual report to the State.

**APPENDIX 1****HISTORICAL ANALYSIS OF RESEARCH BUDGETS AT  
UW-MADISON AND UW-MILWAUKEE****I. UW-MADISON****A. Background**

UW-Madison's GPR research budget, excluding fringe benefits, increased by \$32.0 million between 1972-73 and 2001-02. The 1972-73 GPR budget reflects the State's "general purpose" base investment in UW-Madison's research enterprise at the time of merger. This base served the same purposes as the GPR research base does today: it provided a stable human resource infrastructure, opportunities for faculty to compete for extramural funds, and matching funds for gifts, grants and contracts. The \$32.0 million increase is a function of changes in the following four general categories of funding. (All amounts exclude fringe benefits.)

**1. Compensation Increases.**

This category includes all salary and wage related allocations, such as faculty, academic, and classified pay plans; catch-up; student wage increases; length of service pay; performance awards; quality reinvestment; pay equity, etc. Cumulative compensation increases over the period were approximately \$37.7 million.

**2. Specific Research Allocations.**

This category includes all legislated appropriations for specific research purposes, such as the Sea Grant Institute, Biotechnology Center, and Family Farm Institute. A list of these allocations is shown in Appendix 3. Total UW-Madison specific research allocations were approximately \$6.6 million. This amount reflects the sum of the initial allocations for these projects; subsequent pay plan increases related to the projects are included in the category above.

**3. General Reductions and Allocations.**

This category includes all general allocations that were not restricted to the research program, excluding compensation increases, such as productivity and base budget reductions, inflation offsets, and turnover savings. General reductions and allocations reduced the research budget by \$4.4 million over the period. The negative impact of this category is due primarily to mandated base budget reductions in 1980-81, 1981-82, 1985-86, 1995-96, 1996-97, and 2001-02.

4. Institutional Reallocations.

This category includes all GPR reallocations made by UW-Madison that resulted in a shift of funds to or from the research program. Net reallocations over the period reduced the GPR research budget by \$7.9 million.

Thus, since 1972-73, UW-Madison's "general purpose" GPR research budget has changed as a result of standard pay plan increases, specific research allocations, required budget cuts, and funds reallocated to other activities. The total GPR research budget increased by \$6.6 million due to legislated appropriations for specific research purposes. Assuming standard pay plans represent the cost-to-continue for the 1972-73 base budget, UW-Madison's current "general purpose" GPR research budget is approximately \$12.3 million lower than the budget that would have developed from the 1972-73 base. This is a minimum estimate because the impact of the reductions and reallocations on subsequent compensation increases has not been taken into consideration.

The extent of UW-Madison's internal reallocations is confirmed by two facts. First, as a percentage of total GPR, GPR budgeted for research was approximately the same in 2001-02 (18.9%) as it was at merger in 1972-73. (Figures represent research GPR taken as a percent of total GPR excluding special purpose appropriations, such as debt service, utilities, etc.) However, approximately \$9.7 million of the current budget consists of those legislated, specific research projects that did not exist in 1972-73. If the \$9.7 million is excluded from current budget amounts, the current research portion becomes 15.8%, or a 3.1 percentage point decline.

Second, the change in research FTE positions funded by GPR also reflects substantial reallocation. In 1973-74 (1972-73 FTE data are not available), 738.01 FTE GPR funded positions were budgeted on research. In 2001-02, 752.81 FTE GPR funded positions are budgeted on research—similar to 1973-74. However, over that period UW-Madison received additional 146.63 FTE positions for legislated, specific research projects. If these positions are removed from the current budget, there has been a net reduction of 131.83 FTE. This reduction represents a minimum because it does not include reallocations of positions required for some legislated projects for which FTE's were not provided.

**B. Reallocations**

The net reduction of \$7.9 million of GPR funded research represents the effects of several types of funding shifts: institutional level reallocations to meet new institutional priorities, internal school and college reallocations to meet new institutional priorities, internal school and college reallocations to meet new school college priorities, and reclassification of existing activities. In the first two cases, funds are removed from an existing function, which is usually terminated, and applied to an alternate function. In the



latter case, a particular function continues to be funded, but it is redefined as another activity such as instruction, academic support, etc. These reclassifications occur because program definitions evolve through time.

In aggregate, internal school and college reallocations account for most of the institution's total reallocations. School and college deans and faculty members have the greatest knowledge concerning their respective disciplinary areas and are in the best position to recognize and act upon changing needs and priorities in their various programs. Typically, such reallocations are relatively small in magnitude (i.e. less than \$100,000), so that the \$7.9 million total is the result of many individual decisions to reallocate funds over the past twenty-nine years. Some examples of UW-Madison's GPR research reallocations are listed below.

#### 1. Institutional Reallocations.

- In 1995-96, UW-Madison reallocated \$118,000 to support and enhance the research program in the School of Pharmacy.
- From 1992-93 and 1994-95, UW-Madison reallocated over \$1.6 million of GPR research funds as part of the institution's Quality Reinvestment Plan. The plan involved examination of all of the institution's programs and a redirection of funds to meet unfunded priority needs.
- In 1988-89, \$113,000 was reallocated from research to support development and implementation of automated registration.
- In an effort to strengthen UW-Madison's public service mission, the institution established the Division of University Outreach in 1984-85. The new division was partially funded through a \$100,000 reallocation from the research budget.

#### 2. Internal School and College Reallocations.

- In 1996-97, the School of Veterinary Medicine reduced its research budget by \$90,000 to support greater faculty effort in the area of public service.
- In 1994-95, the College of Engineering reallocated approximately \$176,000 from research to instruction to support graduate education programs.
- In 1976-77, the School of Family Resources and Consumer Sciences shifted \$11,000 in faculty salaries from research to instruction after a faculty member retired.
- To meet instructional program requirements, \$78,000 for a vacant position in the Medical School was reallocated from research to instruction in 1980-81.

- To encourage retention of a faculty member in 1984-85, the College of Engineering provided a research opportunity at the Engineering Experiment Station. This effort required the college to reallocate \$10,000 to the research budget.
- In 1987-88, the College of Letters and Science conducted a \$567,000 reallocation from research to instruction to meet the expenses of operating a quality instructional program. At that time, competitive starting salaries for faculty in such areas as Computer Science had increased significantly beyond the growth rate in the college's instructional budget. The college also faced a high priority need for microcomputers and other technical equipment to adequately meet the needs of students.

### 3. Reclassification

- In 2000-01, the Law School reclassified approximately \$142,000 of research activity to student services to meet appropriate program definitions.
- In 1999-00, the College of Engineering reclassified staff and computing resources, which support research from academic support to research, resulting in a \$100,000 increase in the research budget.
- In 1995-96, approximately \$227,000 was reclassified from research to academic support as the UW Press budget was realigned to reflect appropriate activity code definitions.
- In 1993-94, approximately \$144,000 was reclassified from research to physical plant as the Biological Safety Office was transferred from the Graduate School to the Division of Facilities Planning and Management.
- In 1985-86, Earthwatch and Public Information Programs in the Institute for Environmental Studies were reclassified from research to public service, causing a \$20,000 decrease in the research budget.
- The Guidance Institute for Talented Students in the School of Education was reclassified as a public service activity in 1978-79; \$61,000 was shifted from research to public service.
- In 1982-83, \$405,000 was reclassified from research to experimental farms to appropriately reflect the magnitude of farm operations in the College of Agricultural and Life Sciences.
- In 1989-90, administration of the extramural support program in the Medical School was reclassified from academic support to research in accordance with appropriate activity definitions. The reclassification produced an \$84,000 increase in the research budget.

- In 1991-92, \$160,000 for undergraduate research fellowships was reclassified from instruction to research.

These examples illustrate the types of reallocations and funding shifts that affect the aggregate GPR research budget at the UW-Madison. There are, however, other reallocations that do not necessarily impact UW-Madison's aggregate GPR research budget. These reallocations take the form of GPR research funding shifts within and among schools and colleges.

Table 2 shows the portion of the total GPR budget accounted for by each school, college, and administrative unit in 1981-82, 1991-92, and 2001-02. To isolate the effects of budget shifts between colleges, all legislated specific GPR research allocations have been excluded. The table indicates, for example, that in 1981-82, the Graduate School, the Medical School, and the College of Engineering accounted for approximately 20%, 8% and 5% of the GPR research budget respectively. By 2001-02, these units accounted for approximately 14%, 14%, and 3% of the GPR research budget respectively. Each percentage point increase or decrease was equivalent to approximately \$300,000 in base GPR funding. Part of these shifts is attributable to formal reallocations between divisions, and part is attributable to greater incremental funding being directed to, for example, the Medical School. Other units also show significant change.

TABLE 2  
UNIVERSITY OF WISCONSIN-MADISON  
COMPARISON OF GPR RESEARCH BUDGETS  
1981-82, 1991-92, AND 2001-02

DIVISION	1981-82 <u>Funding</u>	Percent	1991-92 <u>Funding</u>	Percent	2001-02 <u>Funding</u>	Percent
Business Services	\$227,364	1.2	\$413,875	1.7	\$0	0.0
Division of Information Technology	\$0	0.0	\$76,000	0.3	\$153,000	0.4
College of Agricultural and Life Sciences	\$10,254,450	54.3	\$14,164,220	59.2	\$18,716,377	54.9
International Studies	\$0	0.0	\$0	0.0	\$178,340	0.5
School of Education	\$224,363	1.2	\$194,769	0.8	\$126,411	0.4
College of Engineering	\$908,932	4.8	\$561,867	2.3	\$1,119,346	3.3
School of Human Ecology	\$36,405	0.2	\$38,953	0.2	\$41,339	0.1
Graduate School	\$3,737,545	19.8	\$4,107,222	17.2	\$4,825,075	14.2
Institute for Environmental Studies	\$79,289	0.4	\$47,760	0.2	\$123,205	0.4
Law School	\$147,458	0.8	\$272,656	1.1	\$372,008	1.1
College of Letters and Science	\$1,486,889	7.9	\$1,122,519	4.7	\$1,623,879	4.8
Medical School	\$1,541,276	8.2	\$2,465,524	10.3	\$4,712,671	13.8
School of Nursing	\$0	0.0	\$29,261	0.1	\$89,007	0.3
Psychiatric Institute	\$176,034	0.9	\$240,654	1.0	\$345,674	1.0
School of Pharmacy	\$52,066	0.3	\$197,063	0.8	\$286,460	0.8
School of Veterinary Medicine	\$0	0.0	\$0	0.0	\$1,169,117	3.4
Campus-wide (Undergrad Res. Fellowships)	\$0	0.0	\$0	0.0	\$200,000	0.6
Total	\$18,872,071	100.0	\$23,932,343	100.0	\$34,081,909	100.0

Note: Excludes Fringe Benefits and Legislated Research Projects.

UW-MILWAUKEE

Table 3 shows the portion of the total GPR budget accounted for by each UW-Milwaukee school, college, and administrative unit in 1981-82, 1991-92, and 2001-02. The largest research budgets are found in the Graduate School, the College of Letters and Science, the College of Engineering and Applied Science, and the Milwaukee Idea.

TABLE 3  
UNIVERSITY OF WISCONSIN-MILWAUKEE  
COMPARISON OF GPR RESEARCH BUDGETS  
1981-82, 1991-92, AND 2001-02

DIVISION	1981-82*		1991-92*		2001-02	
	Funding	Percent	Funding	Percent	Funding	Percent
General Education Administration	\$0	0.0	\$0	0.0	\$3,000	0.0
Administrative Affairs	\$7,905	0.2	\$45,647	0.7	\$18,248	0.2
General	\$18,837	0.5	\$796	0.0	\$0	0.0
Academic Affairs	\$0	0.0	\$0	0.0	\$716,932	6.7
Health Sciences	\$0	0.0	\$26,260	0.4	\$100,965	0.9
Architecture and Urban Planning	\$14,171	0.4	\$48,721	0.7	\$146,186	1.4
Business Administration	\$68,216	1.8	\$418,305	6.0	\$216,768	2.0
Education	\$25,432	0.7	\$145,871	2.1	\$151,875	1.4
Engineering and Applied Science	\$253,936	6.8	\$534,380	7.7	\$890,466	8.3
Arts	\$8,354	0.2	\$0	0.0	\$0	0.0
Graduate School	\$2,156,399	57.7	\$2,805,879	40.4	\$3,536,236	33.0
Information and Media Technology	\$31,831	0.9	\$273,727	3.9	\$278,456	2.6
Letters and Science	\$544,529	14.6	\$1,108,493	16.0	\$1,447,242	13.5
Nursing	\$10,926	0.3	\$140,395	2.0	\$227,532	2.1
Social Welfare	\$25,959	0.7	\$55,938	0.8	\$177,521	1.7
Academic Support	\$75,000	2.0	\$0	0.0	\$0	0.0
Unit Wide	\$493,232	13.2	\$1,344,220	19.3	\$2,702,611	26.2
Total	\$3,734,727	100.0	\$6,948,632	100.0	\$10,614,038	100.0

\* Includes Federal Indirect Cost Reimbursement amounts of \$238,800 in 1981-82 and \$338,800 in 1991-92.

## APPENDIX 2

## UW-MADISON RESEARCH BUDGET REVIEW PROCESS

## I. BACKGROUND

Five UW-Madison schools and colleges accounted approximately 85% of the 2001-02 general program operations GPR research budget: Colleges of Agricultural and Life Sciences, Engineering, and Letters and Science, and the Graduate and Medical Schools. Historically, these units have effectively accounted for UW-Madison's total GPR research budget, excluding any legislated specific research allocations. Table 2, which excludes such allocations, shows that these units accounted for over 90% of the research budget in 2001-02.

