

Audit Report

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**University System of Maryland  
University of Maryland Baltimore County**

August 2009

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**OFFICE OF LEGISLATIVE AUDITS  
DEPARTMENT OF LEGISLATIVE SERVICES  
MARYLAND GENERAL ASSEMBLY**

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**DEPARTMENT OF LEGISLATIVE SERVICES**  
**OFFICE OF LEGISLATIVE AUDITS**  
**MARYLAND GENERAL ASSEMBLY**

**Karl S. Aro**  
Executive Director

**Bruce A. Myers, CPA**  
Legislative Auditor

August 6, 2009

Delegate Steven J. DeBoy, Sr., Co-Chair, Joint Audit Committee  
Senator Verna L. Jones, Co-Chair, Joint Audit Committee  
Members of Joint Audit Committee  
Annapolis, Maryland

Ladies and Gentlemen:

We have audited the University System of Maryland (USM) – University of Maryland Baltimore County (UMBC) for the period beginning October 1, 2005 and ending September 30, 2008. UMBC is a comprehensive public research institution of the University System of Maryland and offers a broad range of baccalaureate, graduate, and doctoral programs in the liberal arts, sciences, and engineering disciplines.

Our audit disclosed that cash receipts received at a number of locations were not adequately verified to deposit. In addition, sufficient controls were not established over corporate purchasing cards. For example, the employee who ordered new cards also had access to the cards received from the bank. Furthermore, control deficiencies were noted over UMBC's information systems security. For example, adequate password controls were not in place over network authentication, and access to critical firewalls and administrative computers was not sufficiently restricted.

Finally, internal control and record keeping deficiencies existed in the areas of payroll, procurements, and equipment.

An Executive Summary of our findings can be found on page 5. The response from the USM Office, on behalf of UMBC, to our findings and recommendations is included as an appendix to this report. We wish to acknowledge the cooperation extended to us during the course of this audit by UMBC.

Respectfully submitted,

Bruce A. Myers, CPA  
Legislative Auditor



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# Executive Summary

**Legislative Audit Report on University System of Maryland (USM)  
University of Maryland Baltimore County (UMBC)  
August 2009**

- **Internal controls over the verification of cash receipts at a number of locations on campus were not adequate. For example, the documents on which collections received in the mail at the Bursar's Office were initially recorded were forwarded, along with the collections, to a second employee for recording in the appropriate UMBC automated system.**

Adequate controls should be established to ensure that collections are recorded upon receipt, adequately secured, and verified to deposit.

- **Sufficient controls were not established over corporate purchasing cards, as required by the Comptroller of the Treasury's *Corporate Purchasing Card Program Policy and Procedures Manual*. For example, an employee who could order new cards also had access to the cards after they were received from the bank, and UMBC split certain purchasing card transactions into smaller purchases to circumvent single transaction spending limits.**

UMBC should comply with the requirements of the Comptroller of the Treasury's *Corporate Purchasing Card Program Policy and Procedures Manual*.

- **Control deficiencies were noted over UMBC's information systems security. Adequate password controls were not in place over network authentication, all critical database administrator activities were not recorded and monitored, and administrator access to critical firewalls and administrative computers was not sufficiently restricted.**

UMBC should take the recommended actions to improve security over its information systems.

- **Certain control and record keeping deficiencies existed with regards to UMBC's payroll, procurements, and equipment.**

UMBC should take the recommended actions to improve controls in these areas.



## **Background Information**

### **Agency Responsibilities**

The University of Maryland Baltimore County (UMBC) is a comprehensive public research institution of the University System of Maryland and operates under the jurisdiction of the System's Board of Regents. UMBC offers a broad range of baccalaureate, graduate, and doctoral programs in the liberal arts, sciences, and engineering disciplines. Student enrollment for the Fall 2008 semester totaled 12,268, including 9,612 undergraduate students and 2,656 graduate and doctoral students. During fiscal year 2008, UMBC's revenues totaled approximately \$329 million, of which \$86 million were derived from tuition and fees, and \$84 million were received based on an appropriation from the State's General Fund. UMBC's expenditures for fiscal year 2008 totaled approximately \$326 million.

