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Appendix 1 - System wide Enterprise Risk Management Report (May 2018)
Introduction

Massachusetts General Laws Chapter 647 of the Acts of 1989, *An Act Relative to Improving the Internal Controls within State Agencies*, establishes internal control standards that define the minimum level of quality acceptable for internal control systems in operation throughout the various state agencies and departments. Those standards are outlined below.

- **Documentation** - Internal control systems of the agency are to be clearly documented and readily available for examination.

- **Transactions** - All transactions and other significant events are to be promptly recorded, clearly documented and properly classified.

- **Authority** - Transactions and other significant events are to be authorized and executed only by persons acting within the scope of their authority.

- **Segregate Duties** – Essential duties and responsibilities should be assigned systematically to ensure that effective checks and balances exist. They include:
  1. Authorizing, approving, and recording transactions,
  2. Issuing and receiving assets,
  3. Making payments, and
  4. Reviewing or auditing transactions

- **Supervision** - Qualified and continuous supervision is to be provided to ensure that internal control objectives are achieved.

- **Access** - Access to resources and records is to be limited to authorized individuals as determined by the department head. The department head is responsible for maintaining accountability for the custody and use of resources and shall assign qualified individuals for that purpose. Periodic comparison shall be made between the resources and the accounting records to reduce the risk of unauthorized use or loss and protect against waste and wrongful acts.
Introduction

Chapter 647 requires that a senior official, equivalent in title to an assistant or deputy to the department head, in addition to his or her regular duties, be assigned the responsibility for the department's internal control. This individual is the department’s Internal Control Officer. The Internal Control Officer’s organizational responsibilities include the following:

- Have available on file written documentation of the department’s internal accounting and administrative control system for review by the Comptroller's Office, the Office of the Secretary of Administration and Finance, and the Office of the State Auditor,
- Evaluate the effectiveness of the agency’s internal control system at least annually, more often if conditions warrant. At that time, establish and implement any changes necessary to ensure the continued integrity of the system,
- Evaluate the results of audits and recommendations to improve departmental internal controls promptly,
- Implement timely and appropriate corrective actions in response to an audit, and
- Address all actions determined as necessary to correct or otherwise resolve internal control matters in the department's budgetary request to the Governor and Legislature.

- Immediately report all variances, losses, shortages, or thefts of funds or property to the Office of the State Auditor.

The Internal Control Officer for University of Massachusetts is the University Controller.
Internal Control: An Overview

The Committee of Sponsoring Organizations for the Treadway Commission (COSO) developed a model for evaluating internal controls. This model has been adopted as the generally accepted framework for internal control and is widely recognized as the definitive standard against which organizations measure the effectiveness of their systems of internal control. The COSO model defines internal control as “a process, effected by an entity’s board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

(a) effectiveness and efficiency of operations,

(b) reliability of financial reporting, and

(c) compliance with applicable laws and regulations.”

A comprehensive framework of internal controls consists of the following five interrelated components. In an effective internal control system these components work to support the achievement of an entity’s mission, strategies and related business objectives.

(a) Control Environment. This is the foundation for all other components of internal control encompassing such factors as integrity and ethical values, commitment to competence, board of trustees and audit committee participation, management’s philosophy and operating style, organizational structure, assignment of authority and responsibility, and human resource policies and practices.

(b) Risk Assessment. This component identifies, analyzes, and manages the potential risks that could prevent management from achieving its objectives. Change is one factor that can be used to identify risks. Another is inherent risk usually associated with assets that can be readily converted to personal use.

(c) Control Activities. These are the policies and procedures needed to address the risks identified that could prevent management from achieving its objectives. Control activities generally relate to proper authorization of transactions, security of assets and records, and segregation of incompatible duties.

(d) Information and Communication. Information provided to staff should be appropriate in content, timely, current, accurate, and accessible. Communication takes such forms as policy manuals, accounting and financial reporting manuals, policy memoranda, and regularly scheduled staff meetings.
Internal Control: An Overview, cont’d

(e) Monitoring. It is the responsibility of management to continually monitor control activities to ensure that they function properly and take the necessary corrective action to resolve potential problems or weaknesses in a timely manner. This component also involves evaluating the effectiveness of controls, i.e., (1) controls are properly designed so they will accomplish their intended purpose and (2) controls actually function as designed.

Mission Statement
The University’s mission is to provide an affordable and accessible education of high quality and to conduct programs of research and public service that advance knowledge and improve the lives of the people of the Commonwealth, the nation and the world.