## II. COLLEGE OF AGRICULTURAL AND LIFE SCIENCES

## A. Background

The College of Agricultural and Life Sciences (CALs) has the single largest school or college GPR research budget at the UW-Madison. Its 2001-02 budget was \$20.4 million, which was approximately 50% of the UW-Madison general program operations GPR research budget and over twice as large as the next largest school or college GPR research budget. CALs accounted for 322 of the 753 FTE total research positions funded by GPR.

The relative size of CALs GPR research budget illustrates its status as a "special case" among UW-Madison schools and colleges. To a great extent, the anomalous size of the research budget is the result of certain federal and state policies dating back to the 1800s. Briefly, in the nineteenth century, the Hatch-Adams Act created the federal land grant system, which established land grant educational institutions and agricultural experiment stations in each state. In Wisconsin, UW-Madison was established as the land grant institution, and the state agricultural experiment stations were administered by the institution's agricultural college. Until the 1940s, the federal government sponsored research at experiment stations through fixed allocations of funds under the Hatch program. The State of Wisconsin also funded agricultural research at the experiment stations through the agricultural college. When, in the 1940s, the modern era of accelerated research and development spending began, the Hatch program was modified to promote greater agricultural research activity. The federal government modified the program to distribute funds on a formula basis, which required and gave weight to state contributions to agricultural research. To qualify for these formula funds, states budgeted greater amounts of research funds through their land grant agricultural colleges and experiment stations. Hatch funds are still distributed on this formula basis.

As a consequence of this infusion of state research funds, state funded research budgets at most land grant agricultural colleges are relatively large when compared with other state funded research programs. Some land grant agricultural colleges separately budget their

state contribution to agricultural research, as does UW-Madison. Others separately budget a portion and fund the remainder through a fixed allocation of instructional funds to departmental research. In any case, the relative size of the CALS research budget when compared with other UW-Madison schools and colleges is similar to relative budget levels at other land grant institutions.

### **B. Use of Funds**

The CALS GPR research budget is divided among 30 academic departments and research centers. It is well distributed across these departments. The budget provides funding for 228.67 unclassified and 93.08 classified FTE positions. CALS conducts several legislated research projects, including the Family Farm and Cheese Research Institutes, Nonpoint Source Pollution Control, and Sustainable Agriculture. The intent and budget of the legislation authorizing these projects are appropriately observed by the college. The budget for these projects is approximately \$1.7 million, excluding fringe benefits.

The primary purpose of the CALS GPR research budget is to provide core support and basic infrastructure for the extramurally funded research program. The budget, which is almost exclusively allocated for salaries, is essentially divided between faculty and support staff. Support staff positions, both classified and unclassified, include titles such as laboratory managers, laboratory technicians, and fiscal and clerical support staff. Most of these positions provide general research support to a department and are allocated based on program need (e.g. animal science departments require animal caretakers). Continuity of funding for such general support positions is a fundamental requirement of departmental research programs; GPR research funds guarantee this continuity. In contrast, support positions directly involved in discrete research projects are funded by gifts, grants, or contracts.

### **C. Allocation/Reallocation of Funds**

The allocation of the GPR budget across departments and disciplinary areas is designed to shape and conform to the long-range research agenda established by CALS administrators and faculty. Their ability to direct research programs in the short term is, however, limited to discretionary funding authority in certain non-GPR funding categories, such as Hatch formula funding. For example, if CALS determines that agricultural systems research is of high priority, it can designate a certain portion of Hatch funds for that use and specifically invite proposals in that area. Although all research proposals made to Hatch and other federal formula funds are peer-reviewed, there are normally many more projects recommended for funding by the peer-review process than there are resources to fund. Thus, there is some flexibility to select peer-review approved projects that are of highest priority and consistent with CALS research objectives.

In the longer term, CALS is able to shape the research direction of the college by adjusting the GPR research budget. By approving or not approving open faculty and academic staff positions, CALS administrators are able to exercise their greatest control

of CALS long-range research direction. When a position opens in the college, administrators evaluate with departmental faculty and academic staff the type of position that should be defined to replace the departing staff member. Eventually, the department chair and executive committee define a position that is then forwarded to CALS administration and considered for funding along with other open positions in the college. Through these critical decisions to fill or not fill certain defined positions, the long-range direction of CALS research is focused.

Thus, the CALS GPR research budget process is primarily determined by its long-range research agenda. The agenda is implemented on an incremental basis, as unclassified positions are vacated and made available for reallocation or redefinition. Position approval is the primary tool available to CALS administration for controlling the future direction of CALS research. Because faculty positions are tenure track positions, these decisions have implications far into the future, particularly when young faculty members are being hired.

#### **D. Determining the Research Agenda**

There are many determinants of the CALS long-range research agenda. The most important determinant is the judgment of knowledgeable scientists about areas that constitute promising and feasible research. The evolution of scientific knowledge is the principal determinant of the research agenda. Examples of other determinants of the CALS research agenda include the following.

- The U.S. Department of Agriculture's (USDA) User Advisory Board consists of agricultural, agribusiness, and state government representatives. The board helps define emphasis areas and future funding directions for USDA research programs, which in turn influences CALS research programs.
- Agricultural experiment station directors, operating through such organizations as the Experiment Station Committee on Organization and Policy and the National Association of State Universities and Land Grant Colleges, meet frequently to assess national agricultural and natural resource research needs. The research agenda developed through their deliberations influences the CALS research agenda.
- One of the considerable strengths of a land grant institution is that it fosters close relationships between research and extension/outreach faculty. Such close relationships exist in CALS programs. County extension staff members, because of their frequent contact with farmers, agribusiness, and other research users, have a well-informed sense of the research needs that exist across the state in agricultural, natural resources, and community development.
- County staff is also influenced by elected county officials who serve on agricultural and extension committees of county boards. Structures and programs exist within extension to ensure that local concerns are communicated to campus researchers.



- The Wisconsin Agricultural Experiment Station cooperates with the USDA Cooperative State Research Service in reviewing each CALS department every five years. Review committees, composed largely of professionals from other land grant institutions; offer advice on the research direction of departments.
- Approximately half of the CALS departments have one or more advisory committees, which provide advice and guidance on research efforts. Advisory board members are drawn from all of a department's user groups, including employers, former students, county extension staff, state agency representatives, farmers and business leaders.
- Many interdisciplinary, applied research programs have advisory panels of citizens and users who influence the CALS research agenda. Research programs funded through state authorized marketing orders are required to have marketing board oversight of funds used for research programs. These boards work closely with the research staff in defining important research needs and advising on research project funding. Dairy product and market development, potato, cranberry, and fertilizer and lime marketing research efforts are examples of these types of research programs and advisory committees.

### **III. GRADUATE SCHOOL**

#### **A. Use of Funds**

The 2001-02 GPR research budget for the Graduate School was \$7.4 million, which constitutes the second largest school or college research budget at the UW-Madison. The entire budget was used for salaries and wages and provided funding for 58.39 unclassified and 79.82 classified FTE research positions. All of the GPR funded unclassified research positions in the Graduate School are non-faculty positions. The school administers several technical and specialized research centers, which provide support to departments campus-wide and employ a significant number of unclassified scientific and technical support personnel, such as instrumentation technicians and specialists.

#### **B. Allocation/Reallocation of Funds**

The Graduate School's GPR research budget is divided among four general categories or functions: legislated research programs and projects, flexible interdepartmental funds, compliance units and units that provide broad support to departments campus-wide, and interdisciplinary research centers.

##### **1. Legislated Research Programs**

Legislated research programs and projects account for approximately \$2.6 million of the Graduate School's general program operations GPR research budget. The school observes the intent and budget of the legislation authorizing these programs. These

programs include the Biotechnology Center and Transfer Office, Sea Grant Institute, and the Groundwater Research program. (The Graduate School also administers the separate Industrial and Economic Development fund, which is not included in the budget total above.) Approximately 39 FTE research positions were budgeted for these programs.

## 2. Interdepartmental Research Support

Approximately \$1.0 million of the Graduate School's GPR research budget is allocated for general interdepartmental research support. The funds are allocated on a competitive basis by the Faculty Research Committee to support specific research projects or activities. The committee, which is composed of 40 faculty members and includes members from all four divisional affiliations (i.e. Biological Sciences, Humanities, Physical Sciences, and Social Sciences), annually issues a request for proposals, and proposals are evaluated in a peer review process (e.g. humanities faculty members review humanities proposals). Although flexible in principle, the funds are essentially intended to function as an investment, which enables faculty members to remain current in their fields, or which provides start-up research opportunities for young faculty members. In the context of that intent, awards are made for a variety of specific purposes: as exclusive funding for a particular research project, as a supplement to a successful extramural award, or as leverage funds which finance a portion of a faculty member's time while the faculty member completes a research grant proposal. This fund was created in the 1950's and has not been subject to substantial reallocation over time. It has increased or decreased from year to year primarily as a result of standard pay plan increase, mandated budget cuts, etc.

## 3. Research Compliance and General Research Support

A substantial portion of the Graduate School's GPR research budget is allocated to research compliance units and general research support units. The mission of the Graduate School entails management and budget responsibilities for compliance issues associated with federally supported research programs and campus-wide research support facilities and programs. Examples of such units include the Research Animals Resources Center, the Physical Sciences Laboratory, Biotron, and the University Industry Research program. The total GPR research budget for these units is \$2.1 million. GPR budgets for compliance units (\$0.7 million) are based on total research effort at the UW-Madison and work complexities imposed by federal regulations. In general, research support units are expected to charge users for actual costs. Moderate subsidies (\$1.4 million in total) have been allocated to these units in the past and are rotated among units as business levels fluctuate. The subsidies ensure continuity of operation during periods of reduced revenues.

## 4. Interdisciplinary Research Support

Approximately \$1.7 million of the GPR research budget is allocated primarily to classified salary support for Graduate School Interdisciplinary research units. These units include the Waisman Center, Synchrotron Radiation Center, Aquatic Sciences, Space

Science and Engineering Center, Molecular Biology, Institute for Molecular Virology, and the Institute on Aging and Adult Life. The Graduate School engages in an ongoing evaluation of the units to determine whether reallocations of GPR funds are required. The school bases unit budgets on their success in competing for extramural grants and contracts, using rolling three to five year averages of gift and contract expenditures and earned overhead to determine and reallocate GPR budgets.

#### **IV. MEDICAL SCHOOL**

##### **A. Use of Funds**

The 2001-02 GPR research budget in the Medical School was \$5.0 million and was used entirely for salaries and wages. The Medical School's budget provided funding for 52.68 unclassified and 38.07 classified FTE research positions. The GPR research budget is allocated among 20 Medical School departments.

The primary purpose of the Medical School's GPR research budget is to provide the basic infrastructure needed to conduct extramurally sponsored research. This infrastructure investment resulted in \$162.2 of extramural research grants and contracts in 2001-02. The Medical School generates more extramural research funding than any other school or college at the UW-Madison.

##### **B. Allocation/Reallocation of Funds**

###### **1. Extramural Support Office**

In allocating the GPR research budget, the Medical School's highest priority is to provide funds to its Extramural Support Office. In 2001-02, approximately \$103,000 of GPR research funds was budgeted for partial support of two academic and two classified staff members in this office. The office reviews extramural support applications before formal submission to funding agencies. Applications are reviewed for consistency with institutional and Medical School policies. Budget calculations, rate selection, personnel identification, and contract terms are also reviewed.

###### **2. Human Subjects Review Committee**

The second priority for the Medical School's GPR research budget is the Human Subjects Review Committee. Federal guidelines require the establishment of such a committee to ensure that the rights and well-being of human subjects in medical research are protected. The committee is primarily funded by UW-Madison's Center for Health Sciences—Administration unit. However, to help reduce the review backlog of the committee, the Medical School annually reallocates GPR research funds to provided supplemental support.

### 3. Legislated Research Projects

The Medical School conducts three legislated research projects: the Cancer Care Program, the Arthritis Consultation Center, and Mechanical Heart Research (excludes general research support provided by the legislature in the 1973-74 "Advanced Programs in the Medical School" DIN). The school appropriately follows the intent and budget of the legislation authorizing these projects. The combined budget for the projects in 2001-02 was approximately \$0.3 million.

The vast majority of the Medical School's GPR research budget is allocated for the infrastructure support of research programs in academic departments. In a typical Medical School department, GPR research funds are allocated for the following: a small portion of the department chair's salary for administrative time dedicated to research programs; a maximum of 50% of the department administrator's salary for time dedicated to research programs; salary for 1 FTE fiscal clerk for processing payroll and purchasing related to research and reviewing budget status reports for principal investigators; salary for 1 FTE secretarial or clerical position for typing grant proposals, manuscripts, research results, and correspondence related to grant activities; and a maximum of 25% of the salaries for as many as six faculty members, either to supplement (and/or provide match) existing extramural funding or to provide "bridge" funds while a faculty member competes for sponsored research.

#### C. Reallocation Flexibility

Given the volume of sponsored research generated by the Medical School, the school's \$5.0 million GPR research budget can support only a minimal level of departmental research infrastructure requirements. Consequently, the school does not have available a significant amount of flexible funds for potential reallocation. [Delete the last line]

As is generally the case throughout the institution, the school's principal source of GPR research funds for reallocation consists of vacated positions. The school requires that position FTEs and funding revert to the Dean upon vacancy for retirement, resignation, or termination. Vacant positions and associated funding are reallocated after reviewing position and funding requests from all departments. This process has produced net reallocations among programs (research, instruction, etc.) and departments. However, scarcity of resources across departments, and within programs, has resulted in a reallocation pattern that heavily favors departments that initially produced a vacant position and program definitions for new positions that resemble those that have been vacated.

