

The University of Michigan  
Regents Communication

Approved by the Regents

November 20, 2008

Action Item

Attached is a copy of the annual operating request to the State for the University of Michigan-Ann Arbor campus for FY 2010 for your approval.

Respectfully submitted,

A handwritten signature in cursive script, reading "Teresa A. Sullivan", is written over a solid horizontal line.

Teresa A. Sullivan  
Provost and Executive Vice President  
for Academic Affairs

November 20, 2008  
Attachment



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November 21, 2008

Mr. Robert L. Emerson  
State Budget Director  
State of Michigan  
111 S. Capitol  
Post Office Box 30026  
Lansing, Michigan 48909

Dear Mr. Emerson:

I am responding to your invitation to provide information to the State in support of the fiscal year 2010 budget development process for the University of Michigan – Ann Arbor. We continue to strive for a budget that strongly supports our commitment to the academic excellence of the institution and access and affordability for our students. At the same time, we focus on prudent and responsible financial planning, ensuring our ability to be careful stewards of public resources. In this letter you will find information about our general fund revenues and expenditures, our major initiatives and our continuing efforts to contain costs at the Ann Arbor campus.

We face budgeting challenges that are similar to those we have faced in recent years. We operate in an extremely competitive environment for faculty, students, staff and research dollars while our revenue situation remains precarious. We recognize that the State continues to face difficult and uncertain financial circumstances that require hard decisions and thoughtful prioritization of resources, yet we believe that strategic investment in higher education is essential to the future vitality of the State and its economy. While we anticipate that it will remain difficult for the State to make material increases in spending on higher education over the next few years, we respectfully request progress in the fiscal year 2010 budget toward the restoration of our fiscal year 2002 level of funding and encourage consideration of a longer-term strategic investment plan for the higher education institutions in the State.

The University of Michigan continues to rank in the very top tier of the nation's research universities and is one of only a select few in that group that embraces a public mission. The most recent rankings show the University of Michigan with dozens of top ten schools, department and programs. The Times of London recently listed the University of Michigan as the 18<sup>th</sup> best university in the world and the top-ranked public university in the nation. Members of our faculty again received the most prestigious external awards for their exceptional teaching

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and research. This year, for example, an anthropology professor was elected to the National Academy of Sciences, two engineering professors were elected to the National Academy of Engineering, a political science professor was named a 2008 Carnegie Scholar, five faculty members were elected to the American Academy of Arts and Sciences, and seven faculty members were named Guggenheim Fellows. In addition, we continue to attract extraordinary students – the median high school GPA of our entering class of first-year students this fall was 3.8. The University of Michigan once again led the nation in the number of U.S. Department of State Fulbright award recipients; this is the third time in the past four years that Michigan has topped the Fulbright awards. To maintain this level of excellence, the University must compete successfully with other top universities, both public and private, for faculty and students. Excellence requires continuous investment in faculty recruitment and retention, programmatic initiatives, financial aid, student services and facilities.

Student access and affordability remain top priorities for the University. Regard for our public mission drives us to put in place financial aid policies that will allow every admitted Michigan resident to attend the University of Michigan, regardless of financial means. In addition to centrally awarded financial aid, our academic units also award need-based scholarships, which reduce dollar for dollar the loan and work-study amounts for our students. Furthermore, the President's Donor Challenge and the accompanying matching program have raised over \$60 million in endowment for need-based undergraduate financial aid. Ultimately, this program will provide approximately \$3 million in new base funds for financial aid, a figure that will grow with the market value of the endowment. At the same time, the M-Pact Program, launched over four years ago, continues to provide additional need-based grants to Michigan residents. These and other programs enable the University to reaffirm its commitment to our long-standing policy of meeting the full demonstrated need of every Michigan resident undergraduate. As in the case of ensuring excellence, keeping the University accessible and affordable requires sustained investment of new resources.

In our budget request below, we will once again describe the numerous steps we have taken to contain costs and reduce expenditures. These efforts have proven more and more difficult, as continued growth in the general fund is essential if the University's quality, measured through excellence and access, is to be maintained and strengthened. As you know, the main sources for the University's general fund are the state appropriation and tuition, and the link between state support and tuition increases is unmistakable. In fiscal year 2002, the state appropriation made up 35 percent of the University of Michigan – Ann Arbor's General Fund budget; in fiscal year 2009, this proportion is just 23 percent. If the state appropriation remains flat or declines further, additional expenditure reductions along with considerable tuition growth will be necessary. The preservation and advancement of the University's excellence, and our ability to contribute to the stabilization and growth of the Michigan economy, become increasingly more difficult as the level of expenditure reduction increases.

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### **Regional Economic Impact**

We know that the state recognizes the crucial role that higher education in general, and the state's research universities in particular, can play in transforming Michigan's economy. An independent analysis released in September showed that Michigan's University Research Corridor (URC) partners generated over 69,250 Michigan jobs, educated more students than any of the country's comparable R&D clusters, and produced \$13.3 billion in economic impact in 2007. The report found that the URC is an active partner in developing and attracting new growth industries like green technology, alternative energy, life sciences, IT and nanotech and that the research universities accounted for 94 percent of federal academic research dollars brought into Michigan. The University of Michigan's research and development expenditures, from federal sources and all other sources, consistently rank among the nation's top five research universities, further demonstrating both our excellence and our importance to the future of the State of Michigan. Research spending at the University of Michigan reached \$875.8 million in 2007-08, an all-time high and a 6.4 percent increase over the previous year.

Technology transfer, a key component of our overall economic development agenda, remains an integral part of our research mission. The University of Michigan licensed 13 new business startups in fiscal year 2008, tying a record set four years ago. Over the past five years, the University has helped launch 49 startups; more than 70 percent of them are located in Michigan. In fiscal year 2008, University of Michigan researchers disclosed 306 new inventions, and the University negotiated 91 technology agreements. Fiscal year 2008 results also include 144 U.S. patent applications and 87 issued patents. Revenue at the University of Michigan Office of Technology Transfer rose to an all-time high of \$25 million during the last fiscal year, with over half of the income coming from royalties. This income fuels ongoing reinvestments in research, technology transfer and industry-outreach activities. These results demonstrate our continued progress in leveraging the research and educational capabilities of our institution to benefit the region and the State of Michigan.

With the help of a new program offered by the Stephen M. Ross School of Business and its Zell Lurie Institute for Entrepreneurial Studies, we hope that more ingenuity will translate into commercial success. The MBA Essentials and Entrepreneurship program, scheduled to begin in January 2009, is intended to provide the University of Michigan's innovative thinkers in all fields with business fundamentals and entrepreneurial insight. The program will complement existing resources at the University that operate at the intersection of breakthrough ideas and commercialization. This is an exciting addition to the University's robust commitment to bringing creative ideas into the marketplace in the State of Michigan and beyond.

In addition, the University invested in the creation of a central, highly visible focal point for relationships between campus units and key industry and entrepreneurial partners. The Business Engagement Center opened in May and provides one-stop shopping for businesses seeking

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student talent, university expertise, and professional development for employees and research partnerships. The Center is working with the University of Michigan's Office of Technology Transfer to strengthen the university's ties to business and community partners while helping to revitalize and diversify the state's ailing economy. In addition, our Institute for Research on Labor, Employment and the Economy (IRLEE) continues to work to understand and provide assistance to enterprises during the economic transformation.

### **Cost Containment Efforts**

Your letter specifically asked for information regarding our cost containment efforts. The University of Michigan continues to be challenged by several factors including rising facilities and benefits costs, a highly competitive faculty recruitment and retention environment, and flattening federal support for research. A key to our success during this difficult financial period has been our ability to contain costs, reduce expenditures and reallocate within the General Fund budget. We incorporate an assumed level of reduction and reallocation (typically 1.5-2 percent of the budget) in each year's General Fund budget proposal.

As a result of this effort in putting together our annual budgets over the past five years, we have succeeded in removing nearly \$120 million in recurring General Fund expenditures through a combination of increased efficiencies, elimination of lower priority activities and moving expenses from the General Fund to other funds. We have incorporated additional reductions/reallocation in the FY 2009 budget, bringing this total to over \$135 million over a six-year period.

