

**R30B35**  
**University of Maryland Biotechnology Institute**  
**University System of Maryland**

***Operating Budget Data***

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(\$ in Thousands)

	<u>FY 02</u>	<u>FY 03</u>	<u>FY 04</u>	<u>FY 02-04</u> <u>Change</u>	<u>FY 05</u>	<u>FY 04-05</u> <u>Change</u>
<b>Research/Public Service</b>	<b>\$40,624</b>	<b>\$44,917</b>	<b>\$47,023</b>	<b>\$6,400</b>	<b>\$46,308</b>	<b>-\$715</b>
General Funds	16,468	15,518	14,897	-1,571	14,897	
Other Unrestricted Funds	7,858	11,099	12,126	4,269	11,411	-715
Total Unrestricted Funds	24,326	26,617	27,023	2,698	26,308	-715
Restricted Funds	16,298	18,300	20,000	3,702	20,000	
<b>Adjusted Grand Total</b>	<b>\$40,624</b>	<b>\$44,917</b>	<b>\$47,023</b>	<b>\$6,400</b>	<b>\$46,308</b>	<b>-\$715</b>
<b>Annual % Change</b>		<b>10.6%</b>	<b>4.7%</b>		<b>-1.5%</b>	

- The fiscal 2005 allowance for the University of Maryland Biotechnology Institute (UMBI) provides no increase in general funds from the fiscal 2004 level. Since fiscal 2002, general funds for UMBI have declined \$1.6 million, or 9.5%.
- Other unrestricted funds are budgeted to decrease \$715,000 due to use of fund balance for one-time expenses in fiscal 2004. UMBI budgets restricted fund amounts conservatively, assuming no increase from fiscal 2004 to 2005.

Note: Numbers may not sum to total due to rounding.

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## *Personnel Data*

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	<u>FY 02</u>	<u>FY 03</u>	<u>FY 04</u>	<u>FY 02-04</u> <u>Change</u>	<u>FY 05</u>	<u>FY 04-05</u> <u>Change</u>
Regular Positions	351.2	307.6	300.6	-50.6	300.6	0.0
Contractual FTEs	44.5	39.0	37.0	-7.5	37.0	0.0
<b>Total Personnel</b>	<b>395.7</b>	<b>346.6</b>	<b>337.6</b>	<b>-58.1</b>	<b>337.6</b>	<b>0.0</b>

### *Vacancy Data: Regular Positions*

Turnover Expectancy	9.26	3.08%
Positions Vacant as of 12/31/03	9.32	3.10%

- The allowance provides no increase in regular or contractual positions.

## ***Analysis in Brief***

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### **Major Trends**

***Research Success Continues:*** Extramural research funding is flourishing, the number of patents issued has increased, and patent licensing fees and royalties have increased.

***Environmental Education Measures Are Exceeding Objectives:*** UMBI has exceeded its objectives to educate at least 5,700 K-12 students and 300 K-12 teachers annually.

### **Issues**

***Operating Funds Falling Short for Building under Construction:*** Expenditures for the Center for Advanced Research in Biotechnology second building, or CARB II, primarily are reflected in the capital budget, but it is a significant concern for UMBI. The building is under construction and already is incurring operating expenses. Beginning in fiscal 2006, annual operating costs are expected to be \$2 million.

### **Recommended Actions**

1. Concur with Governor's allowance.

### **Updates**

***New Budget Report Increases Transparency:*** Due to the specialized nature of UMBI, its funding is budgeted in only one program – research. UMBI has provided to the Department of Legislative Services a separate budget report that delineates funds by institutional support, plant, and public service programs as well as research. The report also indicates how the budget is allocated among UMBI's five centers.