## V. COLLEGE OF LETTERS AND SCIENCE

### A. Use of Funds

The 2001-02 GPR research budget for the College of Letters and Science was \$1.9 million. This amount included \$0.3 million budgeted for the LaFollette Institute for Public Affairs, which was authorized by specific legislation. The budget provided funding for 61.27 classified FTE research positions in Letters and Science departments. Departmental GPR budgets for classified research salaries ranged from over \$318,000 in the Chemistry Department to \$1,500 in the Humanities Research Institute. Six departments accounted for over \$1.1 million of the classified salary total: Chemistry, Physics, Center for Limnology, Zoology, Psychology, and Botany.

### B. Allocation/Reallocation of Funds

The budget provides core program and administrative support for departmental research activities through partial funding of such positions as financial specialists, pay and benefits specialists, fiscal clerks, and program assistants. These positions are funded in the recognition of the added administrative requirements generated by extramural gift and contract programs. GPR research budgets for departments in the biological and physical sciences tend to be larger than budgets for other departments for two reasons: (1) biological and physical science departments generate a significantly larger volume of extramural research grants and contracts and, therefore, have greater administrative support needs; and (2) these departments require specialized technical support from classified staff, whereas other departments do not. For example, research programs in the departments of Chemistry and Physics require the technical support of such positions as instrument makers, electronics technicians, and mechanics.

In general, the college maintains the core support from year to year on a relatively constant basis to ensure efficiency and continuity. However, whenever a position vacancy occurs, any research component of the position (as well as other program components) is carefully reviewed by departmental and college administrators. Reallocation of GPR research funds in the College of Letters and Science is conducted primarily through the position approval process.

## VI. COLLEGE OF ENGINEERING

### A. Use of Funds

The 2001-02 GPR research budget for the College of Engineering was \$1.4 million and was allocated entirely for salaries and wages. The budget provided funding for 12.70 unclassified and 12.00 classified FTE research positions. This budget is divided among four general categories of research activity; research proposal development and administration, interdisciplinary and multiple user research facilities support, departmental support staff, and legislated research projects.

### 1. Engineering Experiment Station

The first two categories are budgeted with the College's Engineering Experiment Station, which accounts for approximately one-half of the Engineering GPR research budget. The GPR budget for the Engineering Experiment Station provides funding for the operations of the Office of the Associate Dean for Research and Graduate Programs. This office is responsible for the liaison function between college research faculty and external funding sources, proposal development, and clerical support staff. In addition, the GPR budget for the Engineering Experiment Station supports interdisciplinary and multiple user research facilities. Approximately 7 FTE scientific and technical research staff – instrument innovators, instrumentation technicians, and assistant scientists – in five facilities are supported by GPR funds. Funding for a base level of supplies, equipment maintenance, and other facilities needs is also provided. These facilities include the Materials Science Center, Center for Applied Microelectronics, Graphics and Visualization Laboratory, Water Science and Engineering Laboratory, and the Laboratory for Parallel Computation in Engineering. These centers and laboratories provide basic infrastructure support for the research activities of faculty members from many departments within Engineering and across campus.

### 2. Support Staff

The third general use of the Engineering GPR research budget is to provide partial support of clerical, and administrative and technical support staff in the departments and research program offices throughout the college. All staff members in this capacity are classified. Six departments, excluding the Engineering Experiment Station, receive classified salary support for their research program offices and personnel. Departmental GPR budgets for this purpose range from \$10,000 to \$43,000. GPR funds are allocated for this purpose in recognition of the additional demands that research activities place on departmental support staff.

### 3. Legislated Research Projects

The College of Engineering conducts two GPR funded, legislated research projects: Materials Engineering (Ceramics) and Engineering Quality (Thin Film Deposition and Applications, and Automation and Robotics). The intent and budget of the legislation authorizing these projects are appropriately followed.

## **B. Allocation/Reallocation of Funds**

With the exception of the two legislated research projects, the College of Engineering GPR research budget is limited to providing basic infrastructure support to Engineering research programs. Administrative, program, and clerical support staff responsible for managing and meeting the various demands of the research program, either with departments or across the entire college, are partially funded with GPR. Technical support staff and basic facilities support expenses in several multiple user facilities are

also funded. These functions represent basic, fixed requirements of the Engineering research program and are not subject to significant variance in the short term. As a result, the college does not exhibit substantial reallocation of GPR research funds over short time periods: funds are effectively committed to on-going needs.

However, the College of Engineering does conduct limited reallocation exercises on a continuing basis with any flexible funds that can be identified. As research opportunities become available in emerging technologies, the college makes an effort to commit start-up, matching, or leveraged GPR funds to the new research program areas. Occasionally, some flexible GPR funding becomes available as existing research programs mature to levels of self-sufficiency.

**APPENDIX 3  
UNIVERSITY OF WISCONSIN SYSTEM  
LEGISLATED RESEARCH PROJECTS  
1973-74 THROUGH 2001-02**

**RESEARCH PROJECTS 2001-02 BUDGET**

<b><u>UW-MADISON</u></b>	<b><u>\$10,236,696</u></b>
A. Advanced Programs in the Medical School	\$50,800
B. Agriculture Research Consortium/Cooperative Research	\$290,218
C. Arthritis Consultation Center	\$96,067
D. Biology Faculty Initiative	\$430,000
E. Biotechnology Center/Biotechnology Transfer	\$1,049,968
F. Cancer Care Program	\$62,100
G. Center for Integrated Ag. Systems/Sustainable Ag.	\$347,696
H. Cheese Research Institute	\$292,637
I. Family Farm Institute	\$159,768
J. Geographic Information Systems	\$109,538
K. Groundwater Research	\$270,000
L. LaFollette Institute for Public Affairs	\$242,529
M. Materials Engineering	\$185,000
N. Mechanical Heart Research	\$100,000
O. Nonpoint Source Pollution Control	\$134,987
P. Sea Grant Institute	\$1,252,511
Q. Small Scale Waste Systems	\$234,190
R. School of Veterinary Medicine	\$3,637,989
S. Wisconsin Idea – Engineering Quality	\$94,000
T. Industrial and Economic Development Research Fund	\$884,464
U. Distinguished Professorships	\$312,234

Note: Item T. includes fringe benefit funding

<b><u>UW-Milwaukee</u></b>	<b><u>\$1,170,356</u></b>
A. Grant Matching and Research Committee Awards	\$598,956
B. Great Lakes Water Institute	\$102,800
C. Research in Engineering and Technology	\$54,000
D. Technology Transfer	\$107,600
E. Milwaukee Research Plan	\$220,600
F. Manufacture of Metal Composites	\$86,400

Note: Item A. represents the current 101-4 budget; items B. through F. are actual legislated allocations over period of 1973-74 through 2000-01.

<b><u>SYSTEMWIDE</u></b>	<b><u>\$1,352,805</u></b>
A. Applied Research	\$438,805
B. Distinguished Professors	\$759,100
C. Solid Waste Experiment Centers, Noncompostible Landfill and Sludge	\$154,900

**UNIVERSITY OF WISCONSIN SYSTEM TOTAL \$12,759,857**



**APPENDIX 4  
LEGISLATED RESEARCH PROJECTS**

**I. UW-MADISON**

**A. Advanced Programs in the Medical School**

In 1973-74, the UW-Madison Medical School received funding for research to advance the understanding of medical applications in:

- advanced clinical care of cancer patients;
- rehabilitation of the aged;
- law enforcement pathology; and
- environmental and occupational medicine

This funding was added to the Medical School's GPR research base to support research efforts in the prescribed areas. The funds remain in the Medical School's GPR research budget and provide base support for the Medical School's research program.

**B. Agriculture Research Consortium Cooperative Research**

The UW System's Agriculture and Natural Resources Consortium was established approximately 20 years ago. Its primary purpose is to foster coordination and cooperation in research and extension planning among the agriculture and natural resource programs at UW-Madison, UW-Platteville, UW-River Falls, UW-Stevens Point, and UW-Extension. The consortium promotes excellence in undergraduate and graduate training, and, through these funds, supports applied research for stronger information outreach related to agriculture and natural resources areas.

The funds are administered through the UW-Madison College of Agricultural and Life Sciences. Projects are normally established for a two-year period, subject to renewal.

To maximize the effectiveness of the research funding, consortium members are targeting selected research areas each year. Areas that are currently emphasized include rural health and youth issues, forest landscape diversity, tourism development, and alternative agriculture products and uses of products. Each of these areas has a significant impact on the economic viability of Wisconsin's rural communities. The list of targeted research areas is reviewed periodically to respond to changing and emerging needs in Wisconsin agriculture, forestry, and tourism.

**C. Arthritis Consultation Center**

This project provides base support for the research program in the Arthritis Consultation Center, which is located within the Section for Rheumatic Disease at the UW-Madison Center for Health Sciences. Research efforts focus on improving diagnostic and

therapeutic services to patients suffering from connective tissue diseases. In addition to providing clinical care services and conducting related research, the Center has developed consultative, educational outreach services for physicians, hospitals, and other institutions throughout the State of Wisconsin.

#### **D. Biology Faculty Initiative**

This initiative provided continuing base salary and fringe benefit support (and one-time start up funding) for additional 8 FTE faculty members in the biological science. The new faculty members were placed in a variety of departments, including Genetics, Chemistry, Zoology, and Animal Health and Biomedical Sciences. Research focus of the new faculty members are interdisciplinary efforts in biotechnology and genomics.

#### **E. Biotechnology Center/Biotechnology Transfer**

The mission of the Biotechnology Center is to maximize the benefits of biotechnology to UW-Madison, the UW System, the State of Wisconsin, and the nation by supporting, coordinating, advancing, and disseminating biotechnology and related activities.

The Center operates five service facilities that provide state-of-the-art shared services, equipment, and trained personnel to support campus research and the research needs of Wisconsin biotechnology businesses. The service facilities include Protein/DNA Sequence/Synthesis, Protein Purification, Transgenic Mouse, Hybridoma, and Bioinfomation.

The Biotechnology Center also conducts its own research program. Current research efforts include projects on enzyme engineering, plant biotechnology, and methods development. In addition, the Center has formed multidisciplinary applied research consortia in the areas of biopulping and bioremediation. The Center is forming new consortia in the areas of biomaterials and bioscience.

The Biotechnology Center also disseminates knowledge, information, and technology to state government agencies, businesses, and educational institutions through active technology transfer and public education efforts.

The Biotechnology Transfer Office was established to improve interactions between Wisconsin's biotechnology business community and Wisconsin universities. The office, which is part of the Biotechnology Center, initiated a three-tiered approach to improve interactions with Wisconsin Industry. This approach includes:

- **Wisconsin Busses Newsletter.** The monthly newsletter reports on news and information that is important to Wisconsin's biotechnology community; provides a chronicle of the issues, events, and growth of the biotechnology industry in Wisconsin; and includes regular articles on legislative activities relevant to biotechnology, company profiles, investment and partnership opportunities, research highlights and technology briefs, etc. The newsletter is intended as an informational and marketing tool both inside and outside of Wisconsin. It is sent to biotechnology

companies, state biotechnology agencies, legislators, and researchers. At present, there are approximately 3,000 recipients of the newsletter.

- **Wisconsin Biotechnology Company Database.** The newsletter and direct interactions with companies enable the Biotechnology Transfer Office to compile current and comprehensive information about biotechnology firms in Wisconsin. A database has been created that enables the office to monitor the industry, its needs, and its growth.
- **Interaction with Business and Government Agencies.** The Biotechnology Transfer Office is an important university interface with the Wisconsin biotechnology business community. The Office provides businesses with information, referral to appropriate sources of expertise, and connections and introductions. The Office regularly visits companies to gather information and inform them of available assistance. It also actively supports the efforts of the following agencies/groups: the Governor's Task Force on Science and Technology, its Biotechnology Task Force and several task force subcommittees (marketing, education, databases), the Department of Development, Forward Wisconsin, and Dane County government.

#### **F. Cancer Care Program**

The community cancer care program, which is part of the UW-Madison Center for Health Sciences, provides multiple services to the public and physicians and other health care professionals. Examples include the Cancer Prevention Clinic, Wisconsin Oncology Group, Cancer Nursing Newsletter, and Cancer Information Service. The program conducts cancer research studies on such topics as smoking cessation and epidemiology. Because over 80% of cancer patients are treated in their home communities, a primary goal of the program is to disseminate information statewide about cancer prevention and treatment.

#### **G. Center for Integrated Agricultural Systems/Sustainable Agriculture**

The Center for Integrated Agricultural Systems was established to provide research and extension programs that address issues involving agricultural profitability, environmental quality, and linkages to rural communities. These programs are conducted by the Center's faculty and staff in collaboration with Wisconsin farmers and other Wisconsin citizens, who participate on an advisory council to the Center.

In conducting research projects, the Center assembles interdisciplinary research teams from the faculty of the four UW-System agricultural colleges, and involves Wisconsin farmers. Recent projects include: comparisons of alternative dairy farming methods and cropping systems, alternatives to pesticide use in potato production, verification of using legumes and soil tests to reduce nitrogen use, and an examination of the value of groundwater to central Wisconsin residents. Current activities are focused on developing case studies for research, various research projects related to intensive rotational grazing, and dairy systems and socio-economic implications of biotechnology.