This practice of reducing General Fund expenditures by 1.5-2 percent to enable innovation and to moderate tuition increases is one that we intend to continue in our future budgetary planning. However, consistently cutting and reallocating at a level higher than our rate of new investment could jeopardize the quality of the institution and requires careful monitoring. In seeking efficiencies from our units, we have adopted the following principles:

- Protect and invest in our core educational and research missions
- Remain competitive for the best faculty/staff/students
- Leverage our size and scale
- Maintain high quality essential services
- Eliminate duplicate and lower priority activities
- Shift costs from the General Fund to other funding sources, where appropriate
- Avoid short-term reductions with long-term cost and/or quality implications
- Introduce centralization and greater sharing of resources in cases where this will result in higher quality services and/or more effective use of high quality facilities

- Consider insourcing and outsourcing when that leads to improvements in service at the same or lower costs
- Take advantage of advanced technologies to achieve efficiency of operations

These principles direct us to pursue a broad range of strategies to achieve cost reductions and long-term efficiencies in our operational areas. Within that general framework, we have focused our cost containment efforts on the seven areas listed below.

1. Purchasing

- Using the University's scale as a purchaser to negotiate strategic supplier contracts with favorable pricing
- Renegotiating existing contracts with better terms
- Choosing to self-insure in select areas so as to achieve the full financial benefit of risk-reduction programs and investment opportunities with insurance reserves

2. Energy Efficiency

- Putting in place efficient campus systems using regional planning to produce steam, electricity and chilled water
- Constructing new buildings and retrofitting existing facilities so as to achieve a high level of energy efficiency
- Encouraging positive behavioral changes to reduce energy consumption through building by building energy audits

3. Health Benefit Strategies

- Putting programs and incentives in place to improve the overall health of our community
- Aligning our benefit offerings with the market and ensuring the appropriate level of cost sharing with the employee
- Structuring our plans to result in optimal utilization of health care, including the use of incentives

4. Leveraging Information Technology

- Using technology to create business process efficiencies
- Creating robust business intelligence tools to enhance data driven strategic decision-making

5. Other Revenue Sources

- Utilizing gift funds and investment proceeds to relieve the General Fund
- Increasing external research support through investments in strategic areas
- Developing more effective partnerships with business and industry

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6. Greater Productivity of Staff

- Constantly reprioritizing effort, reallocating resources and improving overall productivity levels – doing more with less

7. More Efficient Utilization of Space and Facilities

- Adding stricter criteria and discipline to the prioritization of major capital projects
- More fully utilizing classrooms and other instructional spaces
- Campus-wide sharing of high technology facilities

The attached document, "*The University of Michigan – Ann Arbor, Cost Containment Efforts*", provides detail on our activities to date, as well as, a discussion of future efforts relative to each of the seven strategies. It can also be found on our website at [www.provost.umich.edu](http://www.provost.umich.edu).

**Expected Expenditure Budget 2010**

We are now beginning the process of planning for fiscal year 2010 and are several months away from building the budget.

In FY 2002 (and FY 2003), the University of Michigan state appropriation was \$363 million for the Ann Arbor campus. The FY 2009 appropriation is \$327 million, a base reduction of \$36 million or 10 per cent over this time period. Using CPI inflated dollars the magnitude of this difference grows to over \$100 million in reduced purchasing power. This reality as well as the financial challenges associated with maintaining and advancing the University's excellence and ensuring access for our students result in a precarious budget situation.

Meanwhile, the volume of our activity has been increasing. Total headcount enrollment has increased over 5 percent since the fall of 2002, and the volume of research has increased 17 percent. At the same time, the number of general fund FTEs has grown by less than 1 percent - providing evidence of our efforts to do more with less.

Our ability to be a leading research university rests squarely on our ability to maintain a community of great scholars. Great faculty members translate into attracting great students, obtaining more grants and awards, and carrying out research, innovation and creativity that betters society. Recruitment and retention of outstanding faculty and students remains our number one priority, and the competition for faculty is fierce. Last year, we announced that the University would invest \$30 million to encourage the hiring of 100 new tenure-track faculty members, especially in areas that advance the University's major teaching and research initiatives such as alternative energy and environmental sustainability. Several hiring proposals have been

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approved and the units involved are in the process of searching for the appropriate faculty members. Two examples of faculty clusters that align with high priority areas for University development are:

1) Data Mining

Given the overwhelming amount of information that exists, the next challenge is to extract knowledge from information. This effort will involve the development of automatic knowledge-extraction tools using complex computationally-based discovery techniques and tools and will include the Departments of Astronomy, Computer Science, Ecology and Evolutionary Biology and Statistics.

2) Energy Storage

The inability to more effectively store energy leads to massive waste and reliance on energy forms that produce greenhouse gas emissions. Other energy sources (such as wind and solar) rely on cycles of nature and are not reliable without storage. This effort will focus on key areas with emerging technologies (electrochemical energy storage, solid state hydrogen storage and storage of energy in mechanical systems), and will involve the College of Engineering, the School of Natural Resources and the Environment and the Chemistry Department in the College of Literature, Science and the Arts.

In fiscal year 2009, we once again made investment in financial aid a top priority for the institution's resources. Centrally awarded financial aid increased by more than \$8.5 million to a new total of nearly \$107.6 million, representing an 8.6 percent increase in financial aid. Specifically for undergraduates, this equates to an increase of nearly \$6.7 million, a 10.8 percent increase. This aid is added to other University sources of financial aid, including scholarships supplied by the schools and colleges and those supported by private funding, and reflects the fact that no other Michigan public university comes close to providing the financial aid that we do for the most needy students. Moving forward, we will continue to support and expand financial aid, guided by our long-standing practice to provide the full demonstrated need of every Michigan resident.

Given the increasingly international nature of the world, it is more important than ever for students and faculty to be actively engaged in global issues. The URC continues to work to expand research related to alternative energy. The recently released report referenced earlier showed that the URC conducted \$79.5 million in alternative energy R&D in 2007, and that number is expected to grow. Furthermore, in prior years I discussed the establishment of the Michigan Memorial Phoenix Energy Institute (MMPEI), which significantly expands our efforts in energy research by leveraging existing programs in nuclear engineering and automotive

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engineering, as well as, our long-standing industry partnerships, to make a real difference in areas such as advanced nuclear power systems, solar power, hydrogen technology, fuel cells, battery research and low power electronics.

The University will continue to place a high priority on academic programs that promote globalization and international experiences for our students and faculty in order to better prepare tomorrow's students for a more culturally diverse and more cooperative world. Over the next few years, we seek to double the number of University of Michigan students who take advantage of study abroad programs. In early 2008, I visited Ghana and South Africa to promote partnerships between African universities and the University of Michigan. At the same time, the University launched an African Studies Center as part of the International Institute to support research in that area on campus. The Joint Institute supported by the University of Michigan and Shanghai Jiao-Tong University in China is thriving and has admitted its second class of students. Growing numbers of University of Michigan students and faculty are spending time at the Joint Institute, and transfer students from the Joint Institute arrived at the College of Engineering this fall.

In addition, made possible by the generosity of a gift from Ronald and Eileen Weiser, the International Institute in the College of Literature, Science, and the Arts at the University of Michigan will establish programs for emerging democracies. The Ronald and Eileen Weiser Center for Europe and Eurasia will serve as an umbrella organization of the Center for Russian and European Studies, the Center for European Studies-European Union Center and a newly formed Center to be known as the Weiser Center for Emerging Democracies. These efforts will promote deeper understanding of this complex and dynamic region of the world at a time when such knowledge is essential to preparing students to engage in the global economy.

The University is launching a new Cryo electron microscopy (CryoEM) laboratory in its Life Sciences Institute. CryoEM is a state of the art method for seeing large biological objects in exquisite detail in their natural environment - an ability that is the key to progress in biomedical science. This technology is enabled by powerful new microscopes, methods to freeze-trap specimens in their native state, and powerful algorithms for image analysis that combine thousands of weak images into a high-quality 3D image. The research is truly multi-disciplinary, combining cell biology, molecular biology, physics and computer science. The University has recruited its first faculty member in the CryoEM area from Harvard University. Only a few universities in the country have these facilities and our laboratory will capitalize on the expertise and resources that already exist on the Ann Arbor campus in structural biology, biophysics and cell biology.