*R30B35 – USM – University of Maryland Biotechnology Institute*

**R30B35**  
**University of Maryland Biotechnology Institute**  
**University System of Maryland**

***Operating Budget Analysis***

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**Program Description**

The University of Maryland Biotechnology Institute (UMBI) aims to establish and nurture internationally recognized biotechnology research programs and to promote biotechnology-related economic development in Maryland. It does this through five interdisciplinary research centers at various locations throughout the State. As shown below, each center has a unique focus:

- **Center for Advanced Research in Biotechnology:** Founded in 1985 to study protein engineering, structure, and function; provides advanced technical capabilities to the biotechnology industry; located in Shady Grove, Montgomery County;
- **Center of Marine Biotechnology:** Founded in 1985; specializes in research in molecular biology, molecular genetics, bioprocess development of aquaculture fisheries, marine microbial products and processes, and marine pollution/environmental remediation; located at the Columbus Center in the City of Baltimore's Inner Harbor;
- **Medical Biotechnology Center:** Founded in 1986 to conduct medical biotechnology research and training; housed within the medical research facility at the University of Maryland Baltimore campus, City of Baltimore.
- **Center for Biosystems Research:** Founded in 1987 to address fundamental biological questions and derive practical solutions that benefit agriculture, industry, human medicine and the environment; located at the University of Maryland, College Park campus, Prince George's County; and
- **Institute of Human Virology:** Founded in 1996 to combine basic research, epidemiology, clinical research toward the discovery of diagnostics, and therapeutics in human virology; housed within the medical research facility in Baltimore.

Building on its strength in research and economic development activities, UMBI aims to increase revenues from extramural funding sources.

In addition to its commitment to conducting research and serving as a catalyst for business development, UMBI aims to provide training for the biotechnology workforce and the next generation of scientists, improve access of minorities to bioscience education, and advance public knowledge of biotechnology related issues. To this end, UMBI contributes to the education and training of students at all levels in the life sciences and biotechnology. Programs include hands-on K-16 science and technology education programming for teachers and students, internships, and

VIRTUE – a collaborative virtual university program in the marine sciences with universities in Sweden and Norway. UMBI faculty members also teach and advise almost 200 degree-seeking students, postdoctoral trainees, and research trainees each year.

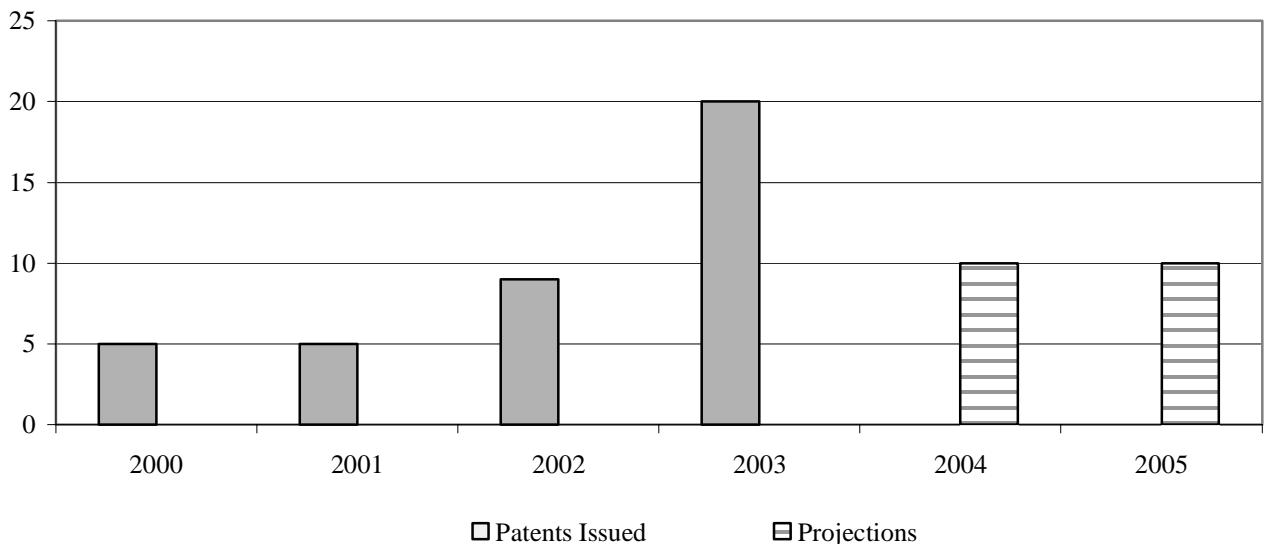
## Performance Analysis: Managing for Results

Research is central to the mission of UMBI. The institution’s research performance measures generally are on track. For example, extramural research funding is flourishing, increasing from \$17 million in fiscal 2001 to \$30 million in fiscal 2003. The number of industry-sponsored research agreements is holding steady at 19 per year, but the amount of awards has increased.