The Center published and distributed a teacher's guide to sustainable agriculture for use in high school agriculture curriculum. The Center also coordinates graduate work and research in sustainable agriculture, and is developing related capstone graduate and undergraduate seminars.

#### **H. Cheese Research Institute**

The research program of the Cheese Research Institute provides the Wisconsin dairy industry with current information on the economics, processes, and techniques of cheese production and distribution. Because the market for cheese products has become increasingly segmented (both in terms of cheese types and consumers), it is important that Wisconsin producers have up-to-date information on production technologies and consumer preferences. Examples of recent research efforts include:

- the development of a "user-friendly" economic engineering model designed for use by cheese plant managers to maximize the profitability of large or small dairy plants;
- a study of the factors affecting physical characteristics of cheeses;
- a study of the correlation between milk quality parameters and the economics of cheese production;
- studies on controlling and enhancing flavor and body characteristics of low-fat and low-sodium cheeses;
- an analysis of consumer preferences regarding surface color of commercially smoked cheddar and swiss cheeses; and
- twelve interrelated projects that focus on flavor control, mechanisms of flavor development, and the measurement of flavor compounds. These projects analyze the effects of selected bacteria and enzymes on control and enhancement of cheese flavor, quality, and intensity.

#### **I. Family Farm Institute**

The Agricultural Technology and Family Farm Institute (ATFFI) was established to conduct research and extension/outreach on the relationships between technology and family farms. The purposes of the ATFFI are to:

- evaluate the effects of new technology, state and federal policies, and other factors on family farm agriculture;
- recommend policies to take advantage of new technologies and mitigate disadvantages;
- assist farmers in meeting the challenges of new technologies; and
- ensure that farmers have access to new technologies.

Examples of current research efforts include:

- a feasibility study of a "marketing agency in common" for milk (and the benefits, costs, and consequences for family dairy farmers);

- construction of a conceptual scheme for inventorying relationships between biotechnology and sustainable agriculture;
- a case study of the legal, policy, and commercialization options associated with innovative scientific approaches to directing biotechnology research to local agro-ecological conditions; and
- a case study of organizational problems and options in small horticultural production and marketing cooperatives.

## **J. Geographic Information Systems**

The State Legislature and the UW-Madison have entered into a collaborative arrangement to produce an integrated system that incorporates geographical information software programs, U.S. Census data, and State Elections Board data. The project was designed to aid the Wisconsin Legislature in the decennial redistricting process and to give researchers and members of the public access to spatial and tabular data from the 1990 census. UW-Madison's Land Information and Computer Graphics Facility are coordinating the project.

The project's long-term goal is to provide access to data from the 1990 census to researchers who need information on geographic factors. This data will include all publicly available data for Wisconsin. Other states will be included, as the geographic data becomes available.

## **K. Groundwater Research**

The Groundwater Research Program was established to conduct research on groundwater problems in the State of Wisconsin. The program provides funding for individual research projects. Input into the selection of individual research projects is provided by the Groundwater Research Advisory Council, which is appointed by the UW-Madison Chancellor to advise the program, and the Groundwater Coordinating Council of the State of Wisconsin, a legislatively mandated State council having broad responsibility for coordinating groundwater-related problems in Wisconsin. Projects recently selected for funding were divided into five general categories of groundwater research:

1. Mathematical modeling of groundwater contaminant transport.
2. Sorption reactions which retard contaminant movement to groundwater.
3. Movement of water and contaminants to and through groundwater.
4. Remediation of contaminated soils and waters.
5. Economic effects of groundwater contamination.

### **L. LaFollette Institute**

The budget amount shown above includes only the portion of the LaFollette Institute's GPR funds that are budgeted for research activities. The LaFollette Institute also has GPR funding for public service and instruction.

In 1991-92, the LaFollette Institute continued policy research and public service programs and also inaugurated new programs. These programs promote the examination of public policies and public institutions, thereby affecting policy-making in the state and the nation. Programs include basic and applied research by individual scholars and teams of scholars and/or practitioners; policy development based on research already completed; and specific and immediate information and seminars, publications, and colloquia designed both to disseminate research results and to stimulate analysis and evaluation.

State GPR funds are used for staff support (faculty release time, graduate research and project assistants, professional and support staff), production and dissemination of publications, and other operating costs.

### **M. Materials Engineering**

The economic future of product oriented companies in consumer and capital goods industries depend heavily on the understanding and use of newly engineered materials. Materials processing in Wisconsin has traditionally emphasized heavy industrial metals. However, in order to remain viable and economically competitive, many Wisconsin industrial concerns will focus on expanding into high technology non-metal applications involving ceramic, semiconductor, and superconductor materials. Ceramics form a versatile class of materials offering an extraordinarily wide range of physical properties, flexible processing, and substitution of inexpensive abundant materials for expensive or rare ones. Wisconsin industry has long been a leader in low technology ceramic application, but advanced applications will provide opportunities for new industrial growth. Prior to receiving this funding, the College of Engineering did not have a faculty member with expertise and interest in this area. The College used the funds to hire two assistant professors that have ceramics expertise. This enabled the College to establish a communication and research link, related to advanced ceramics, with Wisconsin industry, and to obtain federal research funds that are available for ceramics research. This expansion of the materials programs in the College of Engineering will contribute to industrial competitiveness and productivity in Wisconsin.

### **N. Mechanical Heart Research**

The Cardiology Department of UW-Madison's Medical School was allocated funds for the Milwaukee heart project, which involves the building and testing of working prototypes of fully implantable mechanical hearts. The expenditure of these funds requires matching funds from private contributions.

## O. Nonpoint Source Pollution

The nonpoint source pollution project is a continuing program, which provides current best-management information and develops a database for establishing priorities in nonpoint source pollution control. The project also supports demonstration and educational activities. The objectives of the project are to evaluate:

- the effectiveness of agricultural practices in reducing the potential for water pollution from sediment, nutrients, and pesticides;
- the effects of selected soil and crop management practices on runoff and water quality in watersheds, where stream monitoring programs are administered by the U.S. Geological Survey and the Wisconsin Department of Natural Resources; and
- on a whole farm basis, the social and economic factors which govern the adoption of best management practices to reduce nonpoint source pollution.

Current research efforts include:

- the investigation of the effects of irrigation management and tillage on pesticide movement in alluvial sands and investigation of the movement of atrazine and alachlor with field installed lysimeters in alluvial sands;
- the evaluation of the effect of tillage systems for soil erosion control and water quality during establishment of alfalfa;
- the measurement of changes in soil properties as influenced by corn production tillage practices;
- the evaluation of the use of recycled paper for urban and highway soil erosion control;
- the evaluation of soybean production practices which minimize soil erosion and maintain water quality in the non-glaciated region of Wisconsin;
- the measurement of runoff, nutrient and pesticide losses from constructed soils to develop practices for urban lawn construction; and
- the determination of the importance of having grass included in a forage production system to minimize soil erosion and nutrient losses to surface waters.

## P. School of Veterinary Medicine

The School of Veterinary Medicine's GPR research funding is a portion of the School's total start-up and operating budget, which was provided by the State of Wisconsin in order to establish a veterinary medical school at UW-Madison. In the 1978 "Report of the University of Wisconsin System to State Government on Veterinary Medicine," the full costs of operating a veterinary school were identified by four major cost components, including academic programs, teaching hospitals, library, and facility operating costs. Biennial budget requests for the incremental funding of the School of Veterinary Medicine's operating budget further separated the academic program budget into instruction and research activities. The breakdown between instruction and research reflected the anticipated activity of the faculty in teaching and research and related

support costs of those activities. In 1991-92, GPR research funding at the School was apportioned as follows:

- 45% for faculty salaries (individual salaries range from 10% to 40% on research funds);
- 21% for graduate assistant/trainee stipends;
- 16% for research support personnel;
- 15% for shared support resources (animal care, histopathology, electronmicroscopy, etc.); and
- 3% for administration through the Office of Research and Graduate Training.

#### **Q. Sea Grant Institute**

The Sea Grant Institute is dedicated to the wise use and development of Great Lakes and ocean resources. Although the Sea Grant Institute is headquartered on the UW-Madison campus, the Wisconsin Sea Grant Program operates systemwide and is statewide in scope. Research projects conducted by the Institute focus on helping to:

- solve Great Lakes water quality problems,
- improve sport and commercial fisheries,
- promote aquaculture development,
- develop methods to assess potential effects of climate change on the Great Lakes,
- respond to the introduction of nuisance exotic species into the Great Lakes, and
- stimulate the economic development of coastal communities and Great Lakes related industries.

State GPR funding is used to provide the required one-third match for the federal funding the Sea Grant program receives, and to support research and public advisory activities on toxic substances in the Great Lakes and the aquatic environment.

#### **R. Small Scale Waste Systems**

The primary objective of the Small Scale Waste Systems project is to conduct research of low cost sewage systems for problem soils. In particular, the research addresses small wastewater flows that are primarily domestic and non-hazardous. Current research emphasis focuses on two major areas, including the treatment of wastewater by soil and through pretreatment (prior to soil infiltration), and the disposal of wastewaters by infiltration systems of various design. In addition to research, project members provide training and advising to professionals and Wisconsin residents.



### **S. Wisconsin Idea – Engineering Quality**

Funds for this project are being used to strengthen the operation and utilization of College of Engineering facilities and equipment in two areas:

- the fabrication and study of ultra-thin films of one material on the surface of another material; and
- automation and robotics.

The fabrication and study of ultra-thin films is one of the most important and fastest growing areas of materials science. Automation and robotics are becoming increasingly important in manufacturing, medicine, the nuclear industry, and work in space.

Funding for ultra-thin film research is used at the Center for Thin Film Depositions and Applications. The funds provide for the renovation, installation, maintenance, and operation of state-of-the-art research equipment, for which there is a growing demand by College of Engineering materials researchers and Wisconsin industry. Funding for robotics and automation is used for maintenance, operation, and upgrading of robotics and related computer equipment. In both cases, funds also provide for specialists who ensure proper operation of equipment and effective collaboration with industry in the State of Wisconsin.

### **T. Industrial and Economic Development Research Fund**

The Industrial and Economic Development Research Fund (UW-Madison Fund 118) supports faculty research projects that show potential for stimulating economic development in Wisconsin and plan for implementation or transfer of technologies which result from such research projects. Since its creation, the Fund has provided support for the following research topics:

- the transfer of biotechnologically based pest control technologies to the fiber and bioenergy industries;
- the State of Wisconsin's cultural, historical, and environmental contribution towards the successful developing, manufacturing, and marketing of good product design;
- polysaccharide gums from whey permeate for food and industrial use;
- low noise electronics for sensors;
- development of a permeable wall-closed loop humidity control system;
- analysis and evaluation of advanced bicycle frame design and manufacturing – a joint research effort of UW-Madison and Trek Bicycle Company;
- improved lifetime of die-casting molds by plasma source ion implantation;
- off-resonance spin-locking technique for high field magnetic resonance imaging; and
- development with Tracor/Northern of a real-time confocal laser-scanning microscope for three-dimensional and four-dimensional (three dimensional versus time) imaging.

**U. Distinguished Professorships**

The Wisconsin Distinguished Professorship program is designed to recognize and support professorships in areas of vital or emerging economic significance to the State of Wisconsin. A Wisconsin distinguished professor is an individual whose scholarship and service can demonstrate potential impact on Wisconsin's economy and who would be judged as outstanding by peers and the public alike. The state's funding contribution to each professorship must be matched with private money during the individual's five-year program appointment. The private match used for research support and may be combined with institutional funds to support the remainder of salary and benefits costs and associated costs of research.

**II. UW-MILWAUKEE**

**A. Grant Matching and Research Committee Awards**

The Graduate School provides grant-matching funds, in the form of research assistantship salary support and equipment support to foster the extramural funding of faculty research and creative activity. A portion of the present budget of \$598,956 was historically allocated as legislated funding. Using resources on a revolving basis, the Graduate School Research Committee provides limited funding to selected (and primarily junior) faculty to initiate new research.

**B. Great Lakes WATER Institute**

Historically legislated funding of \$102,800 for the Great Lakes Research Facility comprises a portion of the current funding for the UWM Graduate School WATER Institute to maintain the research facilities and enhance capabilities related to environmental and aquatic research. The WATER Institute provides the infrastructure necessary for the research tenants. The Institute provides faculty and research staff members with research opportunities directly related to the UWM Strategic Plan. Tenants include the Center for Great Lakes Studies, the Aquaculture Institute, the NIEHS Marine and Freshwater Biomedical Sciences Center, a Wisconsin Sea Grant office, and two Wisconsin Department of Natural Resources units.

**C. Research in Engineering and Technology**

The historical allocation in 1985-86 of \$54,000 for research in engineering and technology continues to be used to increase the ability of the College of Engineering and Applied Science to encourage collaborative research between UWM faculty and research employees in Milwaukee business and industry. The allocation is used to foster collaborative research on a wide variety of applied research projects.

#### **D. Technology Transfer**

Since receiving an allocation of \$107,600 in 1983, the Graduate School continues to be dedicated to fostering collaborative research between UWM faculty and the Milwaukee area industrial community, transferring technology from the university into commercial processes and products, and developing the intellectual property of the faculty through licenses and patents. Funding is provided to support these activities through the Graduate School Office of Research Services and Administration.