### **Ongoing Investigation of Misappropriation of Construction Funds**

In our prior audit report, dated May 12, 2006, we commented upon an investigation being conducted by the Office of the Attorney General – Criminal Division regarding the misappropriation of certain campus construction funds. The investigation determined that kitchen cabinets and bathroom fixtures, valued at approximately \$34,000, which were purchased with UMBC funds, were installed in a residence owned by a UMBC construction supervisor. The investigation further determined that other questionable benefits may have been provided to two other UMBC employees by the contractors that worked on this project. As of our prior audit, the investigation had resulted in charges being filed against one UMBC employee and one contractor; both pled guilty and were convicted of their respective charges.

The Office of the Attorney General – Criminal Division continues to investigate this matter and, as of March 25, 2009, 10 individuals had been convicted of various charges and had been ordered to pay restitution and fines totaling \$363,000. These convictions include three former UMBC construction service employees and seven individuals employed by various contractors that had conducted business with UMBC. The continued investigation identified an over-billing scheme that created a fund that was used to finance an all-expenses-paid golf trip to Ireland for the co-conspirators and others.

## **Questionable Purchases**

In June 2008, the Comptroller of the Treasury – General Accounting Division contacted UMBC regarding a questionable corporate purchasing card purchase of \$2,900 made in one UMBC department in May 2008. In June 2008, UMBC's Management Advisory Services Unit initiated an investigation of all of that department's corporate purchasing card purchases made during the period from July 2005 through June 2008, as well as selected questionable purchases that were paid using the invoice payment transmittal process. As a result of this investigation, UMBC identified a number of questionable purchases made by an employee, as directed by the employee's supervisor. The supervisor resigned from UMBC management in August 2008. We were advised that, as of July 31, 2009, this individual was no longer an employee of UMBC. In August 2008, UMBC referred this matter to the Office of the Attorney General – Criminal Division. As of May 11, 2009, this matter was still under investigation by the Division.

## **Status of Findings From Preceding Audit Report**

Our audit included a review to determine the status of the nine findings contained in our preceding audit report dated May 12, 2006. We determined that UMBC satisfactorily addressed seven of the aforementioned nine findings. The remaining two findings are repeated in this report.

# Findings and Recommendations

## Cash Receipts

### **Finding 1**

**Cash receipts received at several locations were not adequately verified to deposit.**

### **Analysis**

Procedures and controls over deposit verifications for certain collections were inadequate. According to its records, the University of Maryland Baltimore County's (UMBC) cash receipts (excluding credit card sales and lock box collections) totaled approximately \$98.5 million during fiscal year 2008. We reviewed procedures and controls over cash receipts received in the mail at the Bursar's Office, which totaled approximately \$25.5 million during fiscal year 2008, and certain cash collection procedures and controls at two departments that forwarded their collections to the Bursar's Office, which collected cash receipts totaling \$3.2 million during fiscal year 2008. Our review disclosed the following conditions:

- At the Bursar's Office, mail receipts were initially recorded on a mail log. However, the related collections, along with the log, were forwarded to a second employee for processing. Rather, the log should have been forwarded directly to the individual who was responsible for verifying that all recorded collections were deposited. As a result, the log could be altered to conceal a misappropriation.
- Our test of collections, totaling approximately \$207,000 made over 16 days during fiscal year 2008 at one department, disclosed that, for all collections, there was no documentation to substantiate that the recorded cash receipts were forwarded to the Bursar's Office for deposit. Subsequently, we were able to account for these collections and verify that they were deposited.
- At the other department tested, the initial record of receipt was not used to substantiate that recorded collections had been forwarded to the Bursar's Office for deposit. Rather, for verification purposes, the department used the transmittal prepared by the employee who delivered the receipts with the transmittal to the Bursar's Office. In addition, although collections received were initially recorded on a log, the date of collection was not reflected on the log.

