

RB.34
University of Maryland Center for Environmental Science
University System of Maryland

Operating Budget Data

(\$ in Thousands)

	FY 01	FY 02	FY 03		% Change
	<u>Actual</u>	<u>Working</u>	<u>Allowance</u>	<u>Change</u>	<u>Prior Year</u>
General Funds	\$12,717	\$13,608	\$14,515	\$907	6.7%
Other Unrestricted Funds	4,772	4,215	4,215	0	
Total Unrestricted Funds	17,489	17,824	18,730	907	5.1%
Restricted Funds	<u>14,938</u>	<u>15,456</u>	<u>15,456</u>	<u>0</u>	
Total Funds	\$32,427	\$33,280	\$34,186	\$907	2.7%

* Does not reflect hiring freeze savings of \$129,606 in general funds. Does reflect a budget amendment not yet submitted by the Department of Budget and Management to add \$500,000 in unrestricted funds and \$130,000 in restricted funds.

- With the allowance, funding for the institution would represent 89% of its fiscal 2003 funding guideline. Guideline attainment in fiscal 2002 was also 89%.

Personnel Data

	FY 01	FY 02	FY 03	
	<u>Actual</u>	<u>Working</u>	<u>Allowance</u>	<u>Change</u>
Regular Positions	219.52	230.02	240.02	10.00
Contractual FTEs	<u>42.00</u>	<u>39.00</u>	<u>39.00</u>	<u>0.00</u>
Total Personnel	261.52	269.02	279.02	10.00

Vacancy Data: Regular Positions

Budgeted Turnover: FY 03	2.64	1.10%
Positions Vacant as of 12/31/01	5.00	2.17%

- The institution added 10.5 regular positions during fiscal 2002.
- The allowance would provide 10.00 additional positions associated with the opening of the Aquaculture and Restoration Ecology Lab.

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

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Analysis in Brief

Issues

Budget Structure: Due to the specialized nature of the institution, the University of Maryland Center for Environmental Science funding is budgeted in only one program, Research. The Public Service, Institutional Support, and Plant programs appear applicable. While using other budget programs would allow for a more thorough examination of the institution's budget, the institution maintains that using other budget programs would weaken its position when negotiating indirect cost recovery rates on research grants. **The Department of Legislative Services recommends that the President discuss the process of negotiating indirect cost recovery rates and the implications of using budget programs other than Research.**

Recommended Actions

1. Concur with Governor's allowance.

RB.34
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Operating Budget Analysis

Program Description

The University of Maryland Center for Environmental Science (UMCES) is a research institution for environmental studies. It includes three geographically distinct laboratories under a single administration:

- the Appalachian Laboratory at Frostburg;
- Chesapeake Biological Laboratory at Solomons Island; and
- Horn Point Laboratory at Cambridge.

UMCES primarily focuses its research on the watersheds, estuaries, and coastal areas of the State of Maryland and the greater Chesapeake Bay region. Each of the three UMCES laboratories serves as a regional center, offering education programs about natural sciences to teachers and students from K-12 schools, environmental interest groups, and institutions within and beyond the University System of Maryland that are concerned with environmental research, education, and service. UMCES provides advisory services to local Chesapeake Bay industries and is also the principal source of independent scientific information on environmental matters for Maryland's lawmakers, State agencies, and regional and national coastal management programs.

The Chesapeake Biological Laboratory was founded in 1925, and what is now the center was previously established by statute as the Department of Research and Education (1941), the Natural Resources Institute of the University of Maryland (1961), and the Center for Environmental and Estuarine Studies (1975). The center's mission, reaffirmed in 1997 amendments to the Education Article, is to conduct a comprehensive program to develop and apply predictive ecology for the improvement and preservation of the physical environment. While UMCES does not grant degrees, its faculty members contribute to graduate education by advising, teaching, and supervising the research of students enrolled in the system-wide Marine-Estuarine-Environmental Sciences program. Additional graduate education activities include cooperative programs in fisheries and wildlife management and toxicology.

Fiscal 2002 Actions

The 2002 working appropriation reflects a reduction of \$64,575 as a result of cost containment action taken by the Board of Public Works. The working appropriation does not reflect \$129,606 in additional savings attributable to the hiring freeze. To meet the combined \$194,181 savings target in fiscal 2002, the institution reduced out-of-state travel and contractual services and is holding open vacancies.