#### **E. Milwaukee Research Plan**

UWM received \$220,600 in the 1980s to support the Milwaukee Research Plan. The School of Business Administration received \$65,800 in 1985-86 and \$90,600 in 1987-88 for its applied research services to the Milwaukee business community. The initial use of the funding was to develop centers to enable faculty and staff to increase the competitive capabilities of business, primarily in southeastern Wisconsin, through teaching and research. The emphasis is on creating effective linkages between UWM and the business community. These activities continue through the SBA Bostrom Center for Business Competitiveness, Innovation and Entrepreneurship. The Center serves as an interdisciplinary applied research center to identify, evaluate, and disseminate techniques, strategies, philosophies, and policies that enhance the business competitiveness of firms, and the vitality of innovation and entrepreneurship.

In addition to the activities of the School of Business Administration, funding is being utilized by the Graduate School and the College of Engineering and Applied Science. The Graduate School funding is used to increase collaboration between UWM faculty and the Milwaukee business community. The initial allocation of \$17,500 in 1987-88 was used for a collaborative research project sponsored by the UWM Center for Great Lakes Studies and Milwaukee County. Since that time, the Graduate School Office of Research Services and Administration has utilized funds for a series of productive collaborative research projects between UWM and Milwaukee area companies.

The Graduate School created the Advanced Analysis Facility in 1992 to serve the UWM scientific community as well as regional industry by providing UWM faculty expertise combined with a unique array of scientific instrumentation, which in combination can be effectively applied to solving applied research problems. Research funding is being utilized by the AAF to assess problems and develop solutions that make industrial partners more competitive. Recent company partners include: Johnson Controls, S.C., Johnson Wax, Benz Oil, Allen Bradley, and W.H. Bradley.

The 1987-88 Milwaukee Plan research allocation included \$46,700 that is used by the College of Engineering and Applied Science to support faculty research in the areas of quality assurance and automated manufacturing.

**F. Manufacture of Metal Composites**

Historical funding of \$86,400 has facilitated research in the College of Engineering and Applied Science in the area of design, development, and manufacturing of metal matrix composites. This research benefits the materials processing industry in Wisconsin, specifically equipment manufacturers. Research includes composites used for engines, electromechanical machinery, and high-temperature cables. Specific companies include Mercury Marine, Tecumseh, Outboard Marine, Wisconsin Electric, Eaton, Louis Electric, and ASEA.

**II. SYSTEMWIDE**

**A. Applied Research**

This program provides funding for UW System institutions for research addressing specific problems faced by Wisconsin industries. Details regarding this program are provided in a separate biennial report to the State.

**B. Distinguished Professors**

This funding provides partial support for 20 Distinguished Professor positions in the University of Wisconsin System. The GPR funding is matched by an equal or greater match from businesses and/or other non-GPR sources. At the end of the 1999-00 fiscal year, this funding supported ten professors at UW-Madison, three at UW-Milwaukee, two at UW-Stevens Point, and one at La Crosse. An annual fiscal report is provided for this program.

**C. Solid Waste Experiment Centers, Noncompostible Landfill and Sludge.**

This program provides funding to UW System institutions for research into the alternative methods for the disposal of solid waste. Details regarding these programs are provided in a separate annual report to the State.

***UNIVERSITY OF WISCONSIN SYSTEM***

***2002 PUBLIC SERVICE REPORT***

## UNIVERSITY OF WISCONSIN SYSTEM PUBLIC SERVICE

### I. OVERVIEW

The University of Wisconsin System's 2001-2002 GPR public service budget was \$61.6 million (Table 1). UW-Extension's budget accounts for the majority of the public service funding (69.2%). The University's budget for extension and public service activities in FY 2001-2002 included \$1,629,062 for special legislated projects and \$59,956,616 for ongoing programs. This report covers direct public service activities and excludes other activities (e.g. institutional support, research, physical plant, etc.) that are in support of public service.

**TABLE 1  
PUBLIC SERVICE GPR FUNDING BY INSTITUTION  
2001-2002 FISCAL YEAR**

Madison	\$ 14,856,417	24.1%
Milwaukee	1,724,934	2.8%
Comprehensives and Colleges	2,174,464	3.5%
Systemwide	210,509	0.4%
Extension	42,619,354	69.2%
Totals	\$ 61,585,678	100.0%

Extension faculty and staff, based in UW-Extension, on every campus of the UW System and in county extension offices throughout the state, develop and teach extension programs. To meet its mission, UW-Extension develops statewide plans and priorities based on the emerging needs affecting individuals, families, labor, business, agriculture, youth, the environment, the economy, communities, the professions, and senior citizens. Planning involves faculty and staff, public representatives, cooperating agencies, and clientele groups. These plans are the basis for reallocating base funds from lower to emerging higher priorities. UW-Extension also meets the needs of public service through legislated projects. Appendix 1 illustrates the 2001-2002 legislated projects.

The four UW-Extension programming units develop operating budgets including base funding and legislated or other special projects. The programming units are:

- Cooperative Extension
- Continuing Education Extension
- Broadcasting and Media Innovations
- Business and Manufacturing Extension (including Small Business Development Center)

Appendix 2 details the planning processes of each UW-Extension division.

## II. UW-EXTENSION MISSION

The select mission of the University of Wisconsin-Extension is to provide, jointly with the UW institutions and the Wisconsin counties, an extension program designed to apply University research, knowledge and resources to meet the educational needs of Wisconsin people, wherever they live and work. This mission includes the work of the four UW-Extension units: Cooperative Extension, Continuing Education Extension, Broadcasting and Media Innovations and Business and Manufacturing Extension in:

- **Teaching.** To extend non-credit education opportunities and campus-based degree credit, through a variety of delivery methods and media. These programs develop, organize and impart knowledge and research applications needed by the public and by such special groups as business, labor, agriculture, youth, families, government and the professions.
- **Applied Research.** To identify research problems, conduct applied research and demonstrate the results of research relevant to the specific needs of individuals, organizations, businesses and communities.
- **Broadcasting and Media Innovations.** To provide informational, educational, cultural and public affairs programming via radio and television and to improve and encourage effective use of existing and emerging communications technologies for public information, extension education and communication among faculty, staff and clientele.
- **Statewide Program Leadership, Coordination and Accountability.** To provide access for all of Wisconsin citizens to the research, knowledge and resources of their university system through program leadership, budget administration and program/budget accountability for a coordinated statewide extension program delivered with and through the University of Wisconsin System institutions and county and area extension offices.

## III. THE RELATIONSHIP BETWEEN BASE PROGRAM FUNDS AND SPECIAL LEGISLATED PROJECT FUNDS

Investments in base program funds are constantly re-examined within UW-Extension to meet emerging priority needs defined through regular planning and priority-setting processes, as well as through special projects. In addition, program changes are made as faculty annually evaluate and refocus their program emphases and directions as described in Appendix 2. Both these means are essential for extension programs to remain relevant and responsive.

Appendix 3 offers selected examples of how base funds were reallocated in FY 2002 to meet changes in priority needs.

Sometimes, however, base reallocations are not sufficient to meet emerging priority needs associated with new legislation, societal change and critical new issues. In these cases, special project funds are requested to support emerging priorities that require funding beyond the institution's capacity to respond through base reallocation. Often ongoing programs basic to core activities must be sustained, faculty talents in a high priority field may be fully committed and unavailable for reallocation, or new faculty expertise and skills may be required.

Usually, the issues and needs requiring legislated special project funding are of such magnitude that they require long-term programming. For example, innovative programs in Water Quality, Waste Management, Sustainable Agriculture and Manufacturing Technology Transfer, which emerged as critical priority issues in the 1980s, required long-term investments in sustained educational programs that made a significant impact over time. Just as base programs are not static, programs in legislated special project areas change to address emerging issues. For example, in Dairy Profitability, priority emphases at any given time may fluctuate from milk quality to marketing orders to input cost reductions.

Legislated special project funding is only part of a long-term commitment to sustain high priority initiatives. UW-Extension reallocates base funds to augment legislated special project funding for new programs and integrates special projects with base programs to assure they are part of ongoing statewide educational effort. Uniting legislated special projects with base programs assures better identity and acceptance, access, continuity and stewardship of financial and personnel resources. Legislated special project funds remain committed to the programs for which they were allocated and retain their budget and program identity, however special projects do not stand alone. They become part of a comprehensive educational program accessible to people throughout the state and adaptable to local needs.

Appendix 4 describes and links UW-Extension's legislated and other special projects to the institutions' base program areas.



**APPENDIX 1**  
**UNIVERSITY OF WISCONSIN SYSTEM**  
**PUBLIC SERVICE LEGISLATED PROJECTS**  
**2001-2002 FISCAL YEAR**

<b><u>PROJECT TITLE</u></b>	<b><u>ALLOCATION</u></b>
<b>COOPERATIVE EXTENSION:</b>	<b>\$975,675</b>
Community Economic Analysis	68,541
Center for Economic Development	75,113
Rural Development Institute	83,480
Biotechnology Education (BioTrek)	71,276
Farm Financial Management	71,168
Dairy Profitability Center	243,229
Agricultural Technology & Family Farm Institute	72,981
Nutrient & Pest Management	269,887
Local Planning Grant	20,000
<b>CONTINUING EDUCATION EXTENSION:</b>	<b>\$653,387</b>
Minority Entrepreneurship	89,199
School for Workers	111,756
Manufacturing Technology Transfer	205,888
Educational Technology	94,800
Solid and Hazardous Waste Education	151,744
<b>UNIVERSITY OF WISCONSIN SYSTEM TOTAL:</b>	<b>\$1,629,062</b>

## APPENDIX 2 UW-EXTENSION PLANNING & BUDGETING PRACTICES

To meet their mission responsibilities, UW-Extension leads the development of statewide plans that provide the policy framework for identifying program needs, assigning relative priorities, and making budget allocations and reallocations. The institution's program planning and budget guidelines link programs, budgets and changes. Each UW-Extension division follows an internal budget and program planning process within this institutional model.

### A. Cooperative Extension

Cooperative Extension plans on a four-year cycle, with 2000-2004 being the current cycle. Planning involves faculty and staff, public officials, business, labor, cooperating governmental agencies, agriculture and agri-business and other citizen representatives. The four-year plan defines community-based priorities and special needs. These needs are correlated with personnel and fiscal resources, with reallocations made where appropriate. Some reallocations involve no budget modifications, as faculty and staff shift their programmatic direction. Other changes involve both budget and position reallocation to support the changing needs identified in the strategic plan.

### B. Continuing Education Extension

Continuing Education reallocates resources annually in a priority framework, defined by the strategic plan it develops every five years. In 1998, CEE and the Continuing Education Extension Committee (CEEC), which is comprised of continuing education deans and directors from each UW institution, began working on the division's five-year strategic plan. The strategic plan, "Programs, Services, and Partnerships for the 21<sup>st</sup> Century," was completed and published in May 2000. The deans and directors at the institutions agreed on the shared vision and directions that will enable them to develop campus specific five-year plans that align with the statewide strategic plan. While allowing for planning to occur at the institutional level, the statewide plan serves as the overarching direction for programs, services, and partnerships. Our division's commitment to lifelong learning is based on the belief that our clients can best meet the challenges of success today if they have opportunities for learning throughout their life spans. On an annual basis, CEE uses an interactive process in the development of the interinstitutional budgets to initiate, define and discuss changes to ongoing programs or to meet emerging needs.

### C. Broadcasting and Media Innovations

Strategic planning in Broadcasting and Media Innovations differs in its approach, but not in its objectives, compared to other UW-Extension divisions. This division works closely with its partner in Wisconsin Public Broadcasting, the Wisconsin Educational Communications Board (ECB), to define strategic

direction in educational areas and to define regional programming needs throughout Wisconsin. The Division continuously evaluates the effect of programming through audience surveys and other methodology. It also responds to demands for programming support, delivery outlets and production facilities by faculty and staff of the UW System. Detailed programming is scheduled annually, as educational, instructional and cultural programs are modified to meet public and professional priorities. Resources are moved annually from lower to higher priority programs.

**D. Business and Manufacturing Extension**

Business and Manufacturing Extension activities include those of the Wisconsin Small Business Development Center (SBDC) program and those that relate to Business and Industry or Management Institutes.

The Small Business Development Center allocates resources based on its current "Strategic Plan/Operating Plan" and the current U.S. Small Business Administration/SBDC Cooperative Agreement. The Strategic Plan outlines broad strategic direction paths the SBDC must travel to reach its vision to connect entrepreneurs and small business owners with knowledge, tools and resources. The Plan is the result of a multi-phased organizational process involving volunteers, SBDC staff and SBDC's varied stakeholders.

Formal community-based regional assessments of service delivery are held throughout the year to identify improved ways to serve customers.

The SBDC receives significant funding from the U.S. Small Business Administration (SBA). The SBA/SBDC Cooperative Agreement is negotiated with the SBA, with the SBDC Strategic Plan as the heart of the Agreement. Individual campus goals are negotiated annually in support of the SBA/SBDC Cooperative Agreement.

Business and Industry/Management Institutes long-range planning and annual reviews are conducted as part of the annual inter-institutional agreement process. General directions for the overall programs are set and relevant goals are identified. Changes during the planning period also can occur.