Under these conditions, cash receipts could be lost or misappropriated without timely detection. The Comptroller of the Treasury's *Accounting Procedures Manual* requires that an employee independent of the collection process verify that all receipts initially recorded were subsequently deposited.

### **Recommendation 1**

**We recommend**

- a. that the mail logs include the date of collection and be forwarded, by the person who initially records the collections, directly to the individual who performs the deposit verification, and that these documents be used in the verification process; and**
- b. that the departments obtain and retain documentation from the Bursar's Office that the receipts were received.**

**We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

## **Corporate Purchasing Cards**

### **Finding 2**

**Adequate controls were not established over corporate purchasing cards.**

#### **Analysis**

UMBC lacked adequate controls over its corporate purchasing cards. According to the bank's records, as of September 2008, corporate purchasing cards had been issued to 301 employees, and the related expenditures totaled approximately \$15 million during fiscal year 2008. Our review disclosed the following conditions:

- Our test of 14 purchases, totaling approximately \$90,000 made with corporate purchasing cards during the period from July 2007 through September 2008, disclosed that 5 of these transactions, totaling approximately \$28,000, appeared to have been split into smaller purchases to avoid individual transaction spending limits and to circumvent approval requirements. For example, the purchase of a compressor, with a cost of \$5,100, was split into two smaller transactions to avoid exceeding the \$5,000 single transaction limit. Rather, competitive bids should have been solicited and required approvals obtained, such as from the UMBC procurement officer.
- The employee designated as the Assistant Purchasing Card Program Administrator had the ability to order new cards, had access to new cards after they were received from the bank, and had administrative access to establish

cardholder capabilities (for example, to allow cardholders to approve their own transactions) in UMBC's automated computer system. Consequently, cards could be inappropriately issued, and unauthorized purchases could be made without timely detection.

- There was no documentation to support that the University performed required reviews of cardholder credit limits. Our review of the University's cardholders, who had active cards for at least six months as of the end of fiscal year 2008, disclosed that UMBC had assigned unnecessarily high credit limits for most of these cards, thereby increasing its exposure to potential fraud and abuse. Specifically, we noted that the average monthly expenditures for 211 of the 242 cards reviewed were less than half of the monthly credit limits, including 124 cards for which average monthly expenditures were less than 20 percent of their credit limits. For example, one cardholder had a credit limit that was approximately \$53,000 greater than any month's purchases during fiscal year 2008. Additionally, one cardholder had two cards with a combined credit limit in excess of the \$100,000 maximum liability insurance limit per cardholder.

The Comptroller of the Treasury's *Corporate Purchasing Card Program Policy and Procedures Manual* prohibits splitting purchases to circumvent procurement requirements and establishes maximum limits on individual transaction purchases to facilitate agency control over the use of the cards. The *Manual* also states that the employee that has access to the cards when received from the bank should not be able to order cards from the bank. Furthermore, the *Manual* requires agencies to establish reasonable credit limits.

In addition, there are UMBC policies requiring the periodic review of credit card limits and generally prohibiting splitting purchases to avoid approvals.

## **Recommendation 2**

### **We recommend**

- a. that purchasing card transactions not be split to circumvent controls;**
- b. that the employee who has the capability to order cards not have access to the related cards; and**
- c. that cardholder credit limits be established that are commensurate with actual card usage, be periodically reviewed and adjusted as necessary, and not exceed the State's related liability insurance coverage of \$100,000 per cardholder.**

**We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

## Payroll

### **Finding 3**

**Proper internal controls were not established over the processing of salary adjustments.**

#### **Analysis**

Duties were not adequately separated for the processing of salary adjustments. Specifically, two employees had the capability to both initiate and approve salary adjustments on UMBC's automated payroll system. As a result, unauthorized salary adjustments could be processed without detection. According to the State's records, UMBC's fiscal year 2008 salary and fringe benefit payments totaled approximately \$183 million.

