

Audit Report

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

January 2020

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

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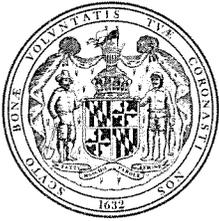
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DEPARTMENT OF LEGISLATIVE SERVICES  
OFFICE OF LEGISLATIVE AUDITS  
MARYLAND GENERAL ASSEMBLY

Victoria L. Gruber  
Executive Director

Gregory A. Hook, CPA  
Legislative Auditor

January 17, 2020

Senator Clarence K. Lam, M.D., Senate Chair, Joint Audit and Evaluation Committee  
Delegate Shelly L. Hettleman, House Chair, Joint Audit and Evaluation Committee  
Members of Joint Audit and Evaluation Committee  
Annapolis, Maryland

Ladies and Gentlemen:

We have conducted a fiscal compliance audit of the University System of Maryland (USM) – University of Maryland, Baltimore County (UMBC) for the period beginning March 19, 2015 and ending October 30, 2018. UMBC is a comprehensive public research institution of USM and provides a broad range of baccalaureate, graduate, and doctoral programs in the liberal arts and sciences and engineering disciplines.

Our audit disclosed that UMBC lacked documentation that payroll adjustments, which totaled approximately \$2.4 million in fiscal year 2018, were verified for propriety, and did not have procedures in place to independently verify adjustments to employee leave balances. Similarly, tuition remission waivers posted to student accounts receivable records were not sufficiently verified to ensure that only authorized waivers were recorded. During fiscal year 2018, tuition remission waivers totaled approximately \$7.2 million. We also noted that bookstore collections were not subject to an independent deposit verification and malware protection software was not installed on certain UMBC servers.

Our audit also included a review to determine the status of the 7 findings contained in our preceding audit report and the 3 findings contained in our November 9, 2016 special report on our review of an allegation received through our fraud, waste, and abuse hotline regarding certain questionable procurement practices at UMBC's Facilities Management Department. We determined that UMBC satisfactorily addressed all 10 prior findings.

USM's response to our findings and recommendations, on behalf of UMBC, is included as an appendix to this report. We reviewed the response and noted general agreement to our findings and related recommendations, and we will advise the Joint Audit and Evaluation Committee of any outstanding issues that we cannot resolve with USM.

We wish to acknowledge the cooperation extended to us during the audit by UMBC. We also wish to acknowledge USM's and UMBC's willingness to address the audit issues and implement appropriate corrective actions.

Respectfully submitted,

A handwritten signature in black ink that reads "Gregory A. Hook". The signature is written in a cursive style with a large, prominent initial "G".

Gregory A. Hook, CPA  
Legislative Auditor

# Table of Contents

<b>Background Information</b>	4
Agency Responsibilities	4
Status of Findings From Preceding Audit Reports	4
<b>Findings and Recommendations</b>	5
<b>Payroll</b>	
Finding 1 – The University of Maryland, Baltimore County (UMBC) lacked documentation that payroll adjustments, which totaled approximately \$2.4 million in fiscal year 2018, were verified, and did not have procedures in place to independently verify adjustments to employee leave balances.	5
<b>Tuition Remission Waivers</b>	
Finding 2 – Tuition remission waivers posted to student accounts receivable records were not sufficiently verified. These waivers totaled approximately \$7.2 million in fiscal year 2018.	6
<b>Bookstore Collections</b>	
Finding 3 – Bookstore collections were not subject to an independent deposit verification.	7
<b>Information Systems Security and Control</b>	
Finding 4 – UMBC did not have malware protection software installed on certain servers.	8
<b>Audit Scope, Objectives, and Methodology</b>	9
<b>Agency Response</b>	Appendix

## **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. According to UMBC's records, student enrollment for the Fall 2018 semester totaled 13,767, including 11,260 undergraduate students and 2,507 graduate students.

UMBC's budget is funded by unrestricted revenues, such as tuition and fees; a State general fund appropriation; and restricted revenues, such as federal grants and contracts. According to the State's accounting records, UMBC's revenues for fiscal year 2018 totaled approximately \$441.7 million, which included a State general fund appropriation of approximately \$116.8 million.

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

Our audit included a review to determine the status of the seven findings contained in our preceding audit report dated March 23, 2016. We determined that UMBC satisfactorily addressed these findings.

Our audit also included a review to determine the status of the three findings contained in our November 9, 2016 special report on our review of an allegation received through our fraud, waste, and abuse hotline regarding certain questionable procurement practices at UMBC's Facilities Management Department. We determined that UMBC satisfactorily addressed these findings.