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Investment in the Arts remains a priority, as the University of Michigan is positioned to ensure that our students and faculty are well equipped to excel in creative practice across a variety of fields. We have made investments in our professional arts schools, the Museum of Art and the University Musical Society in the form of faculty recruitment and retention, programmatic initiatives and facilities enhancements. The Museum of Art Alumni Memorial Hall expansion and restoration project, primarily funded through gifts, will more than double the Museum's physical space. This expansion will enable the Museum to better accommodate temporary exhibitions, lectures, concerts, classes, and community meetings through substantial new gallery space; state-of-the-art collections storage and "open" storage for greater public accessibility; a print study room; Asian conservation lab; auditorium; University classrooms and art-making facilities; an expanded Museum shop; and improved visitor amenities and public gathering spaces.

Improved and advanced facilities serve as a foundation for both the research and instruction that enable the University and its graduates to stay at the forefront of excellence. Without first class facilities, we cannot sustain the external research support and superb student quality that are essential to our mission. In many cases, facilities are key to the success of a particular initiative by enabling us to perform cutting edge research and instruction. A good example of this is the expansion of the Lurie Nanofabrication Facility (LNF) clean room, which will result in a leading edge facility for research and new micro-fabrication techniques. Faculty and students use the LNF to conduct research on the theory, design, and fabrication of electronic, optoelectronic devices, circuits, and microsystems, as well as, on organic devices, novel characterization and metrology techniques and nanofabrication technology. Eighteen local and regional companies also used the facility, which serves as a unique asset for the state's businesses. In addition, the work conducted on our facilities creates jobs for our community. For fiscal year 2008, construction work on campus will support approximately 1,700 FTE outside contractors, consisting of primarily skilled trades workers. Many of these projects are funded by clinical revenue and gifts, and this effort is projected to increase to over 2,000 FTEs over the next three years.

### **Funding Request**

Constraints on revenue growth over the past several years, as well as, significant increases in essential costs contribute to our budgetary challenge. Apart from the aforementioned commitments to faculty excellence, student access and programmatic initiatives, we must respond to the demands of rising costs of all of our operations. On the expenditure side, we are subject to increases beyond the normal forces of inflation. We are a labor-intensive organization, compared to much of the overall economy, and the costs of labor generally rise faster than other prices. Our projections anticipate significant increases in benefits costs over the next several

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years, so we will need to continue to be prudent in our financial planning. Additionally, investments in equipment, facilities and technology are a necessary component of our budget strategy if our teaching and research enterprise is to remain competitive and if we are to prepare students to help Michigan compete in today's knowledge economy.

To achieve our mission and to advance the excellence of the institution, we must maintain a focus on the future. Despite funding challenges, we must continually innovate so that the topics we study, and the methods we use to create knowledge, remain at the cutting edge. Over the past several years, we have relied heavily on internal reallocation and cost containment to meet the demands of rising costs and simultaneous reductions in state support. We will continue these efforts, but they will be insufficient by themselves to allow us to meet the demands of rising costs and new investments.

Again, we acknowledge the fiscal circumstances of the State. Nevertheless, the University of Michigan is an essential component in the stabilization and revitalization of the Michigan economy. We also play a critical role in the development and education of our workforce and cannot risk jeopardizing the quality of our instruction, research and service. Our current state appropriation is 10 percent less than the appropriation we received in fiscal year 2002. At the same time, our activity levels have grown, and the competition we face for the best students and faculty has increased.

We believe you would agree that maintaining our position as one of the most prestigious research institutions in the world is essential to the future of both the University and the State of Michigan, particularly given the contribution that the University of Michigan is making to the economic recovery in the State. Excellence in teaching and research and enabling access to our students require resources, and we respectfully ask that the State reinvest in higher education, particularly our research Universities, by progressing toward restoring our appropriation to fiscal year 2002 levels.

Sincerely,

A handwritten signature in black ink that reads "Mary Sue Coleman". The signature is written in a cursive, flowing style.

Mary Sue Coleman  
President

MSC/ALB/plk  
Enclosures

## **The University of Michigan – Ann Arbor Cost Containment Efforts**

### **Introduction**

Over the last five years, the University of Michigan has demonstrated remarkable resilience in the face of intense financial pressures. On the revenue side, we have seen an unprecedented decline in our state appropriation. Our FY2009 budget incorporates a state appropriation of \$327 million, a 1% increase. This allocation puts our state appropriation at a level that is \$36 million lower than the amount that was appropriated for FY2002, in nominal dollars, and over \$100 million lower in inflation-adjusted dollars. On the cost side, we have seen sharp increases in both energy and health care costs as well as the need to compete directly for faculty and students with lavishly endowed private universities. Despite these pressures, the University of Michigan has continued to mount competitive salary programs, invest heavily in financial aid, launch significant new initiatives and achieve notable success in recruiting and retaining excellent faculty.

A key to our success during this difficult period has been our ability to contain costs, reduce expenditures and reallocate within the general fund budget. The University's ability to invest strategically in our future requires us to aggressively focus on cost containment as part of our annual budget/planning process. Thus, we incorporate an assumed level of reduction and reallocation (typically 1.5-2% of the budget) in each year's general fund budget proposal.

As a result of this effort, in putting together our annual budgets over the past five years, we have succeeded in removing nearly \$120 million in recurring general fund expenditures through a combination of increased efficiencies, elimination of lower priority activities and moving expenses from the general fund to other funds. We are planning for additional reductions/reallocation in the FY2009 budget, which will bring this total to over \$135 million over a six-year period. Reallocation strategies have been implemented across the University including University-wide improvements in areas where operations are centralized and in the academic units. In what follows, we describe our overall approach to cost reduction/containment and give examples of notable successes.

## Cost Pressures at Research Universities

The cost of doing business at a university follows a higher trajectory than it does in the rest of the economy, and research universities are especially subject to cost increases beyond the normal forces of inflation. We can identify four factors contributing to cost increases that have significant impact at a top research university like the University of Michigan.

- (1) Teaching and research are more labor-intensive than most activities in the economy, and it is generally the case that the costs of labor rise faster than other prices. In addition, UM is engaged in a fierce national competition for faculty and high-level professional staff with elite private universities who have very substantial resources that they can bring to bear on recruitment and retention. Consequently, the University's costs for salary and benefits (which make up 66% of the most recent fiscal year's expenditures) grow at a rate that is substantially higher than inflation.
- (2) Universities make substantial investments in a broad range of new technology and facilities in order to conduct leading-edge research and prepare students adequately for careers in a full spectrum of fields. These are costly investments that typically do not reduce costs, increase revenues or create efficiencies. Companies, by contrast, make technology investments that support their business and create efficiencies or enhance revenue flow. One instructive example is the recently completed Lurie Nanofabrication Facility. This cutting edge cleanroom facility cost the University nearly \$50M to construct and will cost another \$25M to equip. It delivers a superior technical capability to our faculty and students, and to regional businesses, allowing them to operate at the frontier in this area. Only one or two other research universities can boast a facility that rivals this one, so it not only advances the academic work on our campus but it also helps us attract excellent faculty and students to the University and high tech businesses to our region. For those academic reasons, it is well worth the significant investment; however, the facility will not substantially add to revenue or reduce costs for the University.
- (3) The volume of activity (both research and instruction) continues to rise further driving up costs. Over the past six years the number of students at UM has grown by over 5% and our research volume has grown by 17%. This growth leads to commensurate expansion of work and infrastructure needs.
- (4) Beyond the growth in levels of activity, it is important to recognize that the sum of human knowledge and creative expression grows every year. The University, unlike most private enterprises, has an obligation to preserve the past as well as to invest in the future. We are museum, library, and laboratory as well as classroom. The costs of museums and other repositories of knowledge grow in part because their collections grow, and the cost of staying on the cutting edge is always high. For example, the University Library contains one of the nation's finest collections, a collection that serves as a crucial resource for our faculty, students and public in the State of Michigan. To maintain the value of this collection, we must retain its current content and add new knowledge and materials each year. To accomplish this, it has been necessary to increase the budget for Library collections by an annual average of 2.6% since fiscal year 2003.