#### **Recommendation 3**

**We recommend that employees authorized to approve salary adjustments on UMBC's automated payroll system not also have the capability to initiate these adjustments. We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

## Information Systems Security and Control

#### **Background**

The Office of Information Technology (OIT) manages the development, maintenance, and support of UMBC's information technology (IT) infrastructure, including IT support for academic teaching and research, networking, and business information systems. OIT maintains a campus-wide network that supports both administrative and academic operations that include financial operations, student administration, and human resources.

### **Finding 4**

**Adequate password and user account controls were not established over certain critical systems.**

#### **Analysis**

Password and user account controls over certain critical systems were inadequate. Specifically, for the network authentication system, passwords were set to never expire and account lockout was not used. In addition, user accounts for 19 terminated employees remained active on a critical production system for periods of one to four months after the employees left UMBC employment, which increased security exposures. Accordingly, defined control settings for passwords

and accounts did not comply with relevant provisions of the USM's *Guidelines in Response to the State IT Security Policy* and federal guidelines (which, as provided for in USM's *Guidelines*, UMBC has elected to follow). Similar conditions were commented upon in our preceding audit report.

#### **Recommendation 4**

**We again recommend that UMBC comply with account and password requirements and recommendations of the aforementioned USM *Guidelines in Response to the State IT Security Policy* and the relevant federal guidelines, as applicable.**

#### **Finding 5**

**Security monitoring controls were inadequate since all critical activities were not recorded and independent reviews were not performed.**

#### **Analysis**

The controls for monitoring the security of a critical database and a related application were inadequate. Specifically, database administrator activity for the critical database was not recorded because database audit logging was not enabled. In addition, we were advised that the database administrators were responsible for monitoring all database security reports, even though this function should have been performed by independent employees. Furthermore, critical security reports generated for the related production application were reviewed by an individual capable of making security-related changes to the application. Finally, these reviews were not documented. As a result of these conditions, unauthorized or inappropriate activities affecting the integrity of this database and the related application could occur and go undetected.

#### **Recommendation 5**

**We recommend that UMBC**

- a. enable database auditing capabilities to record database administrator activity;**
- b. ensure that reviews of security reports for the database and related application are performed by individuals independent of the modification function; and**
- c. ensure that that these reviews and any resulting investigations are documented, with the documentation retained for subsequent verification.**

**Finding 6**

**Access to firewalls and modifications of related access rules were not adequately restricted.**

**Analysis**

Controls over administrative access to critical firewalls and modifications of related access rules were inadequate. Specifically, we noted the following conditions:

- UMBC's network included a firewall modification application, which allowed all full-time faculty and staff members the ability to modify certain firewall access rules as defined on two critical firewalls. Specifically, the firewall modification application had a vulnerability that improperly allowed these faculty and staff to modify the firewall access rules for workstations and servers for which these employees were not responsible. As a result of this vulnerability, there was a lack of assurance as to the propriety of the access rules protecting critical workstations/servers on the internal network.
- The user account and password used for administering the firewalls were stored in plain text files on the server hosting the website used by faculty and staff to make the aforementioned changes to these firewalls. If this server were compromised by an attacker, the firewall administrative user account and password would be readily accessible to unauthorized personnel and could be used to compromise the firewalls.

**Recommendation 6****We recommend**

- a. that UMBC change the firewall modification application to eliminate the aforementioned vulnerability, and**
- b. that the firewall administrative user account and password be adequately secured and protected.**

**Finding 7**

**UMBC's computer network was not adequately secured.**

**Analysis**

Key administrative computers (for example, network control devices) were not adequately protected. While UMBC separated its network into security zones and implemented network traffic filtering procedures, we noted that those procedures were not sufficient because access to these key administrative computers was not adequately restricted. For example, firewall access rules allowed unnecessary

access to the aforementioned network control devices from all untrusted UMBC network segments (for example, computer labs). Protecting critical administrative portions of UMBC's network by use of proven security measures (for example, properly configured network firewalls) is essential in ensuring the integrity of the network and its internal devices. Similar conditions were commented upon in our preceding audit report.