# Findings and Recommendations

## Payroll

### **Finding 1**

**The University of Maryland, Baltimore County (UMBC) lacked documentation that payroll adjustments were verified for propriety, and did not have procedures in place to independently verify adjustments to employee leave balances.**

### **Analysis**

UMBC lacked documentation that procedures it had established to verify payroll adjustments, such as for retroactive pay and leave payouts, had been performed. Furthermore, no procedures were in place to independently verify adjustments to employee leave balances. UMBC's payroll office processed payroll and leave adjustments based on authorized adjustment request forms received from individual campus departments. According to the State's records, during fiscal year 2018, UMBC's payroll expenditures totaled approximately \$251 million, and payroll adjustments processed by UMBC totaled approximately \$2.4 million.

UMBC did not ensure that all payroll adjustments processed by the payroll office were reviewed for propriety and that only authorized payroll adjustments had been processed. Payroll reports detailing employee pay and adjustments processed each pay period were provided to each campus department for review and verification to the authorized adjustment request forms. However, our review of nine payroll adjustments processed during the period between February 2017 and December 2018, totaling \$279,000, disclosed that four of the associated payroll reports had no documentation of the required reviews. These four reports included \$137,000 of the adjustments tested. Furthermore, several departments we contacted advised us that the reviews they performed only ensured that requested adjustments were properly included on the payroll report, but did not include a verification that all recorded adjustments included in the payroll report had been authorized. We subsequently determined that the four adjustments appeared proper.

In addition, no procedures had been established to independently verify adjustments to employee leave balances. Specifically, available output reports of leave balance adjustments were not generated and provided to the campus departments for verification that all recorded adjustments were proper. According to its records, during calendar year 2018, UMBC processed 239 leave adjustments that increased employee leave by 7,717 hours and 219 adjustments that decreased employee leave by 5,499 hours.

### **Recommendation 1**

**We recommend that UMBC**

- a. ensure that all payroll adjustments are reviewed for propriety and the reviews are documented, and**
- b. generate output reports of leave balance adjustments and establish procedures to independently verify that only authorized adjustments are made.**

### **Tuition Remission Waivers**

#### **Finding 2**

**Tuition remission waivers posted to student accounts receivable records were not sufficiently verified. Tuition remission waivers totaled approximately \$7.2 million in fiscal year 2018.**

#### **Analysis**

UMBC's procedures for verifying the propriety of tuition remission waivers posted to student accounts receivable records were not sufficient to ensure that only authorized waivers were recorded. According to UMBC records, during fiscal year 2018, tuition remission waivers totaled approximately \$7.2 million.

Although supervisory employees reviewed system output reports of tuition remission waivers posted to student accounts, the two employees who performed these reviews also had access capability allowing them to record the waivers in students' records. Furthermore, the output reports of waivers granted to graduate assistants were not independently generated; rather, the employee who recorded the waivers in student accounts also generated the reports and provided them to the supervisory employee performing the review. Under these conditions, unauthorized tuition remission waivers could be recorded in student accounts without detection. During fiscal year 2018, \$4.2 million of the \$7.2 million in tuition remission waivers were granted to graduate assistants.

UMBC advised us that the two employees responsible for reviewing the output reports of waivers processed needed the capability to record tuition remission waivers since they served in a back-up capacity for this function.

#### **Recommendation 2**

**We recommend that UMBC establish procedures to independently verify the propriety of tuition remission waivers recorded in student accounts, including independent generation of all output reports used in the verification process. If the aforementioned two employees require access to**

record waivers, a procedure should be established to separately identify and verify any tuition remission waivers recorded by those employees.

## Bookstore Collections

### **Finding 3**

**Bookstore collections were not subject to an independent deposit verification.**

#### **Analysis**

UMBC lacked an independent verification that all bookstore collections were deposited. Specifically, the supervisory employee who compared recorded collections to bank deposits also helped to process the collections, including preparing the bank deposits. Under these conditions, there was a lack of assurance that all collections were deposited. According to UMBC records, during fiscal year 2018, bookstore collections totaled approximately \$486,000.

The Comptroller of Maryland's *Accounting Procedures Manual* requires independent verification of collections to deposit.