Increase in New Positions in Fiscal 2002

The number of positions in the fiscal 2002 working appropriation has increased by 10.50 over the fiscal 2002 legislative appropriation. **Exhibit 1** shows a listing of the new positions. UMCES added these positions pursuant to budget bill language that allows the system to add up to 568 regular positions above the 2002 allowance. Of the new positions, two are contractual conversions.

Exhibit 1

New Positions During Fiscal 2002

<u>Program</u>	<u>Title</u>	<u>Number of Positions</u>
Research	Accounting Clerk	2.00
	Accounting Associate	1.00
	Carpenter	1.00
	Executive Administrative Assistant	1.00
	Faculty	0.50
	Lab Assistant	1.00
	Maintenance Mechanic	1.00
	Research Machinist	1.00
	Secretary	2.00
Total		10.50

Source: University of Maryland Center for Environmental Science

Governor's Proposed Budget

As shown in **Exhibit 2**, the fiscal 2003 allowance is \$34.2 million, an increase of \$906,753, or 2.7% over the fiscal 2002 working appropriation, not including hiring freeze savings. The general fund portion of the budget increases 6.7% and accounts for all of the increase in the budget. Current unrestricted funds, excluding general funds, and restricted funds are level.

The allowance also includes 10.00 new positions, with salary costs of \$200,000. **Exhibit 3** details the new positions in the allowance. All appear in the Research program, because the institution uses no other programs. One position is a contractual conversion. Other personnel increases are \$997,753 and include the 2002 cost-of-living adjustment (COLA) annualization, merit increases, and benefit cost increases.

Exhibit 2

**Governor's Proposed Budget
University of Maryland Center for Environmental Science
(\$ in Thousands)**

How Much It Grows:	General Fund	Other Unrestricted Fund	Total Unrestricted Fund	Restricted Fund	Total
2002 Working Appropriation	\$13,608	\$4,215	\$17,824	\$15,456	\$33,280
2003 Governor's Allowance	14,515	4,215	\$18,730	\$15,456	34,186
Amount Change	\$907	\$0	\$907	\$0	\$907
Percent Change	6.7%	0.0%	5.1%	0.0%	2.7%

Where It Goes:

Personnel Expenses

New positions	\$200
Ongoing personnel expenses	998

Other Changes

New facility (nonpersonnel costs)	675
Facilities renewal switch to bonds	(150)
Contractual services savings	(656)
Deferred or cancelled equipment purchases	(103)
Other reductions	(57)

Total **\$907**

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

Exhibit 3

New Positions in 2003 Allowance

<u>Program</u>		<u>Title</u>	<u>Number of Positions</u>
Research	10.00	Manager	1.00
		Electronics Technician	1.00
		Housekeeping Supervisor	1.00
		Heating, Ventilation, and Air Condition (HVAC) Mechanics	3.00
		HVAC Chief	1.00
		Laboratory Assistant	1.00
		Service Worker	1.00
		Temp Control Mechanic	1.00
Total	10.00		10.00

Source: University System of Maryland

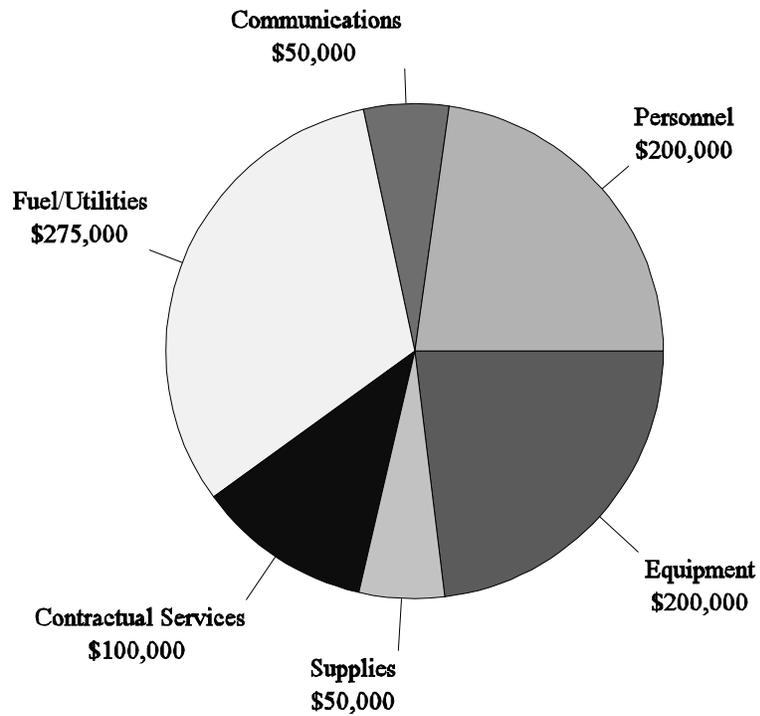
Opening of Aquaculture and Restoration Ecology Laboratory