## **Cost Containment Principles and Strategies**

This practice of reducing general fund expenditures by 1.5-2% to enable innovation and to moderate tuition increases is one that we intend to continue in our future budgetary planning. However, consistently cutting and reallocating at a level higher than our rate of new investment could jeopardize the quality of the institution and requires careful monitoring. In seeking efficiencies from our units, we have adopted the following principles:

- Protect and invest in our core educational and research missions
- Remain competitive for faculty/staff/students
- Leverage our size and scale
- Maintain high quality essential services
- Eliminate duplicate and lower priority activities
- Shift costs from the general fund to other funding sources, where appropriate
- Avoid short-term reductions with long-term cost and/or quality implications
- Introduce centralization and greater sharing of resources in cases where this will result in higher quality services and/or more effective use of high quality facilities
- Consider insourcing and outsourcing, when that leads to improvements in service at the same or lower costs
- Take advantage of advanced technologies to achieve efficiency of operations

These principles direct us to pursue a broad range of strategies to achieve cost reductions and long-term efficiencies in our operational areas. Within the academic enterprise, these principles direct us to take actions, like the elimination of duplicate activities and the better alignment of high-end facilities with campus needs, which create efficiencies while avoiding negative impacts on teaching and learning.

Within that general framework, we have focused our cost containment efforts in seven key areas.

### 1. Purchasing

- Using the University's scale as a purchaser to negotiate strategic supplier contracts with favorable pricing
- Renegotiating existing contracts with better terms
- Choosing to self-insure in select areas so as to achieve the full financial benefit of risk-reduction programs and investment opportunities with insurance reserves

### 2. Energy Efficiency

- Putting in place efficient campus systems using regional planning to produce steam, electricity and chilled water
- Constructing new buildings and retrofitting existing facilities so as to achieve a high level of energy efficiency
- Encouraging positive behavioral changes to reduce energy consumption

3. Health Benefit Strategies
  - Putting programs and incentives in place to improve the overall health of our community
  - Aligning our benefit offerings with the market and ensuring the appropriate level of cost sharing with the employee
  - Structuring our plans to result in optimal utilization of health care
4. Leveraging Information Technology
  - Using technology to create business process efficiencies
  - Creating robust business intelligence tools to enhance data driven strategic decision-making
5. Other Revenue Sources
  - Utilizing gift funds and investment proceeds to relieve the general fund
  - Increasing external research support through investments in strategic areas
  - Developing effective partnerships with business and industry
6. Greater Productivity of Staff
  - Constantly reprioritizing effort, reallocating resources and improving overall productivity levels – doing more with less
7. More Efficient Utilization of Space and Facilities
  - Adding stricter criteria and discipline to the prioritization of major capital projects
  - More fully utilizing classrooms and other instructional spaces
  - Campus-wide sharing of high technology facilities

The sections that follow provide detail on activities to date and future efforts relative to each strategy.

## Accomplishments FY2004 - 2008

As noted earlier, the University has achieved reductions and reallocations of nearly \$120 million during the last five years and has contained costs in significant ways. In this section, we highlight some of the more effective cost reduction and containment measures, organized into the themes identified in the previous section.

### 1. Purchasing Strategies

The University of Michigan is a major purchaser of a wide variety of products from scientific equipment, to software licenses, to telephone services, to credit card services. Due to our scale, vendors find the University to be a very attractive customer, which has allowed us to negotiate favorable rates with preferred vendors in a number of different areas. We also have reviewed our organizational structure and processes in order to streamline the procurement process.

Beginning in March of 2005, Procurement Services embarked upon a Reorganization Initiative aimed at streamlining the procurement of goods and services, reducing overall costs to the University and improving quality of service provided.

- The first and most significant in the series of initiatives was the closure of MStores, our large inventory and distribution operation. MStores sales were approximately \$70 million annually. Commodities that were stored here included: food, paper and computer supplies. In addition to storage, MStores “redelivered” office supplies from OfficeMax, which were cross-docked at this facility. All of these products are now delivered directly to the end user by the vendor, at no additional cost to campus. In fact, this closure resulted in a \$1.1 million overall savings to the University. This savings is calculated through the elimination of inventory carrying costs, reduction in product costs, and salary savings of 72 employees – of whom 97% were placed in open positions throughout the University, primarily on non-general fund sources.
- The second significant initiative was the restructuring of the Print Copy Mail operation. This reorganization eliminated 5 management level FTE’s. This enabled the Print shop to reduce off set print prices by 20%, and has placed them into a more competitive pricing arena with local companies with whom they compete for University business. In addition, the Copy Centers were able to reduce their cost per copy prices to compete with outside suppliers. This unit has made numerous process improvements, which include a redesigned website, and efficient and consistent order estimation, and has completed a detailed customer survey. These customer survey results actually brought about Print Copy Mail winning a National Award from the National Association of Print Leadership, for

their survey scores for customer service. For the first time in three years, this unit covered its operating costs without “dipping into their reserve funds”; this is a huge accomplishment in this competitive environment. This restructuring resulted in \$255K annual savings in salary costs.

A continuing initiative in Procurement Services is the growth of the Strategic Supplier Program and University-wide Contracts. Procurement seeks consistency of pricing and service for all University units when contracting with suppliers and implements streamlined ordering and payment methods to gain greater visibility into our spend. This visibility enhances our leverage on a go-forward basis for future contracts and provides improved predictability about future costs. Since 2000, the Strategic Supplier Program has grown from 18 suppliers to over 100 suppliers. In the past two years alone we have added or "re-bid" 80 of these contracts. Total spend with these tightly controlled and electronically enabled contracts totaled \$164 million in FY2007. Some of the benefits of these contracts include: improved pricing, ranging from 2 - 12% reductions in price; streamlined procurement administration; and cash rebates for quick payment (2% net 10) totaling approximately \$2 million annually, which are used to fund the strategic procurement operation and an ever increasing portion of Procurement Services. All of these strategic contracts include streamlined ordering and invoicing processes and many orders are processed via an on-line procurement catalog. Some recent highlights of this program include: Computer Peripherals resulted in \$610K in annual savings; Food resulted in \$526K in annual savings; and Materials, Repairs and Operating Supplies (MRO) resulted in \$30K in annual savings.

- The Computer Peripherals contracts were awarded to two suppliers. The first, CDW-G, a large business, who in the previous year had nearly \$1M spend annually via our PCard program. Procurement Services specifically targeted this commodity to move this large spend away from the PCard into our online catalog environment in order to gain greater procurement detail and reduce transaction costs. A significant impact of this targeting was the product cost savings of 24%, or \$480,000 annually. This process change not only moved the \$1 million annual spend from PCards and eliminated over 1,500 PO invoices, but CDW-G's volume is now \$3 million annually and the University only processes 12 invoices per year. Sixty percent of these orders occur via U-M's online catalog.
- The second vendor who was awarded a Computer Peripherals contract was JEM, a certified Woman-owned Business Enterprise. This contract resulted in product cost savings of over \$130K annually. In the first year, JEM's annual sales to the University grew from \$150K annually to over \$2 million. The competitive pricing on these contracts and the ease of use have attracted campus use away from “one off purchases” to unified contract use.
- The Food contracts were largely initiated due to the closure of MStores and the movement to direct-to-customer delivery. Procurement Services worked very closely with Housing to negotiate a contract that ultimately resulted in \$526K in annual savings; this movement to one prime contract from over 42 individual

contracts also reduced the number of invoices to process by 3,723 invoices per year. FY2007 spend was over \$6 million and provided \$300K in savings opportunities with the purchase of like product. The distributor also sparked product standardization initiatives, to increase “manufacturer allowances”, which resulted in an additional \$160K savings. The contract was also amended for additional product lines, which garnered another \$66K in savings by locking in pricing for 21 “top use” items for one year – which previously had weekly pricing changes.