#### **Recommendation 3**

**We recommend that UMBC ensure that deposit verifications for bookstore collections are performed by an employee who does not have access to the collections. We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

## Information Systems Security and Control

### **Background**

UMBC's Division of Information Technology (DOIT) manages the development, maintenance, and support of UMBC's information technology infrastructure including support for academic teaching and research, networking, and business information systems. DOIT maintains a campus-wide network that supports both administrative and academic operations. The network includes internet connectivity, email, and various administrative systems and servers. DOIT maintains critical campus-wide applications, including financial, student administration, and human resources applications.

**Finding 4****UMBC did not have malware protection software installed on certain servers.****Analysis**

UMBC did not have malware protection software installed on servers using a certain operating system software product. Per UMBC's records as of February 8, 2019, there were 327 servers in operation which used this operating system software, some of which supported critical financial and student management applications.

Consequently, one of multiple security controls commonly used for in-depth protection against malicious software did not exist on these servers, resulting in an increased security risk. The University System of Maryland *IT Security Standards* state that various measures be employed to protect physical and virtual servers from malicious software, including use of installed malware protection software.

**Recommendation 4**

**We recommend that UMBC ensure that comprehensive security protection exists for all servers, including the installation and operation of malware protection software.**

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

We have conducted a fiscal compliance audit of the University System of Maryland (USM) – University of Maryland, Baltimore County (UMBC) for the period beginning March 19, 2015 and ending October 30, 2018. 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 the 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 control, and to evaluate its compliance with applicable State laws, rules, and regulations.

In planning and conducting our audit, we focused on the major financial-related areas of operations based on assessments of significance and risk. The areas addressed by the audit included purchases and disbursements, student accounts receivable, cash receipts, information systems security and control, payroll, student financial aid, and corporate purchasing cards. We also determined the status of the findings contained in UMBC's preceding audit report, as well as the findings contained in our November 9, 2016 special report on our review of an allegation received through our fraud, waste, and abuse hotline regarding certain questionable procurement practices at UMBC's Facilities Management Department.

Our audit did not include certain support services provided to UMBC by the USM Office and the University of Maryland, Baltimore on a centralized basis for several other units of USM, such as bond financing and processing of certain construction vendor payments, respectively. These support services are included within the scope of our audits of the USM Office and the University of Maryland, Baltimore. In addition, our audit did not include an evaluation of internal controls over compliance with federal laws and regulations for federal financial assistance programs and an assessment of UMBC's compliance with those laws and regulations because the State of Maryland engages an independent accounting firm to annually audit such programs administered by State agencies, including the components of the USM.

To accomplish our audit objectives, our audit procedures included inquiries of appropriate personnel, inspections of documents and records, observations of

UMBC's operations, and tests of transactions. Generally, transactions were selected for testing based on auditor judgment, which primarily considers risk. Unless otherwise specifically indicated, neither statistical nor non-statistical audit sampling was used to select the transactions tested. Therefore, the results of the tests cannot be used to project those results to the entire population from which the test items were selected.

We also performed various data extracts of pertinent information from the State's Financial Management Information System (such as revenue and expenditure data) and the State's Central Payroll Bureau (payroll data), as well as from the contractor administering the State's Corporate Purchasing Card Program (credit card activity). These extracts are performed as part of ongoing internal processes established by the Office of Legislative Audits and were subject to various tests to determine data reliability. We determined that the data extracted from these sources were sufficiently reliable for the purposes the data were used during this audit. We also extracted data from UMBC's financial systems for the purpose of testing certain areas, such as financial aid and student accounts receivable. We performed various tests of the relevant data and determined that the data were sufficiently reliable for the purposes the data were used during the audit. Finally, we performed other auditing procedures that we considered necessary to achieve our audit objectives. The reliability of data used in this report for background or informational purposes was not assessed.

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 a finding regarding a significant instance 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 USM Office regarding the results of our review of its response.

## APPENDIX



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OFFICE OF THE CHANCELLOR

December 20, 2019

Mr. Gregory A. Hook, CPA  
Legislative Auditor  
Office of Legislative Audits  
State Office Building, Room 1202  
301 West Preston Street  
Baltimore, MD 21201

Re: University System of Maryland – University of Maryland,  
Baltimore County  
Period of Audit: March 19, 2015 through October 30, 2018

Dear Mr. Hook:

I have enclosed the University System of Maryland's responses 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 in the report.

Sincerely yours,

A handwritten signature in black ink that reads 'Robert L. Caret'.