UMBI continues to exceed its objective for the number of patents issued. **Exhibit 1** shows that the number of patents issued jumped from five in fiscal 2001 to 20 in fiscal 2003, exceeding the objective of seven per year. UMBI reports that this rise was due to increased efforts to identify, track, and protect intellectual property in prior years. The number of patents is expected to remain at about 10 per year in fiscal 2004 and beyond since the institution has reduced its funding for patent prosecution. Patent licensing fees and royalties have been increasing, totaling \$117,422 in 2003.

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**Exhibit 1**  
**UMBI Patents Issued**  
**Fiscal 2000 – 2005**

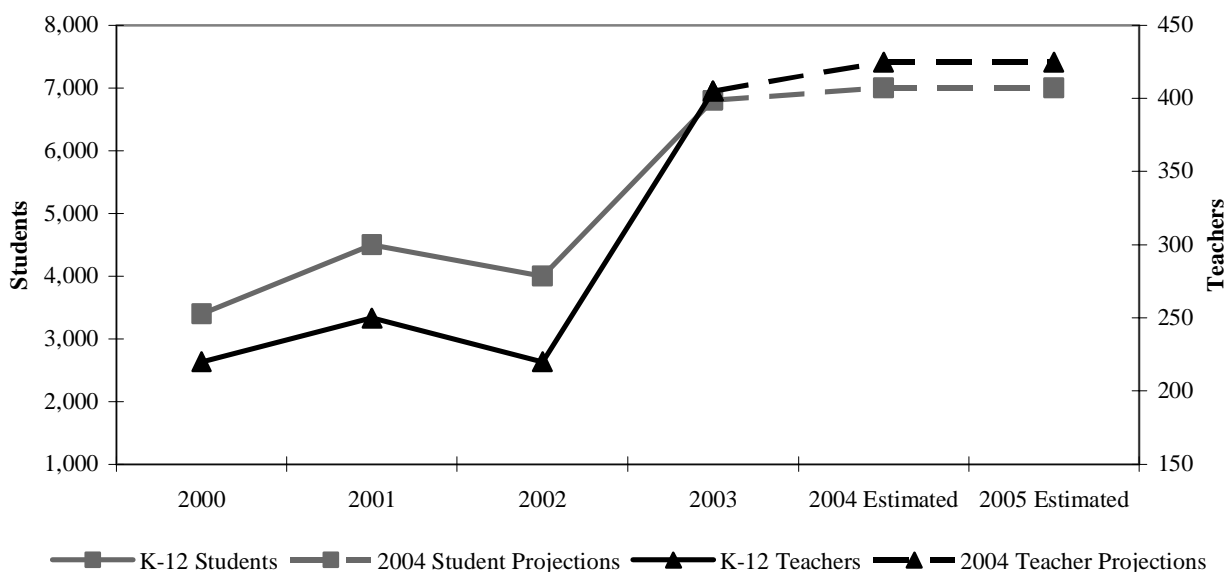


Source: University of Maryland Biotechnology Institute

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In addition to research, UMBI has a goal to provide training for the next generation of scientists in biotechnology. **Exhibit 2** shows that the institution exceeded its goal to increase the number of K-12 students participating in hands-on science and technology education programs to 5,700 annually. As of fiscal 2003, the number of students was 6,800, and it is expected to further increase. The objective to increase the number of teachers participating in these programs to 300 annually also has been exceeded – reaching 405 in fiscal 2003.

**Exhibit 2**  
**K-12 Students and Teachers Participating in Environmental Education Programs**  
**Fiscal 2000 – 2005**



Source: University of Maryland Biotechnology Institute

As part of its education efforts, UMBI aims to increase its joint programs in biotechnology-related fields with Maryland’s historically black higher education institutions. The number of joint programs has been holding steady at four, meeting the institution’s objectives.

## Fiscal 2004 Actions

### Impact of Cost Containment

General funds for UMBI have declined \$1.6 million, or 9.5%, from fiscal 2002 to the 2004 working appropriation. The Governor’s July 2003 cost containment action accounts for \$474,600 of

the reductions. The July 2003 reduction was relatively modest since UMBI is a research institute and has no ability to generate tuition revenue.