#### **Recommendation 7**

**We again recommend that UMBC take the necessary actions to improve network security to protect its internal network. We made detailed recommendations to UMBC, which, if implemented, should provide for adequate security over the described network components.**

### **Procurement of Goods and Services**

#### **Finding 8**

**UMBC made frequent purchases from two vendors without obtaining competitive bids and entering into written contracts.**

#### **Analysis**

UMBC repeatedly procured janitorial supplies and services for campus renovations from two vendors without soliciting competitive bids and entering into written contracts. Specifically, during the period from July 2006 to September 2008, UMBC paid approximately \$315,000 and \$355,000, respectively, to the two vendors for such goods and services. However, UMBC had not obtained competitive bids for the purchases or entered into written contracts with the vendors. In this regard, most of the purchases were made using the corporate purchasing card and were \$5,000 or less (which do not require formal competitive bids). Since the purchases were not consolidated, UMBC's leverage as a high-volume purchaser may not have been maximized.

The University System of Maryland (USM) *Procurement Policies and Procedures* require that contracts for goods or services of \$5,000 or more be awarded based on competitive bidding.

#### **Recommendation 8**

**We recommend that UMBC**

- a. consolidate procurements of ongoing services to maximize buying power when possible, and**
- b. ensure that these procurements comply with the USM *Procurement Policies and Procedures*.**

## Equipment

### **Finding 9**

**UMBC did not comply with certain USM equipment policies regarding inventory and sensitive equipment.**

### **Analysis**

UMBC did not comply with certain USM equipment policies. According to its records, as of September 30, 2008, the value of UMBC's equipment totaled approximately \$81 million, including \$18 million in non-capital equipment. USM policy defines non-capital equipment as sensitive equipment items costing less than \$5,000. We noted the following conditions:

- As of October 2008, physical inventories of capital and non-capital equipment had not been conducted since fiscal year 2005. The *USM Policy for Capitalization and Inventory Control* requires that a complete physical inventory of capital equipment be completed every two years and a complete inventory of non-capital equipment be performed every three years.
- UMBC's procedures for certain sensitive equipment did not meet the minimum requirements established in the *USM Policy for Capitalization and Inventory Control*. Specifically, UMBC improperly excluded computers with an acquisition value of \$750 or less from the definition of non-capital equipment that must be recorded, tagged, and inventoried. The aforementioned *USM Policy* states that computers should be included in the definition of non-capital equipment, regardless of the cost.

### **Recommendation 9**

**We recommend that UMBC comply with the aforementioned requirements of the *USM Policy for Capitalization and Inventory Control*.**

## **Audit Scope, Objectives, and Methodology**

We have audited the University System of Maryland (USM) – University of Maryland Baltimore County (UMBC) for the period beginning October 1, 2005 and ending September 30, 2008. The audit was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

As prescribed by State Government Article, Section 2-1221 of the Annotated Code of Maryland, the objectives of this audit were to examine UMBC's financial transactions, records and internal controls, and to evaluate its compliance with applicable State laws, rules, and regulations. The areas addressed by the audit included cash receipts, procurements and disbursements, information systems, student accounts receivable, payroll, and equipment. We also determined the status of the findings included in our preceding audit report.

In planning and conducting our audit, we focused on the major financial-related areas of operations based on assessments of materiality and risk. Our audit procedures included inquiries of appropriate personnel, inspection of documents and records, and observations of UMBC's operations. We also tested transactions and performed other auditing procedures that we considered necessary to achieve our objectives. Data provided in this report for background or informational purposes were deemed reasonable, but were not independently verified.