Robert L. Caret  
Chancellor

Enclosures

cc: Dr. Freeman Hrabowski III, President, UMBC  
Ms. Lynne Schaefer, Vice President for Administrative Affairs, UMBC  
Ms. Linda Gooden, Chair, University System of Maryland Board of Regents  
Mr. Robert L. Page, Associate Vice Chancellor for Financial Affairs, USM Office  
Mr. David Mosca, Director of Internal Audit, USM Office

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

**Agency Response Form**

**Payroll**

**Finding 1**

**The University of Maryland, Baltimore County (UMBC) lacked documentation that payroll adjustments were verified for propriety, and did not have procedures in place to independently verify adjustments to employee leave balances.**

**We recommend that UMBC**

- a. ensure that all payroll adjustments are reviewed for propriety and the reviews are documented, and**
- b. generate output reports of leave balance adjustments and establish procedures to independently verify that only authorized adjustments are made.**

<b>Agency Response</b>			
<b>Analysis</b>			
<b>Please provide additional comments as deemed necessary.</b>			
<b>Recommendation 1a</b>	Agree	<b>Estimated Completion Date:</b>	Implemented
<b>Please provide details of corrective action or explain disagreement.</b>	Manual payroll adjustment forms are now completed via DocuSign and routed back to the department for final approval. The DocuSign system provides the documentation of the review and approval of these adjustments.		
<b>Recommendation 1b</b>	Agree	<b>Estimated Completion Date:</b>	May 2020
<b>Please provide details of corrective action or explain disagreement.</b>	Human Resources will create and implement a workflow/reporting process of leave balance adjustments and establish and implement procedures to independently verify that only authorized adjustments are made.		

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

**Agency Response Form**

**Tuition Remission Waivers**

**Finding 2**

**Tuition remission waivers posted to student accounts receivable records were not sufficiently verified. Tuition remission waivers totaled approximately \$7.2 million in fiscal year 2018.**

**We recommend that UMBC establish procedures to independently verify the propriety of tuition remission waivers recorded in student accounts, including independent generation of all output reports used in the verification process. If the aforementioned two employees require access to record waivers, a procedure should be established to separately identify and verify any tuition remission waivers recorded by those employees.**

Agency Response			
<b>Analysis</b>			
<b>Please provide additional comments as deemed necessary.</b>			
<b>Recommendation 2</b>	Agree	<b>Estimated Completion Date:</b>	Completed
<b>Please provide details of corrective action or explain disagreement.</b>	UMBC has revised its procedures to independently generate reports used to verify and document tuition waivers. Additionally, the reports used to verify tuition waivers have been enhanced to identify the employee who processed the waiver. These enhanced reports allow the separate identification and verification of any tuition remission waivers recorded by the aforementioned employees and will be reviewed by a third employee.		

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

**Agency Response Form**

**Bookstore Collections**

**Finding 3**  
**Bookstore collections were not subject to an independent deposit verification.**

**We recommend that UMBC ensure that deposit verifications for bookstore collections are performed by an employee who does not have access to the collections. We advised UMBC on accomplishing the necessary separation of duties using existing personnel.**

Agency Response			
<b>Analysis</b>			
<b>Please provide additional comments as deemed necessary.</b>			
<b>Recommendation 3</b>	Agree	<b>Estimated Completion Date:</b>	Completed
<b>Please provide details of corrective action or explain disagreement.</b>	UMBC has implemented the necessary procedure to ensure that deposit verifications for bookstore collections are independently verified and documented.		

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

**Agency Response Form**

**Information Systems Security and Control**

**Finding 4**

**UMBC did not have malware protection software installed on certain servers.**

**We recommend that UMBC ensure that comprehensive security protection exists for all servers, including the installation and operation of malware protection software.**

<b>Agency Response</b>			
<b>Analysis</b>			
<b>Please provide additional comments as deemed necessary.</b>	NA		
<b>Recommendation 4</b>	Agree	<b>Estimated Completion Date:</b>	NA
<b>Please provide details of corrective action or explain disagreement.</b>	As discussed in the OLA exit interview, UMBC agrees that systems that handle sensitive data need to have additional layers of protection, and these layers should be a combination of network based segmentations and restrictions and/or host-based protections. Though we have network based segmentation in place for systems handling sensitive data, after discussions with the auditors, we attempted to also add host-based protections to servers running one of multiple operating system software products to evaluate the risk/benefits. In early fall, we experienced a number of performance issues and service disruptions due to the software. In working with the vendor, they were unable to address the performance impact and we removed this software. As part of our annual risk assessment for these servers, we will continue to assess on-going risks and evaluate what the most effective combination of network and host-based protections for these servers should be.		

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