Restricted funds, or grants and contracts, increased 22.7% from fiscal 2002 to 2004 due to a dramatic increase in industry-sponsored research grant amounts and junior faculty who have become more successful in building their research portfolios. UMBI’s unrestricted funds, besides general funds, also increase significantly because they primarily are recovered indirect costs from restricted funds. Considering all funds, the UMBI budget increased \$6.4 million, or 15.7%, from fiscal 2002 to 2004.

The UMBI budget amounts and changes by program from fiscal 2002 to 2004 are shown in **Exhibit 3**. These data are for State-supported funds only, reflecting how the institution has prioritized its use of general funds during recent cost containment. (UMBI State supported revenues also include a small portion of indirect cost recovery from restricted funds.)

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**Exhibit 3**  
**State-supported Budget Changes by Program**  
**Fiscal 2002 – 2004**

	<u>FY 2002</u>	<u>FY 2004</u> <u>Working</u>	<u>FY 02-04</u> <u>Change</u>	<u>FY 02-04</u> <u>% Change</u>
<b>Expenditures</b>				
Research	\$9,599,986	\$10,022,478	\$422,492	4.4%
Plant	4,967,311	4,592,862	-374,449	-7.5%
Institutional Support	4,052,723	4,161,562	108,839	2.7%
Public Service	261,864	280,701	18,837	7.2%
<b>Total</b>	<b>\$18,881,884</b>	<b>\$19,057,603</b>	<b>\$175,719</b>	<b>0.9%</b>
<b>Revenues</b>				
General Funds	\$16,468,109	\$14,896,856	-\$1,571,253	-9.5%
Other State Support	4,066,856	3,921,747	-145,109	-3.6%
Use of Fund Balance	-1,653,082	239,000	1,892,082	
<b>Total</b>	<b>\$18,881,884</b>	<b>\$19,057,603</b>	<b>\$175,719</b>	<b>0.9%</b>

Source: University of Maryland Biotechnology Institute

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Research and public service had the highest rates of increase. Institutional support, which includes executive management and general administration, had the lowest rate of increase at 2.7%. The physical plant budget decreased 7.5%. These figures show that UMBI has protected its core

program – research – in its State-supported budget during cost containment. Furthermore, research increased its share of the UMBI State-supported budget from 50.8% in fiscal 2002 to 52.6% in fiscal 2004.

## **Governor’s Proposed Budget**

The UMBI allowance for fiscal 2005 provides no increase in general funds from the fiscal 2004 level. Other unrestricted funds decrease \$715,000, which is the only change in comparing the allowance to fiscal 2004. This decrease represents a use of fund balance for one-time fiscal 2004 expenditures that are not expected to recur in fiscal 2005.

Changes in the allowance by program are shown in **Exhibit 4**. These data are for State-supported funds only. Research and public service program budgets increase slightly. The budgets decrease for physical plants and institutional support.

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**Exhibit 4**  
**UMBI State-supported Budget Changes by Program**  
**Fiscal 2004 – 2005**

	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 04-05</b>	<b>FY 04-05</b>
	<b><u>Working</u></b>	<b><u>Allowance</u></b>	<b><u>Change</u></b>	<b><u>% Change</u></b>
<b>Expenditures</b>				
Research	\$10,022,478	\$10,081,004	\$58,526	0.6%
Plant	4,592,862	4,388,501	-204,361	-4.4%
Institutional Support	4,161,562	4,063,620	-97,942	-2.4%
Public Service	280,701	285,478	4,777	1.7%
<b>Total</b>	<b>\$19,057,603</b>	<b>\$18,818,603</b>	<b>-\$239,000</b>	<b>-1.3%</b>
<b>Revenues</b>				
General Funds	\$14,896,856	\$14,896,856	\$0	0.0%
Other State Support	3,921,747	3,921,747	0	0.0%
Use of Fund Balance	239,000	0	-239,000	
<b>Total</b>	<b>\$19,057,603</b>	<b>\$18,818,603</b>	<b>-\$239,000</b>	<b>-1.3%</b>

Source: University of Maryland Biotechnology Institute

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UMBI is accommodating mandatory increases related to salaries, benefits, fuel, and utilities by decreasing its budgets for contractual services and supplies, and through savings realized from fiscal 2004 layoffs.