- In the realm of Material, Repair and Operating Supplies, Procurement negotiated free freight savings for delivery of items, resulting in \$30K in annual savings. The closure of MStores eliminated University inventory of 2000 lines from 27 suppliers and consolidated them into a single vendor, who maintains on-site consignment inventory (vendor owned until issued). This vendor provides inventory management software that University employees utilize to issue supplies for work orders.

Also of note is Procurement Services’ collaboration with the Michigan Life Science Purchasing Consortium. Procurement Services partners with Michigan State University, Wayne State University, Western Michigan University and Van Andel Institute to negotiate contracts largely with laboratory supply vendors. Total annual spend by the consortium members on these contracts is approximately \$6.4 million. In FY2006, U-M’s spend was approximately \$4 million of the \$6.4 million, which resulted in a savings annually from list prices of approximately \$2.4 million.

The University has also chosen to self-insure in select areas so as to achieve the full financial benefit of risk-reduction programs and investment opportunities with insurance reserves.

- The University's decision to self-insure for risks and losses has provided significant financial stability and economic benefits over time. The discipline and strength of the Veritas Captive Insurance Corporation, the vehicle for our self-insurance program, has allowed the University to 1) Avoid costs normally associated with commercial insurance profit margin and overhead, 2) keep the premium savings from our better-than-average loss experience over time, 3) generate and keep the benefits of exceptional investment returns over time, 4) smooth out the impact of variable business investment and insurance market cycles, and 5) command lower prices for and greater opportunities to acquire catastrophic loss insurance coverage (coverage in excess of our self-insurance levels) in the commercial market. Since 2003, the general fund premium credits have totaled nearly \$8.7 million and the general fund dividends totaled nearly \$14.5 million.
- Our recent decision to self-insure for medical benefits results in greater control over plan design, more transparency and access to claims and utilization data. This information can be used to impact claims and costs by providing information

on our population and its risks in order to design the best plans and programs for our faculty and staff. Furthermore, moving away from a fully insured environment eliminates built in profit margins and premium taxes from our rates.

## 2. Energy Efficiency

The University of Michigan is a major consumer of energy to heat and cool its many buildings and to supply electricity for ordinary operations and for special research needs. We approach containment of energy costs at multiple levels:

- Maintaining an efficient central power plant to co-generate steam and electricity and regional chiller plants to deliver chilled water
- Modernizing the systems in individual buildings so that they maximize energy efficiency
- Educating students, staff and faculty about how their individual behavior can reduce energy consumption on campus.

### Hatcher Chiller & Substation

In 2005, the chillers at the Hatcher Graduate Library needed to be replaced due to their age. In addition, several chillers in the immediate area were also scheduled for replacement soon afterwards. We proposed a consolidation of these chillers into a single chiller plant, which would provide greater operational efficiency and ease of maintenance. This project was approved by the Regents and then completed in May 2006, with a capital investment of \$6.8 million. We will realize fuel savings of over \$500K per year for four buildings (Hatcher South, Hatcher North, Tappan and Clements).

### East University Chiller

As noted in the Hatcher Chiller discussion above, we continually analyze different ways to be more efficient and support campus. Another example of these efforts is the East University Chiller Plant (EUCP) project. We recently received approval to upgrade the chiller configuration within the EUCP system. The primary objective of this project is to increase cooling capacity to meet current needs and to provide increased reliability, which can be accomplished by installing a new electrical chiller among the existing steam-absorption cooling units. While the initial project cost is \$2.7 million, this investment is offset within five years since the overall projected utility savings (energy and water) is estimated to be over \$600K a year.

### Energy Conservation

The Energy Star program ran from 1997 to 2007 and has been a strong foundation for the next phase of our energy conservation activities. One of the new, primary activities is the implementation of Planet Blue teams, which has been particularly exciting. Planet Blue teams are actively engaging building occupants across campus by educating them on “best practices” for environmental and energy conservation and ways to reduce

consumption. In addition, we are implementing Energy Conservation Measures (ECMs) specific to individual buildings across campus. Some examples of ECMs include: installation of occupancy sensors, reduced fan schedules, and low-flow faucets. ECMs can create significant savings. For instance:

- The Fleming Building's total utility expense is \$440K per year. A one-time investment of approximately \$175K for various ECMs will result in annual savings of \$124K, saving over 25% of the building's annual utility expense.
- The Institute for Social Research is also realizing approximately 25% savings on its annual utility expense of \$770K, but with a higher initial investment (project costs of \$721K with projected savings of \$197K).

Not all buildings will realize such savings, but we will continue to monitor consumption and trends to assess the overall impact of our energy conservation measures.

In addition, the College of LS&A has taken significant steps to conserve energy. The College operates 23 buildings on the central campus with approximately 1.8 million square feet of space. As a result, utilities are the College's largest expense after salaries and benefits. Key Performance Indicators (KPI) have been developed for energy and space usage that display trends in utility usage by building to guide LSA units in improving the management of these resources. The College created and filled an Energy Manager position with responsibility for developing, implementing, monitoring and evaluating programs to reduce utilities consumption throughout the College. In the first year of operation, this energy conservation program has been an outstanding success, resulting in an estimated \$1.6 million reduction in utility costs.

#### Energy Efficient Buildings

The University consciously employs design standards when constructing new buildings that lead to energy efficient results. Such measures include additional insulation in foundation walls, exterior walls, and roof assemblies and energy efficient windows/glazing. For the new North Quad Residential and Academic Complex, this represents annual utilities cost savings of approximately \$260,000 when compared to projects of similar scale and complexity. A number of additional measures are being incorporated into the North Quad project's final design that preliminarily could yield additional annual utility cost savings of approximately \$150,000. These measures include: use of occupancy sensors to reduce lighting levels, variable water flow controls, resetting of space temperatures based on occupancy sensors, maximum insulation, and exhaust heat recovery. The expectation is that the North Quad complex will exceed code-minimum energy requirements by approximately 40%.

### 3. Health Benefits Strategies

With the soaring costs of health care, the University's expenditures on health benefits have been a major cost driver. Over the past several years, we have taken significant steps to contain growth in the University's expenditures on health care benefits. Still, our current expenditures on health care are equal to about 20% of the amount that we spend on salaries and are projected to rise to 30% of salary expenditures over the next ten years without further steps to contain costs.

The University remains committed to its benefit strategies and principles of:

- Quality programs at affordable cost
- Market-competitive programs to recruit and retain faculty and staff
- Responsible fiscal agent and resource steward
- Plan choice
- Enable informed decision-making
- Leverage internal and external expertise in development of innovative benefit design and programs to promote a culture of health

In support of these strategies and principles, the University has implemented significant cost-containment strategies over the past five years by:

- Carving out prescription drugs from medical plan vendors, with internal expert oversight and monitoring of the dynamic pharmacology market and trends, and ability to rapidly develop and deploy programs to effectively manage costs and ensure medication safety and efficacy;
- Negotiating a new Pharmacy Benefit Manager Contract (SXC) for prescription drug claims resulting in a \$4.3 million pricing reduction based on a change in the overall discount from average wholesale price rate;
- Adopting new strategies for health co-premium sharing reflecting market trends of greater cost sharing by employees and retirees, reducing the University paid portion of health insurance premiums from 94% in 2003 to 85% overall. Based on 2007 premium dollars, the co-premium sharing is saving the University approximately \$23 million annually;
- Developing and implementing the Medicare Part D employer subsidy, returning \$3.6 million in prescription drug expense annually;
- Increasing use of generic prescriptions (each 1% use of generics decreases the drug plan expense by \$450K), and collaborating with UMHS prescription drug pricing program for 340b pricing. In Calendar Year 2007, the University saved approximately \$2.8 million by increasing its use of generic prescriptions;

- Implementing a debit card process for the Health Care Flexible Spending Accounts, increasing faculty and staff participation by 18%. Expanding the contract with our Flexible Spending Accounts vendor saved \$130,000 in administrative overhead;
- Implementing a new life insurance vendor contract producing annual premium savings of \$100,000 and releasing the University's substantial life insurance reserve for other high priority uses;
- Developing the infrastructure to effectively manage the new self-insured medical plans that are administered by BCN, resulting from the sale of M-Care.