The primary increase in the allowance is for the opening of the new Aquaculture and Restoration Ecology Laboratory at Horn Point in April 2003. The cost of opening the new building is \$875,000. **Exhibit 4** shows the elements of cost for opening the facility.

The \$19.4 million laboratory will house research in shellfish and finfish aquaculture, experimental ecology, and habitat restoration. It will include wet and dry laboratories, as well as quarantine facilities for studying genetics, diseases, and nonindigenous and harmful species. In addition, the project includes an outdoor facility for oyster aquaculture. Research at the new facility will support the State's oyster restoration program; the restoration of submersed aquatic vegetation, wetlands, oyster reefs, and other critical habitats; the reduction of risk of disease outbreaks; and improvement of water quality consistent with sustainable agriculture.

Exhibit 4

**New Facility Costs
Aquaculture and Restoration Ecology Laboratory
Fiscal 2003**



Source: University of Maryland Center for Environmental Science

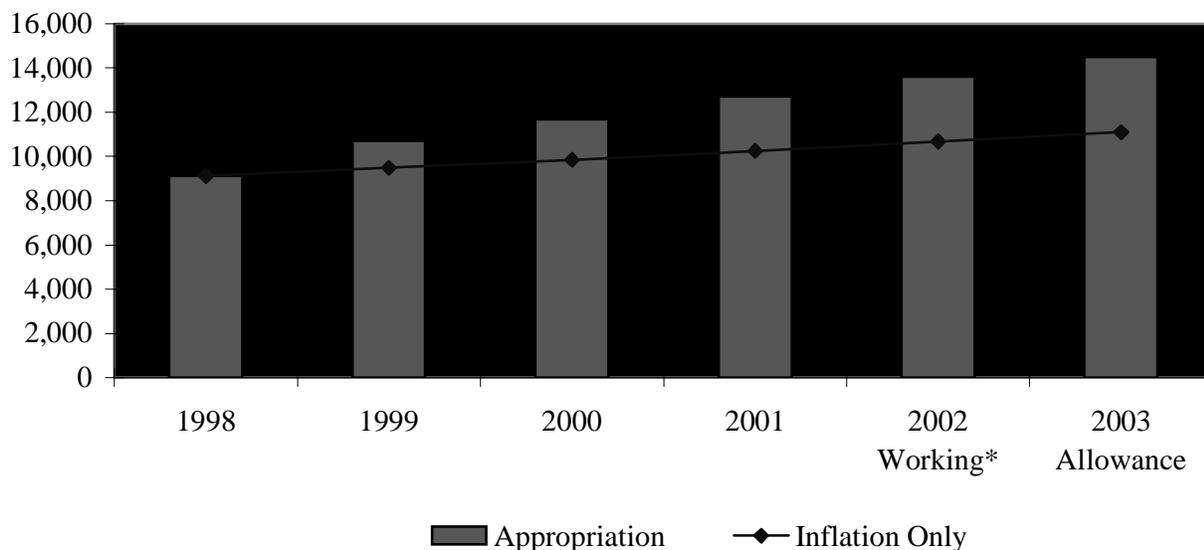
Performance Analysis: Managing for Results

General Fund Increases in Recent Years

Like higher education generally, UMCES has experienced substantial increases in funding in recent years. For UMCES, substantial general fund increases began in fiscal 1999. **Exhibit 5** compares actual general fund appropriations to what might be expected assuming 4% inflation per year.