## *Issues*

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### **1. Operating Funds Falling Short for Building under Construction**

Expenditures for the Center for Advanced Research in Biotechnology second building, or CARB II, primarily are reflected in the capital budget, but it is a significant operating budget concern for UMBI. The General Assembly approved \$49 million for CARB II in the fiscal 2004 budget to fund the majority of design and construction costs for the \$60 million project. This new laboratory and classroom building is scheduled to open in October 2005.

Construction on the facility site has begun. UMBI expected to receive \$522,000 in general funds to cover construction related operating costs for fiscal 2005, but the Governor's allowance does not include it. The costs include short-term financing for long lead-time equipment not financed with bonds.

UMBI plans to use its non-State supported fund balance to cover fiscal 2005 operating costs. Beginning in fiscal 2006, annual operating costs are expected to be \$2 million, \$1.5 million of which UMBI expects to receive in general funds.

As mentioned in the USM overview analysis, UMBI is one of several USM institutions with new facilities that are contributing to higher operating costs for the system. In fact, the systemwide budget for operation and maintenance of physical plants increases 10.3% in the fiscal 2005 allowance from the fiscal 2004 level (considering only current unrestricted funds). **The Department of Legislative Services recommends that the UMBI president comment on plans to fund CARB II operating costs.**

## ***Recommended Actions***

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1. Concur with Governor's allowance.

## ***Updates***

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### **1. New Budget Report Increases Transparency**

Due to the specialized nature of UMBI, its funding is budgeted in only one program – research. In the 2003 *Joint Chairmen’s Report*, the committees encouraged UMBI to develop a means for increasing the transparency of expenditures related to administration, plant, and public service in the institution’s budget, while minimizing any adverse impact on the institution’s indirect cost recovery rate.

In response, UMBI has provided to the Department of Legislative Services a separate budget report that delineates State-supported funds by institutional support, plant, and public service programs as well as research. Additionally, the report indicates how much of the State-supported budget is allocated among the five UMBI centers.

## *Current and Prior Year Budgets*

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**Current and Prior Year Budgets**  
**University of Maryland Biotechnology Institute**  
(\$ in Thousands)

	<b><u>General</u></b> <b><u>Fund</u></b>	<b><u>Other</u></b> <b><u>Unrestricted</u></b> <b><u>Fund</u></b>	<b><u>Total</u></b> <b><u>Unrestricted</u></b> <b><u>Fund</u></b>	<b><u>Restricted</u></b> <b><u>Fund</u></b>	<b><u>Total</u></b>
<b>Fiscal 2003</b>					
Legislative Appropriation	\$16,580	\$7,129	\$23,709	\$17,300	\$41,009
Deficiency Appropriation	0	0	0	0	0
Budget Amendments	0	5,667	5,667	1,000	6,667
Cost Containment	-1,061	0	-1,061	0	-1,061
Reversions and Cancellations	0	-1,697	-1,697	0	-1,697
<b>Actual Expenditures</b>	<b>\$15,518</b>	<b>\$11,099</b>	<b>\$26,617</b>	<b>\$18,300</b>	<b>\$44,917</b>
<b>Fiscal 2004</b>					
Legislative Appropriation	\$15,371	\$9,882	\$25,253	\$17,598	\$42,851
Cost Containment	-475	0	-475	0	-475
Budget Amendments	0	2,245	2,245	2,402	4,647
<b>Working Appropriation</b>	<b>\$14,897</b>	<b>\$12,127</b>	<b>\$27,023</b>	<b>\$20,000</b>	<b>\$47,023</b>

Note: Numbers may not sum to total due to rounding.

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### **Fiscal 2003**

In fiscal 2003, \$5.6 million was added to the UMBI unrestricted budget through budget amendment. Of this amount, \$4 million represents a transfer from fund balances and \$1.6 million was for indirect cost recovery from restricted funds. Restricted funds also increased by \$1 million through budget amendment due to an increase in a National Oceanic and Atmospheric Administration grant.

UMBI cancelled \$1.7 million in unrestricted funds in fiscal 2003. Of this amount, \$475,000 was unexpended research initiative fund balance. Also, \$550,000 was for unspent funds related to hiring new faculty at the Medical Biotechnology Center, the Institute of Human Virology, and the Center for Marine Biotechnology. A delay in hiring a new director for the Center for Advanced Research in Biotechnology accounted for \$300,000.