Nationally, 2008 represents the fifth year of consecutively lower medical trend rate increases, and the second year of prescription drug trend levels more consistent with national trends. For 2008, Segal's health plan cost trend survey projects medical trend rates of 10.5% to 10.7% for HMO and PPO plans, and 10.6% for prescription drug plans. Projected medical trends are in the 6-10% range for the next few years.

The University's overall health rate increase for calendar year 2009 is estimated to be 6.3%, with medical plan rates increasing by approximately 8% and a 0% increase in prescription drug premiums. Our lower than national trend rates are indicative of the success of the University's strategies.

#### 4. Leveraging Information Technology

The University is leveraging technology to contain costs, improve performance, and support strategic decision-making. Technology-enabled business processes have allowed us to reduce our administrative costs and simultaneously increase our research base and student enrollment. In a later section, we will discuss increased staff productivity. Information technology is one of the important factors that contribute to this productivity growth.

There are many different efforts to use technology to leverage the University's financial, physical, and human resources. Below is a broad sampling of efforts that have led to cost containment and improved information management through leveraging technology:

##### *Reduce need for paper copies and manual data entry*

- Paperless Review of Undergraduate Application for Admission  
The Office of Undergraduate Admissions now uses a totally paperless process for application review, improving service to applicants, eliminating the reliance on paper, and increasing our ability to compete for the most academically capable students. The paperless process eliminates data entry, creation of paper files,

inter-filing of supplemental materials, and distribution of paper files to evaluators, a process that occurred for more than 23,000 applications with an estimated 10 pages per application.

- Web Grade Submission  
Web Grades eliminated the paper-based grade reporting system improving the quality of grade data and eliminating redundant manual effort in academic departments and the Registrar's Office. Grades are posted almost six times faster than when they were processed manually. Approximately 925 hours of effort each term was eliminated in the Office of the Registrar.
- Paperless Reporting  
Eighty-seven percent of direct deposit users have opted to discontinue receiving a paper copy of their pay stub, creating an annual savings of \$375,000 in postage and \$20,000 on preprinted advice forms.

***Streamline business processes, reducing staff time in routine information handling and eliminating duplication of effort***

- Automated Degree Progress Checking  
The degree progress checking system allows students and advisors to track progress toward a degree on-line with real time data, eliminating a manual, intensive process of comparing requirements for a degree to the student's completed courses. The system supports a new process for evaluating "cross campus transfers" for students moving from one school to another within the University. The new system and process saves Undergraduate Admissions and the Registrar's Office an estimated 45 days of effort per year.
- On-Line Effort Certification  
All individuals who certify effort now do so on-line, resulting in an estimated annual savings of \$300,000. This process improvement also reduces the University's compliance risk (some of our peer institutions have experienced large fines in recent years).
- Purchasing and Supply Chain Improvements  
The University has moved to on-line purchasing of goods, furniture and lab supplies. Staff now select the items on line and the vendor delivers the goods to the lab or office of the purchaser. As a result, M-Stores and the warehouse of central supplies have been completely eliminated, resulting in significant savings. Trend analysis of purchasing behaviors on campus enables Procurement Services to identify new potential vendors for strategic sourcing of goods, continuously seeking to reduce the University's overall spend.

*More effective advanced information processing, with increased efficiencies and decision-making*

- Student Scholarship Matching

Thousands of restricted student scholarships have been established over the years and are administered by departments across campus. Many scholarships are restricted to students who meet specific criteria (geographical location of home town, high school GPA, interest in a specific discipline, etc.). Matching students to scholarships was a manual, paper intensive process. Scholarships often went un-awarded because of the difficulty of finding qualified students. We developed a tool that expedites the matching of student qualifications to award criteria. The system allows the schools and colleges to better leverage all their available resources for student support. The system also improves the stewardship of donor funds by properly matching student characteristics with the donor criteria, thus ensuring that the donor funds are being used as intended. The College of Engineering reports that the system has resulted in increased donor satisfaction with the Michigan Experience and, in some cases, has led to additional gifts. A number of units are implementing this system in their unit.

- Management Controls and Reporting

A new system called M-Reports is built on the concept of guided analytics for helping users traverse through data to draw conclusions. M-Reports also will include dashboards and metrics for performance monitoring. Through M-Reports, Deans, directors and financial managers now receive on-line reports and guided analytics on employment and pay management controls. The reports improve payroll controls and reduce risk of fraud and abuse. Future reports include P-Card, purchasing and travel expense controls.

- Electronic Waitlists

Improved automated waitlist processes have enabled units to better manage the supply of seats in over-subscribed classes. The improved process includes better information for departments to manage demand through waitlists, a self-service transaction for students to view their class permissions and waitlist priority, and permission information automatically emailed to waitlisted students when assigned.

- Emergency Notification System

The University implemented an emergency notification system with an external service provider. A large cross-unit team worked together to review and select a vendor, modify M-Pathways systems, and communicate instructions on using the new system to faculty, staff and students. By leveraging our M-Pathways system, University community members can add their emergency notification information via the Wolverine Access employee and student self-service web pages. Over 21% of employees and 19% of students have added emergency notification information (as of 4-2-2008).

## 5. Other Revenue Sources

The University has multiple revenue sources that reside outside the general fund including research funding from external sponsors (mostly federal), gift funds and endowment payout, and funding that comes from auxiliary activities such as patient care. It is often the case that these other funding sources can be used to support current activities or important new initiatives that would otherwise be costs to the general fund. This kind of reallocation of costs is a key mechanism that allows our academic enterprise to thrive at the same time that we contain costs on the general fund.

### Fundraising

To increase fundraising effectiveness, we have made significant investments in our Development operation over the past few years, including support for the alumni database, international fundraising, and a parents and families program. We are also continuing our support for the establishment of a comprehensive young alumni solicitation and donor education program and the reestablishment of alumni reunions.

Funding from gifts allows academic units to undertake initiatives or increase the quality of existing activities without adding costs to the general fund. As an example, President Coleman has launched a series of matching programs where the University has used non-general fund resources to match new endowment gifts from donors to support endowed professorships, undergraduate need-based financial aid, and graduate fellowships. The programs have already raised funding for twenty new endowed professorships and over \$60 million in endowment for need-based undergraduate financial aid (the graduate fellowship program is still underway). Together these two matching programs provide over \$4.5 million in new base funds, a figure that will grow with the market value of the endowment.

In addition to providing resources for new and innovative things, many gifts provide funding for existing activities, allowing us to reallocate general fund resources to other needs. Through proactive and focused fund-raising activities, this source is becoming increasingly available for professorships, financial aid, and facilities. A few examples of prudently replacing general fund costs with other funding sources are noted below:

- In the academic units, we are maximizing the use of endowed professorships to supplement the general fund in providing faculty salaries.
- The School of Education is reducing the number of graduate student research assistants who are supported by the general fund through use of other sources of revenue.
- The College of Literature, Sciences and the Arts has shifted costs of a significant facilities project from the general fund to endowment funds.

- The University shifted a portion of the Office of Development's budget from the general fund to the endowment to better align the unit's activities with its funding source.

One measure of how much gift funds have saved in general fund costs is to look at growth in expenditures of gift funds and endowment payout to all other funds, as these support activities in the schools and colleges that would otherwise have to be supported on the general fund. Since 2002, those items have risen by more than \$110 million.

#### External Research Revenue

The University of Michigan remains in the top three amongst federal funding of research. This indicates the great success that the University has had over time in finding federal sources to support the costs of our research enterprise. It is often the case that we seed new initiatives with general fund dollars in areas where we anticipate opportunities and growth in federal funding. Current examples include our \$9 million investment in the Energy Initiative and our \$7.5 million investment in the Graham Environmental Sustainability Institute. In both cases, these one-time general fund investments will create activities of significant academic value that we expect to be funded on an ongoing basis from external sources.