**APPENDIX 3  
PROGRAM REALLOCATIONS IN FY 2002  
(Selected List)**

- | Reallocated From:   | (Institution/Division/Program) |
|---|--------------------------------|
| Priority Investment:  | (Institution/Division/Program) |
| Amount:   | (Funding and FTE)              |
| 1. From: Extension Admin-Recruiter                          |                                |
| To: Cooperative Extension                                   |                                |
| Amount:   | \$23,000                       |
| To support Coop Extension's Smith-Lever pay plan shortfall. |                                |
| 2. From: UW-River Falls                                     |                                |
| To: Cooperative Extension                                   |                                |
| Amount:   | \$28,043                       |
| To support Coop Extension's Smith-Lever pay plan shortfall. |                                |
| 3. From: UW-River Falls                                     |                                |
| To: Cooperative Extension                                   |                                |
| Amount:   | \$51,280                       |
| To support Coop Extension's Smith-Lever pay plan shortfall. |                                |
| 4. From: UW-Madison (CALS)                                  |                                |
| To: Cooperative Extension                                   |                                |
| Amount:   | \$102,410                      |
| To support Coop Extension's Smith-Lever pay plan shortfall. |                                |
| 5. From: Cooperative Extension - PDE                        |                                |
| To: Cooperative Extension                                   |                                |
| Amount:   | \$56,455                       |
| To support Coop Extension's Smith-Lever pay plan shortfall. |                                |
| 6. From: Cooperative Extension - Digital Media              |                                |
| To: Cooperative Extension                                   |                                |
| Amount:   | \$68,068                       |
| To support Coop Extension's Smith-Lever pay plan shortfall. |                                |

- 7. From: Continuing Education Extension  
 To: 11 UW Institutions  
 Amount: \$55,000 and 0.00 FTE

To support statewide delivery of courses delivered via technology.

- 8. From: Continuing Education Extension  
 To: UW- Milwaukee School of Education  
 Amount: \$94,068 and 1.79 FTE

To support collaboration between UW-Extension and UW-Milwaukee School of Education, Milwaukee Public Schools, and the teachers' union in the Metropolitan Milwaukee Teacher Education program.

- 9. From: Continuing Education Extension  
 To: UW Learning Innovations  
 Amount: \$1,120,552 and 0.00 FTE

UW Learning Innovations will support the UW institutions, faculty and staff as they develop technology-enabled learning products and services that directly benefit UW students and are marketed in Wisconsin and beyond to generate resources used in support of students.

- 10. From: WHA Administration  
 To: WHA-TV Programming  
 Amount: \$35,173 and 0.50 FTE

Eliminate the Associate Director of TV position and created a full-time assistant Program Manager position in the Programming department.

**APPENDIX 4**  
**PROGRAMS AND SPECIAL PROJECTS**  
**UW-EXTENSION PROGRAMS AND LEGISLATED PROJECTS**

## I. OVERVIEW

Each of UW-Extension's divisions divides its activities among broadly defined program areas. Cooperative Extension and Continuing Education Extension have special legislated projects, which complement these divisions' program thrusts. This appendix briefly describes the divisions' major program areas and identifies any special legislated projects associated with each.

## II. COOPERATIVE EXTENSION

Cooperative Extension's faculty and staff develop programs that help people understand and use knowledge and research from the University. Its county staff, supported by designated faculty and staff of UW System institutions who have collaborative appointments with UW-Extension, bring university resources to meet local needs. Institution-based faculty and staff conduct applied research and interpret knowledge in their specialties through programs and activities coordinated by UW-Extension, and teach in collaboration with county faculty and staff. Cooperative Extension has four program areas:

### A. Community, Natural Resources, and Economic Development (CNRED)

CNRED programs help people set goals, make decisions, and develop sound local public policies; build strong communities and neighborhoods; strengthen local economies; provide good jobs and essential services and balance economic growth and environmental quality issues. Special projects in this program are:

- **Community Economic Analysis:** A joint project of UW-Madison and UW-Extension (\$68,541 GPR), provides information and analysis concerning the economic characteristics and structure of Wisconsin communities to University faculty and staff, county-based community faculty, area agents and community representatives working on economic development issues. Project funds support community development specialists who collect and analyze information, prepare graphs, overheads, and other educational materials, and work with Extension faculty in program delivery. The need for this support will continue because there is a great demand for up-to-date information from Wisconsin communities that are facing issues affected by the dynamics of the local, state, national and international economies.
- **Regional Center for Economic Development:** This effort involves three projects at UW-Superior Center for Economic Development (\$75,113 GPR), and UW-River Falls Rural Development Institute (UWEX \$83,480 Fund 104). Each project provides resources that support regional economic development

activities. These carrier programs complement those funded with ongoing resources, providing a regional network of support for community development. This combination of ongoing and special project funding supports research and program delivery capabilities beyond those supported by special project funds, demonstrating the synergistic relationship between special projects and core programs.

- **Local Planning Grant:** In FY 2000, the legislature allocated \$20,000 for support of the development of two model ordinances by UW-Extension, as required in the state's "Smart Growth" legislation. This undertaking was coordinated with an extension specialist in the Department of Urban and Regional Planning at UW-Madison, who is drafting the ordinances.

## B. Agriculture and Agribusiness

The Agriculture and Agribusiness Program Area provides research-based information, alternatives and decision aids to producers and agribusiness entrepreneurs to improve their profitability and competitive position in the global marketplace; to provide, produce and distribute an adequate supply of high quality food and fiber; to enhance and protect the environment including soil and water resources and to develop effective public policies for agriculture. Four special projects illustrate the dilemmas involved in prioritizing the use of limited resources among competing demands for internal funding which have required reallocation from existing educational programs that support Wisconsin's agricultural economies.

- **Farm Financial Management:** The Farm Financial Management project (\$71,168 GPR) is a joint activity of UW-Extension and UW-Madison which analyzes the many factors affecting the financial performance of Wisconsin farm businesses. This information provides farmers, educators, public policy-makers, legislators and other agricultural professionals with a better understanding of why some farm businesses compete successfully and survive, while others do not. The initial project focused on utilization of the records of the Farm Credit System of St. Paul. Data variation demonstrated a continuing need to understand how changing factors such as farm business size; short, intermediate and long term debt position; resource allocation efficiency and owner's managerial skill can affect the profitability, solvency and liquidity characteristics and performance of Wisconsin farm businesses. The project has expanded to a cooperative venture with the Center for Dairy Profitability in focusing on dairy farms in Wisconsin by including farm record association data. The project continues to gather, analyze and distribute information for use by county agents, specialists, other policy, and professional educators in their educational programs to clientele throughout the state. The dynamics of the international, national and state economies and the resulting changing conditions in Wisconsin place new challenges on farm managers and educators. As the information changes, so this special project continues to change with its

goals and objectives redefined to meet contemporary needs for public policy information.

- **Center for Dairy Profitability:** The Center for Dairy Profitability (\$243,229 GPR) is a joint project of UW-Extension, UW-Madison, UW-Platteville and UW-River Falls that provides faculty and program resources to enhance and augment ongoing programs supporting Wisconsin's dairy industry. It has developed linkages with several states and several educational programs. The Center now delivers interdisciplinary programs that emphasize integrated production, financing, marketing and management systems. These ongoing programs assist farmers and the dairy industry to maintain and enhance their national and international competitiveness. Continuing resources have supported farm electrification/milking systems/engineering (UW-Madison), dairy farm financial management (UW-River Falls), and dairy beef and veal production and marketing (UW-Platteville).

In cooperation with USDA's Cooperative State Research, Extension, and Education Service, the Center has designed and updated a comprehensive CD-ROM dairy information/publications database. Several spreadsheet-based management decision aids have been constructed, disseminated largely through the Center's heavily accessed web page. Expanded personnel resources in 1996 enabled the Center to develop the curricula for two new management training offerings: *Ag Ventures*, taught primarily by county UWEX faculty, and the Agribusiness Executive Management program, an advanced seminar series offered in cooperation with the UW-Madison School of Business. Emerging issues related to siting of concentrated animal feeding operations (CAFO's), food safety and quality, and managing price risk will require continued project activities to address related private and public concerns.

- **Program on Agricultural Technology Studies (PATS):** This program is a special project of UW-Madison and UW-Extension. Formerly the Agricultural Technology and Family Farm Institute, PATS was created in 1997 to refocus activities in light of the sharp reduction in state funding that occurred in fiscal year 1996. PATS (\$72,981 GPR) continues to identify and evaluate factors that affect the economic viability of family-sized farms in Wisconsin and to design and deliver outreach programs that help Wisconsin citizens understand the relationship between farming and rural economic development. Through its biennial survey of Wisconsin farmer attitudes with respect to farm and rural public policy issues, PATS has become a highly respected source of objective information for policy analysts and legislators. Using its reduced state funding to leverage state and federal grants, PATS has recently expanded its activities to include research and outreach on animal waste management, property tax reform, and management-intensive rotational grazing. The unit maintains extensive databases on rural trends and conditions and designs customized materials for county UW-Extension faculty and staff to use in local educational offerings. Increasing public concerns about land use will increase demand for the PATS' research and outreach.



- **The Nutrient and Pesticide Management Program:** Special projects supported by the Nutrient and Pesticide Management Program (\$269,887 GPR) provide educational programs and foster the exchange of information within the University and across the agricultural businesses and communities. The NPM links research and extension programs, as well as research and Extension faculty, with farmers, agribusinesses and rural communities in developing site-specific solutions to problems involving soil fertility, nutrient management, manure management, sludge management, insect pest control and plant disease pest control and water quality. While over 21 crops, grown in major acreage in Wisconsin, have benefited from the NPM program, most potato and cranberry crops rely on efforts associated with Integrated Pest Management (IPM) Programs. New IPM efforts with greenhouse production and facilities also focus on employee health. The need is ongoing as the array of nutrients, crops and pesticides continue to evolve.

### C. Family Living Programs

Family Living Programs educate families so they are capable of making informed decisions and avoid potential problems they may face. Education programs are designed based on current research and adapted to target the unique needs of families across the state and nation. The programs include areas such as health and nutrition, parenting education, family financial management, community housing and preventing youth risk behaviors.

One special initiative is BioTrek. The Biotechnology Education Outreach Program (BioTrek) is a joint project of the UW-Madison Biotechnology Center and the Family Living Program of UW-Extension. This program provides information and insight on technical and social issues of biotechnology. The biotechnology special project utilizes UW-Madison and UW-Extension special project resources of \$71,276 GPR and has accomplished the following results:

- The University of Wisconsin Biotechnology Center is housed in the Biotechnology Center/Genetics Building. The Teaching Lab and the Invention Space provide a setting for BioTrek workshops in biotechnology and life sciences. The BioTrek programs provided workshops and tours at the Biotechnology Center and across the state, directly serving over 3,500 citizens with experiences and insights into life sciences.
- Using the Invention Space, BioTrek Staffers have developed two new hands-on science curricula for informal science explorations by youth and adults. These materials emphasize the development of skills of observation, skepticism and creativity. Experimental "Fun Food Stuff" uses food to develop science savvy. "Doing DNA: DeCode of Life" uses 12 activities and experiments to introduce DNA as the genetic information molecule. Activities such as "DNA as Videotape" and "DNA Dance" tell the story of DNA structure and function. BioTrek is sharing these inexpensive biotechnology experiments with outreach

programs at the Minnesota Science Museum, a leading hands-on science center recognized for innovation in informal science education.

- BioTrek staffers are also leading the feasibility study to assess converting the UW Dairy Barn into a hands-on science center to welcome people of all ages to UW-Madison to learn about science as a way of exploring through experimentation on the campus. Individuals across the world receive information from the UW Biotechnology Center on the World Wide Web at: <http://www.biotech.wisc.edu>

#### **D. 4-H Youth Development**

4-H Youth Development Programs work with and through community volunteers, organizations, and schools, to offer educational programs that engage young people in educational projects, events, activities and clubs; identify and minimize the sources of risk facing young people; help young people make contributions to family and community life; and train volunteer leaders. There are no special legislated project funds in this area.

### **III. CONTINUING EDUCATION EXTENSION**

The University of Wisconsin-Extension's Division of Continuing Education Extension (CEE) provides outreach and e-learning programs, services, and support to the 26 UW campuses and a wide variety of corporate and non-profit partners. In conjunction with the 13 two-year and 13 four-year UW campuses, CEE is a lifelong learning partner for more than 200,000 people each year, from the 72 counties across Wisconsin, all 50 states, and 73 countries around the world. Each institution/campus with its select mission, as well as array of program and degree entitlements, offers educational programs and services to meet constituent need. CEE acts in concert to achieve mutually identified goals and objectives that reflect the synergy generated by the diverse spectrum of resources operating at institutional, collective, and statewide levels in meeting the needs of lifelong learners.

"Strategic Directions: Programs, Services, and Partnerships for the 21<sup>st</sup> Century," the divisional statewide strategic plan, identifies five divisional priorities. Continuing educators will:

- advocate for lifelong learning.
- collaborate effectively and creatively.
- integrate technology and practice.
- practice entrepreneurial fiscal management.
- and assess the impact of programs, services, and partnerships.

#### **A. Advocate for Lifelong Learning**

- **Criminal Justice:** The CEE Dean's Office worked with UW System Administration Market Research to develop a survey for Wisconsin law

enforcement officers. The survey explored levels of interest in a collaborative online degree that would enable working law enforcement personnel to complete a baccalaureate degree while remaining in their communities. The survey was mailed to law enforcement personnel who have met the state's minimum standard of 60 credits but have not yet completed a baccalaureate degree. 56 percent of survey respondents indicated they were "extremely likely" or "very likely" to enroll in the proposed program within the next five years. Nearly 400 law enforcement officers (75 percent of the respondents) asked to be contacted with additional information about the program. Representatives from CEE, UW-Eau Claire, UW-Milwaukee, UW-Parkside, UW-Platteville, UW-River Falls, UW-Stout, UW-Superior, and UW-Whitewater have begun meeting to discuss creation of the collaborative online degree completion program.