Our audit did not include certain support services (such as endowment accounting and bond financing) provided to UMBC by the USM Office. These support services are included within the scope of our audit of the USM Office. In addition, our audit did not include an evaluation of internal controls for federal financial assistance programs and an assessment of UMBC's compliance with federal laws and regulations pertaining to those programs because the State of Maryland engages an independent accounting firm to annually audit such programs administered by State agencies, including UMBC.

UMBC's management is responsible for establishing and maintaining effective internal control. Internal control is a process designed to provide reasonable assurance that objectives pertaining to the reliability of financial records, effectiveness and efficiency of operations including safeguarding of assets, and compliance with applicable laws, rules, and regulations are achieved.

Because of inherent limitations in internal control, errors or fraud may nevertheless occur and not be detected. Also, projections of any evaluation of internal control to future periods are subject to the risk that conditions may change or compliance with policies and procedures may deteriorate.

Our reports are designed to assist the Maryland General Assembly in exercising its legislative oversight function and to provide constructive recommendations for improving State operations. As a result, our reports generally do not address activities we reviewed that are functioning properly.

This report includes findings relating to conditions that we consider to be significant deficiencies in the design or operation of internal control that could adversely affect UMBC's ability to maintain reliable financial records, operate effectively and efficiently, and/or comply with applicable laws, rules, and regulations. Our report also includes findings regarding significant instances of noncompliance with applicable laws, rules, or regulations. Other less significant findings were communicated to UMBC that did not warrant inclusion in this report.

The response from the USM Office, on behalf of UMBC, to our findings and recommendations is included as an appendix to this report. As prescribed in the State Government Article, Section 2-1224 of the Annotated Code of Maryland, we will advise the System regarding the results of our review of its response.

APPENDIX



OFFICE OF THE CHANCELLOR

August 4, 2008

Mr. Bruce A. Myers  
Legislative Auditor  
Office of Legislative Audits  
Department of Legislative Services  
301 West Preston Street, Room 1202  
Baltimore, Maryland 21201

Re: Audit of University System of  
Maryland - University of  
Maryland, Baltimore County  
Period of Audit: October 1, 2005  
and ending September 30,  
2008

Dear Mr. Myers:

I have enclosed the University System of Maryland's response to your draft report covering the examination of the accounts and records of the University System of Maryland – University of Maryland, Baltimore County. Our comments refer to the individual items contained in the report.

Sincerely,

*WE Kirwan*  
William E. Kirwan  
Chancellor

Enclosure

WEK:mpk

cc: Dr. Freeman A. Hrabowski, President, USM-UMBC  
Mr. Clifford Kendall, Chair, Board of Regents, USM  
Mr. Kevin M. O'Keefe, Chair, MHEC  
Mr. Robert L. Page, Comptroller, USM  
Dr. James E. Lyons, Sr., Secretary of Higher Education, MHEC  
Mr. David Mosca, Director of Internal Audit, USM

1807  
University of Maryland,  
Baltimore

1856  
University of Maryland,  
College Park

1865  
Bowie State University

1866  
Towson University

1886  
University of Maryland  
Eastern Shore

1898  
Frostburg State University

1900  
Coppin State University

1925  
Salisbury University

1925  
University of Baltimore

1925  
University of Maryland  
Center for Environmental  
Science

1947  
University of Maryland  
University College

1966  
University of Maryland,  
Baltimore County

1985  
University of Maryland  
Biotechnology Institute

**RESPONSE TO THE LEGISLATIVE AUDIT REPORT  
UNIVERSITY SYSTEM OF MARYLAND  
UNIVERSITY OF MARYLAND, BALTIMORE COUNTY**

**FOR THE PERIOD OCTOBER 1, 2005 – SEPTEMBER 30, 2008**

## **Cash Receipts**

### **Finding 1**

**Cash receipts received at several locations were not adequately verified to deposit.**

### **Recommendation 1**

#### **We recommend**

- a. the mail logs include the date of collection and be forwarded, by the person who initially records the collections, directly to the individual who performs the deposit verification, and that these documents be used in the verification process; and**
- b. that the departments obtain and retain documentation from the Bursar's Office that the receipts were received.**

**We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

### **Response 1**

The University concurs.