#### The Big Ten Network

A portion of the University's proceeds from the Big Ten Network contract are put in the hands of the President for her highest priorities. She has designated that over \$1 million of this annual flow be directed towards need-based financial aid for undergraduates, allowing the University to increase this aid by \$1 million without additional cost to the general fund.

#### Investment Proceeds

The University has achieved great returns on its long-term investments over the past several years. This success has allowed the President to direct \$40 million to support the new initiative to expand the faculty by 100 lines.

### 6. Greater Productivity of Staff

In our earlier discussion of cost increases at the University of Michigan, we noted that levels of activity at research universities continue to grow at a robust clip and that our costs are predominately for personnel. To sustain this rapid growth in our teaching and research activities, without a resulting rapid growth in personnel costs, we have had to find ways to make our faculty and staff more productive so that we can do more with relatively fewer faculty and staff.

Our success can be seen from the numbers. Since 2002, the total number of general fund FTEs has grown by less than 1% while:

- Total headcount enrollment has grown by over 5%

- Total undergraduate headcount enrollment has grown by over 6.5%
- Volume of research has grown by 17%

There are efforts at every level of the institution to make staff more productive through use of technology, streamlining of administrative processes, re-organization of staff efforts, more effective waitlist processes to be sure classes are filled to their intended enrollments, and conversion of staff positions to seasonal appointments reflecting the academic calendar.

A few recent examples follow:

- The Medical School accomplished a virtual consolidation of the basic science departments' administrative functions, leading to the sharing of personnel and streamlining and standardizing business practices across the basic science units.
- The Rackham School of Graduate Studies downsized selected offices within the school, enabling the reallocation of resources. They also reallocated funds from lower priority activities in order to provide more support to student research and professional travel.
- The College of LS&A is initiating some centralized staffing models for finance and HR transactional work in order to reduce training time and costs, decrease the range of expertise required for any one employee, and allow for consolidation.
- Portions of the CFO organization are adopting budget strategies regarding open positions that factor in the length of time positions remain open from employee turnover in order to reduce baseline payroll costs. The unit is also consolidating positions; for example, University Human Resources is consolidating an office position, a manager position and two other part-time positions to achieve savings of \$199K.

We continue to do more with less. It is difficult to exactly capture the savings that have resulted from increases in staff productivity. However, one estimate comes from assuming that our number of general fund FTE had expanded at the same rate as enrollment over the past six years (well below the rate of growth of research activity). If we had seen that rate of growth in our FTEs, then our costs for faculty and staff salaries and benefits would be an estimated \$30 million more than they are today.

## 7. More Efficient Utilization of Space and Facilities

The University of Michigan launched the Space Utilization Initiative in July 2006 as part of our effort to be good stewards of the University's physical and financial resources. The goal of this multi-year initiative is to improve utilization of the general fund facilities

on the Ann Arbor campus, including all types of space - instructional, research, and administrative.

The Space Utilization Initiative has multiple components designed to look comprehensively at issues related to facilities usage. Many of the projects will involve examining current institutional business processes and systems, organizational roles and responsibilities, and policies to determine what changes, if any, are needed to ensure that we are managing these areas most effectively.

To address the goals of the Space Utilization Initiative, we are exploring the following key areas:

- Information and systems – to ensure that we have data and systems in place to effectively inform management decisions related to space utilization, allocations, and assignments.
- Capital projects process – to provide a structured, consistent, and transparent process for submitting, reviewing, selecting, and approving capital projects based on institutional priorities.
- Budgetary incentives – to provide financial or other incentives to schools, colleges, and administrative units that support effective and efficient use of space, space sharing, and energy conservation, thereby reducing overall operating costs for the institution.
- Facilities maintenance and upkeep – to examine our investment in sustaining current facilities and to implement potential changes in incentives, processes, or investment levels, resulting in more cost-effective up-keep of our facilities over the life of our buildings.
- Shared space – to identify and encourage opportunities to share space and to optimize space usage to meet academic or research needs.
- Shared technology – to identify and encourage opportunities to share technology to meet academic or research needs, where appropriate, and to reduce technology support costs.
- Energy conservation (discussed above) – to reduce energy usage through energy conservation education, facility infrastructure education and adjustments, and behavioral changes.

#### Campus Changes/Improvements to Date

Over the past year, the Space Utilization Initiative has focused on sharing of high-end facilities, classroom utilization, office space assignments, and the capital projects process as its first priorities to optimizing space and reducing long-term operating costs. It may take time before the affects of these changes can be measured, but the long-term impact will result in more effective use of space in the future.

- Sharing of high technology facilities – Over the past five years, the University has constructed a number of major facilities that are being shared by users across the University. These include:
  - The Lurie Nanofabrication Facility, a state-of-the-art cleanroom

- The Michigan Academic Computing Center (MACC), an advanced facility to house high end research computing
  - The Undergraduate Science Building, a facility with advanced classrooms, instructional science labs and computer simulation facilities to support undergraduate science and engineering courses
- Classroom utilization target goals, data warehouse, and management reports – A common need across many academic units and within the Office of the Provost is to better understand how classroom space is used. Although the University’s M-Pathways systems contain a great deal of space-related data, they were not designed to specifically provide classroom utilization information. As a result, it has been difficult for schools, colleges, and the Provost’s Office to make informed decisions about how to optimize the use of this space. Along with this need for sound data is the need to understand if classroom utilization aligns with campus norms.

To address this need for information, a new data warehouse was built for the Ann Arbor campus to connect physical space information with course and enrollment information. Fourteen management reports were developed to help units understand classroom utilization, seating utilization, matches between enrollment count and room seating capacity, and more. Target goals were established for time and seat utilization and will be reviewed and discussed during annual budget meetings with units and when units submit capital project requests.

- Time utilization goal (70%) – # of hours a classroom is used/# of hours a classroom is available in a 45-hour week
  - Seat utilization (65%) – # of enrolled students/# of seats available in the classroom
- Office space guidelines – The University of Michigan has not had campus-wide guidelines for allocating office space, which has resulted in inconsistencies in office space assignments and sizes during new construction. New office space guidelines were developed to help general fund administrative and academic units decide more effectively how to assign and use office space when planning renovations and new construction, optimize use of existing office space, and align new office space with campus norms. Office space represents approximately 24% of our overall space.
- Capital projects process and guidelines – One of the Space Utilization Initiative’s first projects was to establish a more formal process for proposing, reviewing, selecting, and approving capital projects for general fund academic and administrative units. New buildings and major renovations to existing buildings incur substantial costs to the University in terms of initial expenditures as well as ongoing operating expenses. Having a more formal capital projects process in place provides greater transparency for all members of the University community regarding the process and decision-making criteria and ensures that the

University's long-term investments in capital projects contribute to the academic and research needs of individual units and to the larger University.

- Sharing space – Units that receive central funding to support new construction or renovation of classrooms are now required to make these classrooms available for campus-wide use. This not only improves utilization of these classrooms, but also provides new environments for teaching and learning to the pool of classrooms that are available on campus.

## Looking Ahead to FY2009 – 2014

Our disciplined approach to setting annual general fund budgets requires us to incorporate cost reductions and reallocations of 1.5% to 2% each year. Below are some of the key steps in progress that will help us meet that annual level of cost reduction over the next several years. Again, we organize this according to the themes identified earlier.

### 1. Purchasing Strategies

As preferred vendor contracts expire, we will continue to negotiate more favorable purchasing terms. One area that has great potential is the purchase of telephonic and network services, both of which we currently provide in-house to a large extent.

Presently, Procurement Services is restructuring Accounts Payable and is in the beginning phases of implementing two new technology solutions. Potential savings as much as 50%, or \$1 million, through business process improvements and technology solutions is likely at the conclusion of these implementations. This restructuring will result in improved controls, tighter management and enforcement of travel and employee expense reimbursement, improved data to negotiate potential travel discounts, and improved vendor payment.

Procurement is also investigating the use of PCard as a payment vehicle which would result in earning additional rebates to offset departmental costs. This avenue would only be used for suppliers other than strategic vendors who may not be able to process electronic invoices for prompt payment terms.