Exhibit 5

General Fund Appropriations
Fiscal 1998 through 2003
(\$ in Thousands)



* Does not include anticipated hiring freeze savings.

Source: Department of Legislative Services

Research and Employment

Unlike other institutions, UMCES does not have student enrollment. Rather, its main function is research. **Exhibit 6** compares growth in regular positions and in restricted research expenditures from fiscal 1998 through 2002. Restricted research expenditures are those associated with a particular contract or grant for a specified purpose.

Exhibit 6

**Research and Employment
Fiscal 1998 through 2002**

	<u>FY 1998</u>	<u>FY 2002</u>	<u>Cumulative % Change</u>
Restricted Research Expenditures	\$8,850,594	\$15,456,039	74.6%
Regular Positions	193.03	230.02	19.2%
Total Employed FTE	218.03	269.02	23.4%

Source: Governor's Budget Books, 2001 through 2003

Performance

While each institution has its own mission and goals, the activities of each should support the goals of the State Plan for Postsecondary Education ("State Plan"). The specialized nature of UMCES will limit its contribution in some areas, but its performance should generally support the State goals.

The first goal of the State Plan is to "achieve and sustain a preeminent statewide array of postsecondary educational institutions that are recognized for their distinctiveness and their excellence nationally and internationally." One measure of eminence is the ability to attract contract and grant support, especially through competitive awards. Measures related to contract and grant support appear in **Exhibit 7**.

Exhibit 7

Goal 1: Achieve and sustain a preeminent statewide array of postsecondary educational institutions that are recognized for their distinctiveness and their excellence nationally and internationally.

	<u>FY 1999 Actual</u>	<u>FY 2000 Actual</u>	<u>FY 2001 Actual</u>	<u>Total % Change 99-02</u>	<u>FY 2002 Est.</u>	<u>FY 2003 Est.</u>	<u>FY 2004 Goal</u>
Private support (\$ in millions)	\$0.8	\$0.8	\$1.4	75.0%	\$2.0	\$2.2	\$2.5
Two-year average of extramural research funding (\$ in millions)	\$14.0	\$17.0	\$18.3	30.7%	\$18.7	\$19.3	\$20.0

Source: 2003 Governor's Budget Books; University of Maryland Center for Environmental Science

RB.34 - USM - University of Maryland Center for Environmental Science

The third and fourth goals of the State Plan are to promote the State's economic vitality and to promote basic and applied research. The institution has a number of measures related to these goals, as shown in **Exhibit 8**. In the area of applied research, the institution is increasing the number of Chesapeake Bay restoration research projects to strengthen predictive ecology for Maryland. In research and development (R&D), total expenditures and the standing of the institution on per faculty R&D among Carnegie Research I universities both appear to be increasing. The number of grant awards in excess of \$300,000 has also increased since fiscal 1999. With regard to publication, the number of publications declined in fiscal 2000, and actual data for fiscal 2001 is not yet available. The number of citations per publication has increased.

Exhibit 8

Goal 4: Support and encourage basic and applied research.

	<u>Actual 1999</u>	<u>Actual 2000</u>	<u>Actual 2001</u>	<u>Total Chg. 99-01</u>	<u>Est. 2002</u>	<u>Est. 2003</u>	<u>Goal 2004</u>
# Chesapeake Bay restoration projects	102	106	109	6.9%	115	120	125
Total R&D expenditures (\$ in millions)	\$26.8	\$31.6	\$33.0*	23.1%	\$34.0	\$35.0	\$36.0
Research expenditures per faculty member as compared to Carnegie Research I universities (percentile)	87	98	>85*	n/a	>85	>85	>85
# grants awarded in excess of \$300,000	13.0	10.0	15.0	15.4%	17.0	18.0	20.0
# peer-reviewed publications	132	112	120*	-9.1%	130	135	140
# citations per peer-reviewed publications	n/a	11.6	13.0	n/a	14.0	14.5	15.0

* Estimated

Sources: Maryland Higher Education Commission Performance Accountability Report; 2003 Governor's Budget Books

The fifth goal of the State plan is to "strengthen teacher preparation and improve the readiness of students for postsecondary education." As a research center, the institution does not have teacher preparation programs, but its environmental education programs for K-12 teachers and students are furthering this goal, as shown in **Exhibit 9**. The number of K-12 teachers participating in the environmental education program increased dramatically in fiscal 2001, because each of UMCES' three labs dedicated a faculty member to environmental education with an emphasis on teacher training.