- a. In the Departments cited, the University has implemented new procedures to ensure that mail logs include the date of collection and are being forwarded by the person who initially records the collections directly to the individual who performs the deposit verification, and that these documents are being used in the verification process; and
- b. while all Departments routinely obtain and retain documentation from the Bursar's Office that receipts were received, the Department cited is now using this documentation to adequately verify receipts to deposit.

## **Corporate Purchasing Card**

### **Finding 2**

**Adequate controls were not established over corporate purchasing cards.**

### **Recommendation 2**

#### **We recommend**

- a. That purchasing card transactions not be split to circumvent controls;**
- b. That the employee who has the capability to order cards not have access to the related cards;**
- c. That cardholder credit limits be established that are commensurate with actual card usage, be periodically reviewed and adjusted as necessary, and not exceed the State's related liability insurance coverage of \$100,000 per cardholder.**

**RESPONSE TO THE LEGISLATIVE AUDIT REPORT  
UNIVERSITY SYSTEM OF MARYLAND  
UNIVERSITY OF MARYLAND, BALTIMORE COUNTY**

**FOR THE PERIOD OCTOBER 1, 2005 – SEPTEMBER 30, 2008**

**We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

**Response 2**

The University concurs.

- a. This issue has been discussed with the Purchasing Card holders and supervisors cited, and we highlight this aspect in University Purchasing Card training to ensure that card holders understand that splitting purchasing card transactions, that circumvent controls, are prohibited.
- b. The employee who has the capability to order cards no longer has access to the related cards.
- c. A new Purchasing Card Administrator is now in place, and the University is now documenting its periodic review of cardholder credit limits to ensure assigned limits are commensurate with actual card usage, adjusting the assigned credit limits as necessary. Specifically, the University reviewed all 211 cards cited and all 211 cards have either had their limits reduced or documentation has been provided as to why the assigned limit is necessary. Furthermore, the University will ensure credit limits do not exceed the State's related liability insurance coverage of \$100,000 per cardholder. This language has been added to the UMBC Purchasing Card Users Guide.

**Payroll**

**Finding 3**

**Proper internal controls were not established over the processing of salary adjustments.**

**Recommendation 3**

**We recommend that employees authorized to approve salary adjustments on UMBC's automated payroll system not also have the capability to initiate these adjustments. We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

**Response 3**

The University concurs.

Given that a critical upgrade to the automated human resource and payroll system has now been completed, the University reassigned capabilities within the system, and the two employees who approve salary adjustments now have view only access to pay lines within the system.

**Information Systems Security and Control**

**Finding 4**

**Adequate password and user account controls were not established over certain critical systems.**

**RESPONSE TO THE LEGISLATIVE AUDIT REPORT  
UNIVERSITY SYSTEM OF MARYLAND  
UNIVERSITY OF MARYLAND, BALTIMORE COUNTY**

**FOR THE PERIOD OCTOBER 1, 2005 – SEPTEMBER 30, 2008**

**Recommendation 4**

**We again recommend that UMBC comply with account and password requirements and recommendations of the aforementioned USM Guidelines in Response to the State IT Security Policy and the relevant federal guidelines, as applicable.**

Response 4

The University concurs.

UMBC has modeled its password and user account controls based upon relevant federal guidelines as allowed under the *USM Guidelines in Response to the State IT Security Policy*, however we recognize that the automated password lockout element should be implemented. The University has begun development of this control and anticipate this will be completed, tested, and in place prior to the spring 2010 semester. As an interim step, alternative password lockout capabilities have been implemented until the comprehensive solution is in place.

**Finding 5**

**Security monitoring controls were inadequate since all critical activities were not recorded and independent reviews were not performed.**

**Recommendation 5**

**We recommend that UMBC**

- a. enable database auditing capabilities to record database administrator activity;**
- b. ensure that reviews of security reports for the database and related application are performed by individuals independent of the modification function; and**
- c. ensure that these reviews and any resulting investigations are documented, with the documentation retained for subsequent verification.**

**Response 5**

The University concurs.