### 2. Energy Efficiency

We will continue to implement building specific Energy Conservation Measures where appropriate and to look for efficiencies that can be achieved by regional chillers and advances to the central power plant.

In addition, we are supporting two programs aimed at changes in individual behavior.

*Planet Blue Teams:* Facilities and Operations established teams of building and infrastructure experts, known as Planet Blue teams, to perform building energy assessments, and to educate and engage facilities managers and occupants on methods to reduce energy consumption and costs building-by-building. The goal is to engage 30 buildings per year. A one percent reduction in utility usage translates to over \$1 million in annual savings for the University.

*Climate Savers Computing Initiative:* The University is a member this nonprofit group of eco-conscious consumers, businesses and conservation organizations dedicated to improving power efficiency and reducing energy consumption of computers. The goal

of the program is a 50 percent reduction in power consumption by computers by 2010, netting \$5.5 billion in global energy savings and an annual reduction of 54 million tons of CO2 emissions per year. This initiative combined with other UM environmental initiatives, such as Planet Blue, will have a direct impact on the University spend for electricity and reduce the CO2 emissions created by the University's power needs.

### 3. Health Benefits Strategies

We are putting in place multiple strategies to support the improvement of health for employees. Since we are self-insured, better employee health will lead directly to reductions in health benefits expenditures. Examples of these strategies are:

- Active U, our physical activity for life incentive program in which 10,000 employees participated in 2008
- The Good Choice Healthy Eating Program, which improved healthy food and beverage options in our vending machines, dining areas and catering
- Understanding U, a mental and emotional health awareness campaign, resource website and e-learning training for managers and HR professionals
- Enhanced Ergonomics – providing self-help tools, a matching grant program for departmental ergonomic improvements, and workstation consultations for employees with medical conditions
- Access to *Healthwise* – a health education knowledge database for employees and their families
- The Focus on Diabetes pilot program (to increase adherence for preventative care for diabetics)
- The Focus on Medicines pilot program (to optimize drug therapy for members who use nine or more medications)
- HealthSense, a communications series to increase awareness of health care costs and the importance of preventing illness

In addition, we are actively considering a range of other cost containment initiatives in the health benefits area. Two committees were launched this fall. The Committee on Sustainable Health Benefits will recommend methods to achieve a new ratio for aggregate cost-sharing for employees and retirees. This will include an examination of premium contributions, co-pays and deductibles. The committee will also consider employee salary levels when recommending premium amounts. The Committee to Study Vesting Options for the Retirement Savings Plan will provide guidance on vesting options and waiting periods for the enrollment of future employees in U-M Retirement Savings Plan.

### 4. Leveraging Information Technology

One of the most promising directions for future benefits from information technology is in the Business Intelligence area, i.e., designing software products that assist unit leaders

in identifying trends, optimizing resources, evaluating future business directions and automating routine decision-making. Below, we note several examples of business intelligence projects that are well into planning and development:

*Trend Reporting for Course Demand Planning:* The LS&A Course Demand Planning Initiative recommended a set of reports to aid in analyzing course enrollment data and identifying trends. These reports will aid all schools and colleges in reviewing course elections and support better forecasting and planning for future course offerings and instructor needs.

*Contributor Relationship Management (DAC Replacement Project):* The current information system for our development operations (DAC) is over fifteen years old. It is the only legacy mainframe system not replaced as part of the M-Pathways project. Almost all of our competitors are using new technology for tracking relationships and contacts with donors and improving the management of the lifecycle of the gift. The new system will improve the development of new and existing donors and improve the stewardship of gifts. It will increase our competitive advantage for donations and, hopefully, increase gift revenues.

*Electronic Routing of Research Proposals and Electronic Submission to Federal Agencies:*

eResearch Proposal Management is a project currently underway. It includes the electronic routing and approval of research proposals, including electronic submission to federal agencies. The system will reduce the administrative burden on researchers and increase our competitive advantage for grant funding.

## 5. Other Revenue Sources

An area of particular opportunity, both for our research mission and our public mission, is greater engagement with the business community. Our plans include expanding our partnerships with existing businesses to enhance the research support that they provide to UM investigators as well as more effective support for start-up companies that are spun off of UM research activities. Successful start-up ventures not only bring a much-needed boost to the State economy but will eventually return licensing revenue to the University.

We have recently launched a Business Engagement Center that will more actively engage the business community as well as provide advice and gap funding to UM inventors who want to convert research discoveries to marketable products.

Also, in order to ensure that we are leveraging our revenue sources, this summer the Provost's Office will launch an effort to identify and share best practices across the University to better utilize gift and endowment funds.

## 6. Greater Productivity of Staff

We are actively exploring other opportunities to consolidate staffing with smaller units including conversations with the smaller schools and colleges. And the Business Intelligence initiatives described above are aimed at further increasing staff productivity.

In constraining growth of general fund FTE's, we always must be mindful of possible negative impacts on our core research and teaching missions. Indeed, the growth in instructional activity and research over the last several years with little growth in faculty has put the quality of our academic enterprise at risk. So, the one area where we will look to expand staffing is in the faculty ranks. We have launched an initiative to hire 100 new faculty members in what will be a deliberate attempt to reduce our student-faculty ratio over the next several years.

## 7. More Efficient Utilization of Space and Facilities

The Space Utilization Initiative team continues to explore opportunities to improve space utilization and reduce overall operating costs for the University in the following areas.

- Food service planning – In collaboration with the Division of Student Affairs and Business and Finance, we are seeking to establish a more structured, strategic process for planning and placing future food service operations on campus to ensure that they meet the needs of the University community and are financially viable.
- Facilities maintenance and upkeep – We have been gathering information on challenges in facilities maintenance and upkeep that affect units and the central facilities organization and will be working to identify changes in business practices, incentives or investment levels to address these challenges.
- Classroom scheduling and utilization system –The first step in improving classroom utilization was to expose current utilization data to campus. The next step is to improve the systems and business practices for scheduling classrooms and to determine if campus-wide policies or guidelines are needed to establish more consistent scheduling practices and optimize classroom scheduling across campus.
- Guidelines for underutilized classrooms – With classroom utilization data now available, we will be identifying and investigating classrooms that are underutilized and establishing criteria or guiding principles for removing classrooms from the overall campus pool and repurposing these rooms for higher priority academic needs.
- Research space guidelines, practices – Although research and research space needs vary greatly and are unique to each discipline, we will be exploring

research space and productivity metrics and guidelines that may be used to assist units in assigning and monitoring research space usage.

- Space and technology sharing – As units share pressing space needs or request new space, we continue to identify opportunities for units to share space, where appropriate. We plan to explore opportunities to share technology through researching internal and external best practices and determining changes in business practices, systems, or campus guidelines that may be needed.
- Budgetary incentives – To supplement space charges that exist in our current budget model, we will be exploring financial incentives to encourage energy conservation and effective use of space. This requires identifying appropriate metrics and target goals, ensuring that all necessary data is available and accurate, and that we have information systems in place to report data as needed.
- Library Space  
On-line journals and scanning more books allows the University Library to eliminate duplicate print journal subscriptions (currently located in multiple locations) as well as reduce books located in prime academic space. This frees up library shelf space for collaborative study space and other uses.
- Data Center/Server Room Consolidation  
With the advent of server technology over the last ten years, server rooms have proliferated across campus creating increasing demand for space and electrical power needed for operation and cooling. In many cases, these machine rooms have been constructed in spaces that are not optimum to meet the cooling and power needs. MAIS has just completed a data center at Arbor Lakes which provides capacity to multiple units on campus. We anticipate further consolidation of machine room needs in a few centralized facilities.

## **Conclusion**

Our achievements in cost containment, reduction and reallocation, described above, have been key to the success of the University over the past five years and its continued success going forward. Our approach has been comprehensive, involving every aspect of our business and every unit within the University. The results have allowed us to invest in and advance the core academic missions of research and teaching during a period of significant constraint.

*Original: June 2008  
Updated: November 2008*