Exhibit 9

Goal 5: Strengthen teacher preparation and improve the readiness of students for postsecondary education.

	<u>Actual 1999</u>	<u>Actual 2000</u>	<u>Actual 2001</u>	<u>Total Chg. 99-01</u>	<u>Est. 2002</u>	<u>Est. 2003</u>	<u>Goal 2004</u>
K-12 students participating in environmental education program (estimated)	12,000	12,000	13,000	8.3%	14,000	14,500	15,000
K-12 teachers training in environmental education program	24	35	141	487.5%	150	175	200

Sources: Maryland Higher Education Commission Performance Accountability Report; 2003 Governor's Budget Books

In summary, the institution is fulfilling its mission and furthering statewide goals. The institution has shown its commitment to improving teacher preparation and college readiness through the growth of its K-12 environmental education programs. Its research, by almost any measure, is increasing in volume and is relevant to other researchers and to the State.

Issues

1. Budget Structure

Due to the specialized nature of the institution, UMCES funding is budgeted in only one program, Research. Its expenditures and employees, regardless of their function, are considered part of the Research program.

Several other budget programs appear to be relevant to UMCES. For example, the institution has made a strong commitment to its K-12 environmental education programs. They are outreach and education programs and do not further research. In another institution, they might be in the Public Service program. Second, the institution has three laboratory locations across the State. It is currently building a technologically advanced, mechanically complex new laboratory at Horn Point. The operation and maintenance of UMCES' laboratories and other facilities would fall under the Plant program at any other institution. Finally, the institution has a president, three vice presidents, and administrative and fiscal staff. At any other institution, that general administration activity would be considered Institutional Support.

The amount of funding outside the Research program is small but not insignificant. An initial review of the personnel detail provided in the Governor's Budget Books suggests that an estimated 36% of UMCES' 230 positions in fiscal 2002 may fall in programs other than Research. The fiscal 2002 appropriation associated with those positions is \$3.4 million, or 23% of the institution's spending for personnel.

Classifying these positions and expenditures as research obscures the institution's true overhead costs, prevents a thorough examination of the institution's budget, and may skew systemwide analyses. The implications of the State's investment in facilities, such as the Aquaculture and Restoration Ecology Laboratory opening this year, would be more apparent if the institution used the Plant budget program. Particularly as the institution grows, an examination of its investments in plant, pre- and post-award research support, K-12 programs, and other non-research activities will be advisable.

Using all relevant budget programs may have disadvantages also. According to the institution, an exclusively Research program budget provides an advantage in the negotiation of indirect cost recovery rates on federal grants. Federal indirect cost recovery provided 8.9% of the institution's unrestricted budget in fiscal 2001, third to state appropriations (73%) and educational sales and services (17%). Using Institutional Support, Public Service, and Plant programs may reduce the basis of the institution's current indirect cost recovery rate.

The Department of Legislative Service recommends that the President discuss the process of negotiating indirect cost recovery rates and the implications of using budget programs other than Research.

Recommended Actions

1. Concur with Governor's allowance.

Current and Prior Year Budgets

Current and Prior Year Budgets
University of Maryland Center for Environmental Science
(\$ in Thousands)

	<u>General</u> <u>Fund</u>	<u>Other</u> <u>Unrestricted</u> <u>Fund</u>	<u>Total</u> <u>Unrestricted</u> <u>Fund</u>	<u>Restricted</u> <u>Fund</u>	<u>Total</u>
Fiscal 2001					
Legislative Appropriation	\$12,717	\$3,507	\$16,225	\$15,326	\$31,551
Deficiency Appropriation	0	0	0	0	0
Budget Amendments	60	1,428	1,488	110	1,598
Reversions and Cancellations	0	(224)	(224)	(498)	(722)
Actual Expenditures	\$12,777	\$4,711	\$17,489	\$14,938	\$32,427
Fiscal 2002					
Legislative Appropriation	\$13,673	\$3,715	\$17,388	\$15,326	\$32,714
Budget Amendments	(65)	500	435	130	565
Working Appropriation	\$13,608	\$4,215	\$17,824	\$15,456	\$33,279