- **Gerontology Certificate:** CEE is working with representatives from five UW institutions that offer gerontology certificates— UW-La Crosse, UW-Madison, UW-Milwaukee, UW-Parkside, and UW-Superior to establish a collaborative, online certificate program. The certificate will have both credit and non-credit options.
- **Senior Symposium:** On June 28, 2001, more than 70 University of Wisconsin Chancellors, Institutional Business Representatives, Development Officers, and community members from across the state met at The Pyle Center in Madison to explore the concept of retirement housing built on public university-owned land. Keynote presentations were made by representatives from The Village at Penn State and University Commons at the University of Michigan Ann Arbor. The day's program also included a panel of Wisconsin experts to explore the issues pertaining to such a venture in Wisconsin.
- **Minority Entrepreneurship:** The Minority Entrepreneurship Program at UW-Milwaukee (\$89,199) provides real world, practical education for minority clients and others who are interested in operating or starting their own businesses. Its courses, which cover the basic components of successful business ventures, are delivered on-site in minority communities, using practitioners (such as bankers, marketing specialists, accountants, business attorneys and human resource managers) who can relate their experiences and the problems they encountered to others considering business ventures.
- **School for Workers (SFW):** CEE has continued financial support of UW-Extension School for Workers, a labor education unit. SFW is the oldest university-based labor education program in North America, founded in 1925. One of the first operational components of the "Wisconsin Idea", the School, its faculty and staff, have long brought these three components--teaching, research, and outreach--to thousands of workers, unions, and employers throughout Wisconsin, the nation, and the world.

SFW runs approximately 150 programs each year, which involve more than 4,000 union representatives, officers, members, and employer representatives. SFW

offers a wide range of programs ranging from one-hour presentations to evening community classes, two or three day conferences, week-long residential institutes at the J.F. Friedrich Center in Madison, to multi-day labor-management facilitations involving a wide range of subjects. SFW faculty also provide a wide range of applied research and technical assistance services.

SFW received project funding (\$111,756) to support the redirection of its curriculum to develop new programming in several areas that contribute directly to the economic development of Wisconsin. This initiative has been very successful in developing programming in win-win bargaining, teamwork, new compensation systems, work restructuring, and employee involvement. The department offers this training and follow-up facilitation in a variety of formats in both residential and on-site locations.

The School for Workers has been providing training to union representatives, employers, and workers on OSHA regulations since the 1960's, as well as training on negotiation, team building, and facilitation. They continue these efforts and have added training in computing and occupational health. Ergonomics is a training area in which they have expanded their audience to include telephone and communications workers. They are currently working to design new hand tools that will reduce the risk of repetitive motion injuries common to the work of union employees.

- **Baraboo Spanish Instruction:** In the fall of 2001, Continuing Education Extension helped UW-Baraboo/Sauk County Continuing Education implement a Workplace Spanish class for English-speaking supervisors, police, and social service workers. With the funding provided by CEE (\$1,800), UW-Baraboo/Sauk County Continuing Education Extension was able to offer two sessions: Workplace Spanish for participants who want more specific vocabulary and Conversational Spanish for those who need the basics.
- **American Council on Education (ACE):** The Continuing Education Dean's Office houses the Wisconsin state affiliate for the American Council on Education (ACE)'s College Credit Recommendation Program. The College Credit Recommendation Service is a national ACE program that evaluates workplace education and training programs and recommends appropriate college credit levels. The Wisconsin state affiliate serves as the link between the national program and Wisconsin business and industry, labor unions, professional and volunteer associations, government agencies, and trade, technical and business schools.

## **B. Collaborate Effectively and Creatively**

- **Diversity Program Development Initiative (DPDI):** The Diversity Program Development Initiative (DPDI) is a new effort aimed at helping the UW institutions develop and implement new diversity ventures that are consistent with the goals and initiatives of UW-Extension's Plan 2008. Program recipients are

required to work with a community partner with credibility in the target community. Nine grants to seven campuses, listed below, were issued in the 2000-01 and 2001-02 fiscal years:

**UW-Stevens Point Extension**— The EXPLORE program addresses the educational needs of migrant Hispanics in central Wisconsin by providing enrichment programs, tutoring, and English instruction for youth in grades 5-10 and career development consulting for adults. CEE provided two years of funding to this program, a collaboration among UWSP Extension, UWSP Office of Multicultural Affairs, and United Migrant Opportunity Services (UMOS).

The University of Wisconsin-Stevens Point Extension, the Wausau/Marathon County Chamber of Commerce, and the Portage County Business Council have created a Diversity/Cultural Team to provide diversity/cultural education to businesses in central Wisconsin.

**UW-Madison Division of Continuing Studies**— The Professional Enrichment and Leadership Development Program created four 8-hour training sessions for the staff of Centro Hispano, human service professionals who provide direct services to the Dane County Latino/a community. A second year of funding provided strategic planning and project management education to the agency's human services specialists and board members. Two 8-hour training sessions were provided. The program is a partnership between the UW-Madison Division of Continuing Studies and Centro Hispano of Madison.

**UW-Eau Claire College of Arts and Sciences Continuing Education/Extension**—The UW-Eau Claire College of Arts and Sciences Continuing Education/Extension received DPDI funding to recruit Hmong youth to participate in existing continuing education pre-college programs. The city of Eau Claire's Hmong Community Liaison Officer serves as the recruiter, working with program coordinators, parents, school officials, personnel of local Hmong Mutual Assistance Associations, and community leaders to foster enrollment in existing pre-college programs.

UW-Eau Claire's Indianhead Arts and Education Center received funding to bring inner city high school students of color and their instructor to the 2002 Summer Jazz Camp. The Milwaukee School of the Arts is the community partner.

**UW-Parkside Center for Community Partnerships**—The Dismantling Racism through Study Circles project allow the collaboration among three local entities, UW-Parkside - Kenosha Coalition for Dismantling Racism - Sustainable Racine Preparing for Diversity Committee, to continue to organize study circles on racism and race relations as a means of organizing community members to move towards change in the Kenosha and Racine communities.

**The UW-La Crosse Office of Continuing Education and Extension**—The UW-La Crosse Office of Continuing Education and Extension and the Boys and

Girls Club of La Crosse received DPDI funds to recruit youth of color for a one-day, hands-on summer science program.

**UW-Sheboygan Office of Continuing Education**— Understanding Hispanics in the Workplace is a series of seminars for Sheboygan area employers to understand Hispanic values, learn some business Spanish and communication strategies, and network about multi-culturalism in the workplace. UW-Sheboygan is collaborating with the Literacy Council of Sheboygan County to offer the program.

**UW-Stout Stout Solutions**— Stout Solutions received DPDI funding to develop a Hmong history course for K-12 teachers. The plan calls for the delivery of the courses by distance education technology, providing learning experiences not only for teachers, but for students and adults of Hmong ancestry. The Menomonie Area School District and the Hmong American Community Association, Inc. in Menomonie are partners in the project.

- **Collaborative Nursing Program (CNP) Grant:** A grant from the U.S. Department of Health and Human Services is helping make the entire UW Collaborative Nursing Program (CNP) curriculum available to rural nurses in Wisconsin and neighboring states via the Internet. The U.S. Department of Health and Human Services, Division of Nursing, awarded a Rural Distance Learning Cooperative Agreement to the University of Wisconsin-Madison School of Nursing. Under the terms of the agreement, the CNP has received nearly \$600,000 over a three-year period (fall 1999-2002). The funds helped the CNP to recruit 75 new students, provide laptop computers to new students who needed Internet access, and reformat several nursing courses for Internet delivery. The grant is one of only six cooperative agreements for distance learning for rural nurses awarded nationally.

Through the collaborative efforts of the nursing programs of the Universities of Wisconsin Eau Claire, Green Bay, Madison, Milwaukee, and Oshkosh, the CNP allows nurses to complete a baccalaureate degree in nursing through distance education technologies. Approximately 300 Wisconsin nurses are enrolled in the program at any given time, and 215 CNP students have graduated since the end of the May, 2002. Continuing Education Extension has served as a facilitator for the collaboration.

- **IDEAS Portal Website:** On a statewide level, Continuing Education Extension has engaged in a partnership with the TEACH Committee on Collaboration to build the IDEAS Portal Website (<http://www.ideas.wisconsin.edu>). The TEACH Wisconsin Committee on Collaboration includes UW System, Department of Public Instruction, Wisconsin Technical College System, Wisconsin Association of Independent Colleges and Universities, TEACH Wisconsin, and the Educational Communications Board. Through this project, CEE has engaged faculty from UW institutions (from both Schools and Colleges of Education and Letters and Science) to work with teachers in PK-12 schools and CESA staff to identify, evaluate, and rate online education resources that are mapped to the Wisconsin Model Academic Standards.

The IDEAS Portal Website project has been in operation since February of 2000 with the hiring of the Project Director. The initial team of teacher-researchers was hired, the evaluation rubric constructed, the web site built and populated with resources tested in Wisconsin classrooms, and initial marketing was implemented. The web site was designed to allow teachers to search for resources by grade, subject, or academic standard. The official web site went live in August 2001, and in only 8 months received 1 million hits, with the average time on site being 12-13 minutes. More than 16,000 educators have sent the website identification (URL) to colleagues who they believe will find it useful. Through May 2002, IDEAS received 1,319,022 hits and 130,416 visits.

- **Metropolitan Multicultural Teacher Education Program (MMTEP):** The Division of Continuing Education Extension continues to fund the Metropolitan Milwaukee Teacher Education Program (MMTEP), which remains a national model for bringing more people of color into teaching. The program is a collaborative effort of the University of Wisconsin-Milwaukee's School of Education, the Milwaukee Public Schools and the Milwaukee teachers' union.

CEE also provides funding to the "Connected Community of Learners" program at Milwaukee Public Schools. To help students meet their proficiency goals in the areas of science and oral presentations, each student in the summer program is provided with an Internet-ready laptop computer. Students spend a portion of their summer working in the schools and a portion working in community educational settings such as Discovery World and the Milwaukee Public Museum on projects related to specially designed curriculum.

- **Cultural Coalition:** Continuing Education Extension is a member of the Cultural Coalition, an alliance of state and nonprofit arts, humanities and history agencies and organizations that promotes arts and humanities in the state. Along with CEE, the Cultural Coalition members are: Wisconsin Public Television; Wisconsin Public Radio; Wisconsin Academy of Sciences, Arts and Letters; Wisconsin Arts Board; Wisconsin Humanities Council; and the Wisconsin Historical Society. The Coalition formed in 1996 to support a common mission to provide and foster lifelong learning and greater appreciation for the arts, culture, humanities, and history.

The Cultural Coalition created [Portalwisconsin.org](http://Portalwisconsin.org), a Web site to promote arts, culture, humanities, and history in Wisconsin. Using a variety of web-based media, Portal Wisconsin serves as an electronic gateway to rich content throughout the state. Content includes a statewide events calendar, news articles, chats, online galleries, and Web links. Users are able to search for content by keyword, geographic area, interest area, and other means.

- **Solid and Hazardous Waste Education:** The Pollution Prevention Program (\$151,744) supports faculty at UW-Madison and UW-Extension who provide Wisconsin businesses and industry with educational programs that reduce hazardous waste generation. Companies have participated in one-day seminars, satellite teleconferences, trade shows, or technical assistance activities conducted by the

Center. Each year the Center staff conducts waste reduction/pollution prevention opportunity assessments at industrial plants throughout the state. These assessments provide technical information and assist the companies in establishing strategies for waste reduction. Follow-up evaluations with a number of companies have determined that Center-recommended improvements have resulted in either significant reduction or elimination of entire waste streams and substantial cost savings. The Center also cooperates with state agencies and statewide professional and business organizations to widely disseminate pollution prevention education programs.

- **Cross Divisional Program Innovation Fund:** Administered by the UWEX Vice Chancellor, the Cross Divisional Program Innovation Fund encourages innovative programming efforts with a common thread—collaboration across the various Extension divisions and units. In fiscal years 2000-01 and 2001-02, CEE collaborated in a number of projects that received grants from this fund. Two examples are listed below:

**UW-Extension's Governmental Affairs Consortium (GAC)**— The Governmental Affairs Consortium, which consists of Cooperative Extension's Local Government Center (LGC) and the campus-based continuing education offices of UW-Green Bay, Madison, Milwaukee, Platteville and Superior— received \$30,000 from UW-Extension's Cross Divisional Program Innovation Fund. With the grant, GAC developed a comprehensive, interactive, up-to-date online catalog, [www.govtraining.org](http://www.govtraining.org), of educational opportunities and services available to government managers and public officials across the state of Wisconsin. Through April 30, 2002, the site attracted 35,930 hits, 2,623 unique visitors, and 501 repeat visitors.

**Hispanic Needs Assessment:** An effort to better understand the educational needs of Hispanic people in Wisconsin, the Hispanic Needs Assessment included a workshop and creation of a demographic profile. The project, which received a \$13,000 grant, had key collaborators from CEE, Cooperative Extension, UW-Extension Small Business Development Center, UW institutions, and community agencies. The March 29, 2001 event drew 95 from UW-Extension and organizations that serve Hispanic/Latino/a people.

### C. Integrate Technology and Practice

- **UW Learning Innovations (UWLI):** CEE has continued financial support of UW Learning Innovations (UWLI), which serves UW System with the development and distribution of online credit and non-credit programs and degrees. Dean Barbara Emil serves as Executive Director of UW Learning Innovations.