- a. The University has enabled the database auditing capabilities to record database administrator activity.
- b. The University is developing controls to ensure that reviews of security reports for the database and related application are performed by individuals independent of the modification function; and
- c. is developing controls to ensure that these reviews and any resulting investigations are documented, with the documentation retained for subsequent verification.

The University anticipates these controls to be fully developed and implemented by December 31, 2009.

**Finding 6**

**Access to firewalls and modifications of related access rules were not adequately restricted.**

**RESPONSE TO THE LEGISLATIVE AUDIT REPORT  
UNIVERSITY SYSTEM OF MARYLAND  
UNIVERSITY OF MARYLAND, BALTIMORE COUNTY**

**FOR THE PERIOD OCTOBER 1, 2005 – SEPTEMBER 30, 2008**

**Recommendation 6**

**We recommend**

- a. that UMBC change the firewall modification application to eliminate the aforementioned vulnerability, and**
- b. that the firewall administrative user account and password be adequately secured and protected.**

**Response 6**

The University concurs.

- a. The University has changed the firewall modification application to eliminate the aforementioned vulnerability, and
- b. ensured the firewall administrative user account and password are adequately secured and protected.

**Finding 7**

**UMBC's computer network was not properly secured.**

**Recommendation 7**

**We again recommend that UMBC take the necessary actions to improve network security to protect its internal network. We made detailed recommendations to UMBC, which, if implemented, should provide for adequate security over the described network components.**

**Response 7**

The University concurs.

The University will implement the necessary actions to improve network security to protect our internal network. Using an agreed upon risk based approach, the University anticipates the implementation to be completed by January 31, 2010.

**Procurement of Goods and Services**

**Finding 8**

**UMBC made frequent purchases from two vendors without competitive bids and written contracts.**

**Recommendation 8**

**We recommend that UMBC**

- a. consolidate procurements of ongoing services to maximize their buying power when possible, and**
- b. ensure that these procurements comply with the *USM Procurement Policies and Procedures*.**

**RESPONSE TO THE LEGISLATIVE AUDIT REPORT  
UNIVERSITY SYSTEM OF MARYLAND  
UNIVERSITY OF MARYLAND, BALTIMORE COUNTY**

**FOR THE PERIOD OCTOBER 1, 2005 – SEPTEMBER 30, 2008**

**UMBC Response:**

The University concurs.

The University has established written contracts with vendors procured through the competitive bid process for the purchase of janitorial supplies and services for campus renovations. The University provided the auditors with copies of these ratified contracts prior to their departure. In the future and to the extent possible we will consolidate procurements of ongoing services to maximize our buying power and ensure that these procurements comply with the USM Procurement Policies and Procedures.

## **Equipment**

**Finding 9**

**UMBC did not comply with certain USM equipment policies regarding inventory and sensitive equipment.**

**Recommendation 9**

**We recommend that UMBC comply with the aforementioned USM *Policy for Capitalization and Inventory Control requirements.***

**Response 9**

The University concurs with one exception. While the implementation of a new fixed asset accounting system delayed our inventory efforts, our physical inventory of capital equipment is now complete and our physical inventory of non-capital equipment is 95 % complete. The University is in the process of making the necessary adjustments to the perpetual inventory records. This process should be completed by December 31, 2009. Physical inventories of capital equipment will be completed at least once every two years and of non-capital equipment at least once every three years. Documentation of these inventories will be maintained.

Due to the fact we feel it is not practical for the University to comply with the literal wording of the aforementioned policy with regards to sensitive equipment inventory requirements, we applied for an exception to the USM Policy. In response to this request, the Chancellor has informed us that the Board of Regents will be asked to revise the USM Policy in September 2009. Rather than revising UMBC policy at this time, we will await the outcome of the Regents' consideration of a policy change.

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