### **Fiscal 2004**

In fiscal 2004, \$4.6 million has been added to the UMBI budget through budget amendment. Of this amount, \$2.2 million is in unrestricted funds due to increased indirect cost recovery, and \$2.4 million is from an increase in restricted funds.

**Object/Fund Difference Report**  
**USM – University of Maryland Biotechnology Institute**

<u>Object/Fund</u>	<u>FY03 Actual</u>	<u>FY04 Working Appropriation</u>	<u>FY05 Allowance</u>	<u>FY04 - FY05 Amount Change</u>	<u>Percent Change</u>
<b>Positions</b>					
01 Regular	307.63	300.63	300.63	0	0%
02 Contractual	39.00	37.00	37.00	0	0%
<b>Total Positions</b>	<b>346.63</b>	<b>337.63</b>	<b>337.63</b>	<b>0</b>	<b>0%</b>
<b>Objects</b>					
01 Salaries and Wages	\$ 25,246,391	\$ 25,659,104	\$ 25,546,250	-\$ 112,854	-0.4%
02 Technical & Spec Fees	288,334	189,808	189,808	0	0%
03 Communication	472,469	433,198	438,296	5,098	1.2%
04 Travel	608,465	767,360	763,360	-4,000	-0.5%
06 Fuel & Utilities	2,450,454	2,625,743	2,861,267	235,524	9.0%
07 Motor Vehicles	93,855	10,982	9,744	-1,238	-11.3%
08 Contractual Services	6,708,501	7,620,612	6,811,077	-809,535	-10.6%
09 Supplies & Materials	5,439,462	7,545,816	6,702,879	-842,937	-11.2%
10 Equip - Replacement	0	5,000	5,000	0	0%
11 Equip - Additional	2,162,725	1,488,283	1,411,283	-77,000	-5.2%
12 Grants, Subsidies, Contracts	732,504	101,046	101,046	0	0%
13 Fixed Charges	472,322	112,311	188,253	75,942	67.6%
14 Land & Structures	241,701	464,000	1,279,636	815,636	175.8%
<b>Total Objects</b>	<b>\$ 44,917,183</b>	<b>\$ 47,023,263</b>	<b>\$ 46,307,899</b>	<b>-\$ 715,364</b>	<b>-1.5%</b>
<b>Funds</b>					
40 Unrestricted Fund	\$ 26,617,272	\$ 27,023,263	\$ 26,307,899	-\$ 715,364	-2.6%
43 Restricted Fund	18,299,911	20,000,000	20,000,000	0	0%
<b>Total Funds</b>	<b>\$ 44,917,183</b>	<b>\$ 47,023,263</b>	<b>\$ 46,307,899</b>	<b>-\$ 715,364</b>	<b>-1.5%</b>

Note: The fiscal 2004 appropriation does not include deficiencies, and the fiscal 2005 allowance does not reflect contingent reductions.

**Fiscal Summary**  
**USM – University of Maryland Biotechnology Institute**

<u>Unit/Program</u>	<u>FY03 Actual</u>	<u>FY04 Legislative Appropriation</u>	<u>FY04 Working Appropriation</u>	<u>FY03 - FY04 % Change</u>	<u>FY05 Allowance</u>	<u>FY04 - FY05 % Change</u>
02 Research	\$ 44,917,183	\$ 42,851,488	\$ 47,023,263	4.7%	\$ 46,307,899	-1.5%
<b>Total Expenditures</b>	<b>\$ 44,917,183</b>	<b>\$ 42,851,488</b>	<b>\$ 47,023,263</b>	<b>4.7%</b>	<b>\$ 46,307,899</b>	<b>-1.5%</b>
Unrestricted Fund	\$ 26,617,272	\$ 25,253,188	\$ 27,023,263	1.5%	\$ 26,307,899	-2.6%
Restricted Fund	18,299,911	17,598,300	20,000,000	9.3%	20,000,000	0%
<b>Total Appropriations</b>	<b>\$ 44,917,183</b>	<b>\$ 42,851,488</b>	<b>\$ 47,023,263</b>	<b>4.7%</b>	<b>\$ 46,307,899</b>	<b>-1.5%</b>

Note: The fiscal 2004 appropriation does not include deficiencies, and the fiscal 2005 allowance does not reflect contingent reductions.