**UWLI and UW-Platteville** are collaborating to offer the Extended Degree Program in Business Administration online. This program allows adults who are unable to pursue a traditional on-campus college program, the opportunity to earn a baccalaureate degree no matter where they live. Traditional curriculum is designed in



an individualized study format, allowing for self-paced completion with no on-campus attendance required.

This partnership also supports the **Master of Science in Criminal Justice**, designed to serve criminal justice and social service professionals who wish to continue graduate education or who need additional knowledge and skills to advance in their professions. The degree is offered entirely online and there is no residency requirement for completion of the degree.

The **Master of Science in Project Management** is an online program designed for working adults who want to pursue a degree while remaining employed. The program is open to anyone who holds a bachelor's degree from an accredited institution and has the desire to learn about project management. The program provides professionals with a convenient, practical, quality course of study that will allow them to develop the new skills that are needed in managing today's workplace, while earning professional development credits that lead to an advanced degree. This online degree is offered in conjunction with UW-Extension, with program design and development, faculty training, and learner support from UW Learning Innovations.

The **Master of Engineering** is an online technical degree in engineering requiring advanced course work but no thesis. Developed in response to industry needs, this program has two unique features: it includes a technical area of emphasis and is Internet (Web) based. The online format makes this advanced technical degree much more accessible to professionals working in industries within the state, region, and world. This online graduate degree is offered in conjunction with UW-Extension, via program and learner support from UW Learning Innovations.

**UW Colleges**, in conjunction with UWLI, now offers a program of online courses that can lead to an associate's degree and/or be the foundation of a bachelor's degree. This program enables students to take courses from any computer location and allows students to complete their work any time of day.

- **UWEX and UW System** are increasingly involved in projects with a technology focus. In the 2000-01 fiscal year, the division provided funding (\$34,553.27) to support the senior consultant for learning technologies research and development position, a position shared with UW System (UWS). The shared position enables partnership development, research and assessment, planning and procurement, and coordination and communication for learning technology working with industry, government, and educational information technology leaders to identify emerging technologies and select technologies for research development pilots and projects. To support the UWS Coordinator for Learning Technology Development, the Division of Continuing Education Extension has agreed to fund a graduate student in the UW System Office for Learning and Information Technology (approximately \$26,770 for fiscal years 00-01 and 01-02).
- **Workers Independent News Service (WINS):** WINS is a new initiative by the UW-Extension School for Workers. As a nationwide news service, WINS' mission is to provide to radio stations news and features focusing on organizing and bargaining

for workplace democracy, workplace issues, coalition campaigns for a living wage and other goals, unions in communities and the political arena, and workforce issues, including undocumented workers, contingent and part time workers, and immigrant workers.

- **Manufacturing Technology Transfer (MTT):** Manufacturing Technology Transfer (MTT) (\$205,888) at UW-Stout provides the means to transfer state-of-the-art manufacturing practices to small and medium size manufacturers via interaction with UW-Stout faculty, technical advisors, and students. MTT provides direct in-plant assistance in developing and applying a strategy for productivity improvement. MTT assesses a client company's manufacturing operations, technologies, and training needs and then provides educational and technical services to assist companies with improvements. As a result, these companies are able to select and apply appropriate technology, maximize employee productivity and manufacturing capacity, reduce product cost, enhance product quality and customer satisfaction, and develop and implement long term planning for sustained economic growth. MTT's goal is to stimulate economic development and job creation by enhancing the state's productive capacity and competitiveness in regional and international markets.
- **Educational Technology Project:** The Educational Technology Project (\$94,800) is located at UW-Eau Claire. This project has allowed UW-Eau Claire to develop and utilize its telecommunications infrastructure and has provided programmatic support and faculty training to serve the distance education needs of the campus. UW-Eau Claire offers freshman English composition to regional high school students, staff development for area gifted and talented teachers, and video teleconferences for staff development. Since the project began, it has developed Bachelor's and Master's in Business Administration courses that are offered over compressed video to UW-Barron County and offered nursing programs as part of the Collaborative Nursing Program.

#### D. Practice Entrepreneurial Fiscal Management

- **UW Learning Innovations Contracts:** Since the beginning of the 2001 fiscal year, UW Learning Innovations has acquired 22 different contracts with businesses, agencies, and academic institutions across the United States. Examples include IBM, US Cellular, Famous Footwear, TDS Telecom, UW System, and US Chamber of Commerce.
- **External funding for IDEAS project:** CEE has worked to obtain external funding for the IDEAS Portal Web Site project. For the 2001 calendar year, IDEAS received a grant (\$200,000) from TEACH Wisconsin. IDEAS also received a TEACH Wisconsin grant (\$53,393) for the 2002 calendar year, and a grant (\$54,045) from the Eisenhower Professional Development Program for the 02-03 fiscal year.

**E. Assess the Impact of Programs, Services, and Partnerships**

- As part of an institution-wide initiative, the division has developed guidelines and processes for evaluating and articulating the human, economic, environmental, and civic impact of continuing education programs throughout the state. Evaluation reports focus on the value that extension programs add to traditional UW courses and outreach efforts and the community partnerships that enhance the credibility and appropriateness of continuing education programs. Impact assessment initiatives contribute to program improvement while demonstrating accountability to learners and stakeholders.

To date, more than 130 people have been trained through 11 campus visits and teleconferences on how to assess the impacts of their programs and services. As a result, campuses have begun integrating impact assessment into their course and unit evaluations and have changed their course evaluation instruments.

**IV. BROADCASTING AND MEDIA INNOVATIONS**

UW-Extension has organized its digital assets in such a way as to capitalize on the convergence of broadcast and computer technologies. New and existing audiences will have access to broader and deeper content delivered through a range of technologies. There are no specifically funded legislated projects in Extension Broadcasting and Media Innovations. The following are the units major public service program areas.

**A. Broadcasting**

In partnership with the Wisconsin Educational Communications Board (ECB), the Division of Extension Broadcasting and Media Innovations produces and delivers cultural, educational and instructional programs that meet the needs of individuals, communities, and the state, using the facilities and resources of Wisconsin Public Broadcasting. WHA-TV and WHA-Radio, licensed to the Board of Regents, serve the south central Wisconsin area, and provide educational production facilities and support for faculty in Extension and at institutions located throughout the state. There are 826,700 households that view Wisconsin Public Television each week. Wisconsin Public Radio reached 350,900 listeners each week. Every GPR dollar invested in Wisconsin Public Broadcasting leverages \$3.00 from other sources.

**B. Media research and experimentation**

**1. Broadband Technology**

UW-Extension Broadcasting and Media Innovations is using Internet 2 to experiment with and demonstrate the use of Internet 2 protocol to deliver video programming for preview and broadcast to University licensed television stations.

## **2. Media Asset Management**

Wisconsin Public Television is experimenting with Virage and Mediasite software to create video indexing systems that allow the user to identify and search for video pieces by subject. This video indexing works in much the same way an Internet search engine allows the user to search for information by key word. An operational prototype of a searchable video archive comprised of video assets relating to Wisconsin history, will soon be made available to a test group of teachers.

## **3. Interactive Television**

UW-Extension and Wisconsin Public Television are using Web-TV technology to create interactive programming. Web addresses (URLS) are placed in the line 21 portion of the video signal that can be read by the Web TV Plus box to create an interactive television experience. UW-Extension is using this technology to connect our public television viewers to additional university content. While watching interactive television programs, users can access additional content resources related to the subject of the program.

## **V. BUSINESS AND MANUFACTURING EXTENSION**

Although there are no specially funded legislated projects in Business and Manufacturing Extension and its Small Business Development Center, the following are some of the unit's program areas.

### **A. Small Business Development Center (SBDC) Network Expansion**

The Small Business Development Center continues to leverage its services to Wisconsin's business community by initiating creative partnerships with both campus and community economic development leaders.

- The UW-Green Bay SBDC increased its visibility and became part of a single-source education and service group in Green Bay, known as the Business Assistance Center (BAC). By moving off campus and locating with other service providers, the SBDC is more accessible to new and growing businesses in northeast Wisconsin. This is part of a three-year trend in which the SBDC has enhanced its outreach by either relocating counselors in the business community, or establishing multi-county circuits for its counselors. This has now occurred with six of the 12 UW campuses that are partners through the UW-Extension state SBDC office.
- The UW-Whitewater SBDC has established a counseling service presence in Beloit, one of the state's most economically-stressed areas, and one in Waukesha County, the state's fastest-grow county numerically. These offices are staffed by experienced counselors who bring a strong business

development perspective to the unique public service challenges that these two areas face.

- SBDC State Director Erica Kauten is in discussion with leaders at UW-Stout about the possibility of establishing a "specialty" Small Business Development Center associated with the campus. This is in keeping with the observed trend of the state's entrepreneurs requiring more specialized services in a new technology-dominated era.

## B. Emerging SBDC Partnerships

In classic extension tradition, the SBDC has initiated partnerships with state and federal agencies, to enrich its suite of services to the state's entrepreneurs.

- **Wisconsin Department of Commerce -- Entrepreneurial Training Grants**  
This program encourages business formation and expansion in Wisconsin by providing 75% reimbursement for tuition cost of an SBDC entrepreneurial training program. Components include classroom course work, individual counseling and coaching, completion of a comprehensive written business plan, and -- where indicated -- helping the client toward readiness for business financing. Participants in this program are selected on the basis of their potential to support a business or business expansion idea. The Commerce Department provides the grant funding for the program and the SBDC does the administration, training and counseling. To date, 597 entrepreneurs have been awarded \$414,839 in grants, and are in various stages of the program.

- **Small Business Innovation Research Outreach (FAST Program)**  
The SBDC has developed a statewide Small Business Innovation Research (SBIR) outreach effort that links small businesses to federal research and development (R&D) funding sources. The Federal and State Technology Partnership (FAST) program has provided the SBDC with funding to facilitate a partnership between the SBDC, the U.S. Small Business Administration, Wisconsin Department of Commerce, UW-Madison University Industry Relations, and the Wisconsin Small Business Innovation Consortium. Through this new initiative, partners developed a FAST Assistance Network supportive of SBIR and other federal agencies' programs that invite small business R&D proposal preparation.

The FAST Program's objectives are to stimulate technological innovation, use small businesses to meet federal R&D needs, encourage the participation by disadvantaged and minority persons in technological innovation, and increase private sector commercialization derived from federal R&D. The SBIR programs fund research and development efforts of a high-risk nature that have commercial potential. The grant provided funding for a UW-Extension SBDC FAST Outreach Specialist who works out of the Wisconsin Department Commerce's Office of Science and Technology.

**C. Expansion of SBDC Services**

To facilitate the changing needs of "next economy" business entrepreneurs, the SBDC develops services that target emerging business needs, concentrating on those that will result in better-paying "brain gain" career opportunities. Two examples are presented below:

• **Equity Financing Opportunities Expanded**

To stimulate equity financing in high-growth companies, the SBDC partnered with economic development professionals and key leaders in the private sector to present a special educational program, "Understanding and Acquiring Equity Financing." This highly successful program was offered in Madison and Appleton, and featured a dozen distinguished speakers and panelists. They included an angel network representative, the Wisconsin Department of Commerce, bank president, venture capitalists CPAs, attorneys, and representatives from successful growth firms.

The SBDC network representatives have also been actively involved in interfacing with local angel networks, especially in Eau Claire, Green Bay, La Crosse and Madison. An SBDC representative also participated in the planning of the March 2002 Governor's Summit on Capital, and served as a panelist on a summit session titled "Venture Capital Basics."

• **Wisconsin Technical Information Partnership**

The SBDC has partnered with the University of Wisconsin-Madison Libraries and several others to create the Wisconsin Technical Information Partnership (WisTIP). It provides information delivery services to Wisconsin businesses and is designed specifically for entrepreneurs and business owners of technology companies. WisTIP offers companies the world of science, engineering, business, medical and law literature, drawing on one of the largest research library collections in North America. Components include delivery of documents, book loans, on-line literature and preliminary patent and trademark searches. Grants up to \$500 are available for qualified businesses to access the program. A web site with a simple application form has been developed. Other WisTIP partners include: U.S. Small Business Administration, University of Wisconsin-Extension, Wisconsin Department of Commerce, and the TechSearch service of the UW-Madison College of Engineering.

**D. Research - Statewide Economic Development Needs Assessment**

The SBDC State Office partnered with the Wisconsin Economic Development Association and the Wisconsin Economic Development Institute in a significant needs assessment through regional focus groups and an email survey. The majority of the 81 survey participants were local economic development professionals. Focus of this research was on economic development services to Wisconsin's "high economic impact" businesses. The significant finding is that

there is wide recognition of unmet needs for early stage and equity financing for growth businesses, most notably in the "early seed capital" stage.

**VI. OTHER UW SYSTEM INSTITUTIONS**

UW institutions other than UW-Extension manage \$19.0 million in extension and public service funds. Most funds are at UW-Madison, where they support the State Laboratory of Hygiene, the Wisconsin Veterinary Diagnostic Laboratory and other ongoing programs in the School of Veterinary Medicine, the State Cartographer's Office and the LaFollette Institute.

Other programs at UW System institutions support institution-based extension program activities, public service radio station operations and programming, community service forums and programs, and business awareness and development outreach efforts in communities.

The largest non UW-Extension program is the State Laboratory of Hygiene (\$5.8 million), which provides highly complex laboratory testing services.