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

Fiscal 2001

In fiscal 2001, the institution spent \$875,810 more than its appropriation. The increase was all unrestricted funds, including a \$60,000 general fund transfer from the University of Maryland Biotechnology

RB.34 - USM - University of Maryland Center for Environmental Science

Institute for the Maryland Sea Grant. Other unrestricted fund increases were related to indirect cost recovery and sales of analytical services. The institution increased spending authority in restricted funds for contracts and grants, but some grants anticipated in fiscal 2001 were received in early fiscal 2002, resulting in a cancellation of restricted funds of \$498,327.

Fiscal 2002

In fiscal 2002, cost containment reduced the institution's general fund appropriation by \$64,575. A budget amendment not yet submitted by the Department of Budget and Management adds \$500,000 in unrestricted funds related to increased sales of analytical services. It also adds \$130,000 in restricted funds related to private contracts and grants.

RB.34 - UMS - University of Maryland Center for Environmental Science

Appendix 2

Object/Fund Difference Report
 UMS - University of Maryland Center for Environmental Science

Object/Fund	FY02		FY03 Allowance	FY02 - FY03 Amount Change	Percent Change
	FY01 Actual	Working Appropriation			
Positions					
01 Regular	219.52	230.02	240.02	10.00	4.3%
02 Contractual	42.00	39.00	39.00	0	0%
Total Positions	261.52	269.02	279.02	10.00	3.7%
Objects					
01 Salaries and Wages	\$ 18,967,024	\$ 19,745,156	\$ 20,942,909	\$ 1,197,753	6.1%
02 Technical & Spec Fees	151,712	35,807	35,807	0	0%
03 Communication	348,480	458,796	508,796	50,000	10.9%
04 Travel	807,518	705,194	705,194	0	0%
06 Fuel & Utilities	1,043,842	852,647	1,177,137	324,490	38.1%
07 Motor Vehicles	524,062	557,783	552,214	(5,569)	(1.0%)
08 Contractual Services	6,915,397	7,132,835	6,476,359	(656,476)	(9.2%)
09 Supplies & Materials	2,077,862	1,413,828	1,463,828	50,000	3.5%
10 Equip - Replacement	0	317,013	317,013	0	0%
11 Equip - Additional	932,493	1,369,204	1,465,759	96,555	7.1%
12 Grants, Subsidies, Contr	39,466	10,525	10,525	0	0%
13 Fixed Charges	356,632	289,612	289,612	0	0%
14 Land & Structures	262,191	391,277	241,277	(150,000)	(38.3%)
Total Objects	\$ 32,426,679	\$ 33,279,677	\$ 34,186,430	\$ 906,753	2.7%
Funds					
40 Unrestricted Fund	\$ 17,488,967	\$ 17,823,638	\$ 18,730,391	\$ 906,753	5.1%
43 Restricted Fund	14,937,712	15,456,039	15,456,039	0	0%
Total Funds	\$ 32,426,679	\$ 33,279,677	\$ 34,186,430	\$ 906,753	2.7%

Note: Full-time and contractual positions and salaries are reflected for operating budget programs only.

Fiscal Summary
 USM - University of Maryland Center for Environmental Science

<u>Unit/Program</u>	<u>FY01 Actual</u>	<u>FY02</u>		<u>FY01 - FY02 % Change</u>	<u>FY03 Allowance</u>	<u>FY02 - FY03 % Change</u>
		<u>Legislative Appropriation</u>	<u>Working Appropriation</u>			
02 Research	\$ 32,426,679	\$ 32,714,252	\$ 33,279,677	2.6%	\$ 34,186,430	2.7%
Total Expenditures	\$ 32,426,679	\$ 32,714,252	\$ 33,279,677	2.6%	\$ 34,186,430	2.7%
Unrestricted Fund	\$ 17,488,967	\$ 17,388,213	\$ 17,823,638	1.9%	\$ 18,730,391	5.1%
Restricted Fund	14,937,712	15,326,039	15,456,039	3.5%	15,456,039	0%
Total Appropriations	\$ 32,426,679	\$ 32,714,252	\$ 33,279,677	2.6%	\$ 34,186,430	2.7%