The University of Massachusetts is a five-campus public research university system renowned for the quality of its academic programs, the scope and excellence of its research, and its enduring adherence to its public service mission. UMass provides access to high-quality, affordable education that advances knowledge and improves the lives of the people of the Commonwealth, the nation and the world.

The University of Massachusetts has been providing high-quality educational opportunities for more than 150 years. It was established in 1863 under the Morrill Land-Grant Colleges Act as the Massachusetts Agricultural College, located in Amherst. It later became known as the Massachusetts State College in 1932 and in 1947 became the University of Massachusetts. The Medical School and Boston campuses were established in 1962 and 1964, respectively. The Lowell campus, previously the University of Lowell, and the Dartmouth campus, formerly Southeastern Massachusetts University, were consolidated into the University under Chapter 142 of the Acts of 1991.

Administrative and Fiscal Controls

The design and evaluation of controls over accounting and financial reporting is made more manageable by grouping similar or related activities into what are commonly referred to as “control cycles.” This approach also provides a logical framework and underscores the relationships that exist among the many control-related policies and procedures.

Control cycles are generally defined by business processes within the organization having to do with sources and uses of funds. Each control cycle has specific objectives and potential risks that can prevent management from meeting its objectives. A practical means of identifying potential risks or weaknesses is by using management’s implicit assertions of (1) existence or occurrence, (2) completeness, (3) rights and obligations, (4) allocation, (5) presentation and disclosure.

Control-related policies and procedures designed to compensate for such risks are categorized as follows: (1) authorization, (2) properly designed records, (3) security of assets and records, (4) segregation of duties, (5) periodic reconciliations, (6) periodic verifications, (7) analytical review, (8) and timely preparation of financial reports in conformity with generally accepted accounting principles.
Control Environment

Overall Objective
The University shall provide for discipline and structure and promote integrity and ethical values to staff at all levels for the purpose of attaining its objectives and meeting its responsibilities.

Specific Objectives
1. The University has a statement of mission and objectives.
2. There is a current organizational chart in use which fixes authority and responsibility and appropriate lines of reporting.
3. The University has established an official code of conduct or an official set of policies governing employee conduct.
4. The University has established and maintains up-to-date job descriptions for all employees.
5. The University follows appropriate hiring policies.
6. Authority and responsibility are assigned in an appropriate manner.
7. Employees are properly trained.
8. Employees are periodically reviewed and performance is documented.
9. The University has established performance goals and criteria for promotion.
10. The University has developed and maintains formalized policies and procedures as approved by the Board of Trustees.
11. The University has established a budgetary control system.
12. The governing board has established an audit committee.
13. The University has established an internal audit function.
Risk Assessment

The definition of internal control includes all aspects of an organization’s activities. In preparing a system-wide internal control plan, the starting point is the identification and analysis of risks that could prevent the organization from reaching its goals and objectives as defined by its mission statement.

The University of Massachusetts (UMass) performed a system-wide analysis on the potential risks that could hinder our defined mission and prevent us from reaching our goals. This analysis and identification of the most serious risks was discussed in November 2017, when the University held its first annual Enterprise Risk Management Summit, bringing together risk owners from across the campuses to identify and formalize risk identification and mitigation strategies. This was followed by the first annual system-wide enterprise risk management report, published in May 2018. This report identified 60 risks agreed upon by all constituents, and work is being done to identify and implement risk mitigation strategies. The next Enterprise Risk Management Summit will be held in late January 2019, to build upon the work that has been done by this group. Our next system-wide enterprise risk management report will be presented to the Board of Trustees in June 2019. The executive summary of the System-wide Enterprise Risk Management Report is below. The full report is attached in Appendix 1.

System Wide Enterprise Risk Management Report Executive Summary

Enterprise Risk Management (ERM) is a process-driven framework that enables senior management to visualize, assess, and manage significant risks that may adversely impact the attainment of key organizational objectives. Similar to both public and private sector organizations, the University of Massachusetts system operates in an inherently risky environment. Risks include financial, safety, security, information technology, regulatory, and reputational, among many others. It is especially important to manage this portfolio of risks to ensure that the University System can continue to serve the University's faculty, staff, students, and visitors, while furthering its mission. The UMass President’s Office (UMPO) has been working with the campuses to create a sustainable process to identify, assess, and manage risks across the University System to assist in strategically managing risk and in minimizing uncertainty. It has been a year of evolution for the System-wide ERM program, and the University is pleased to have developed the first edition of the University of Massachusetts System-Wide Enterprise Risk Management Report. UMPO, along with the UMass campuses, has helped University leadership identify, access, and mitigate enterprise risks through the following process:

Establish ERM Framework / Establish Content: During this phase, UMPO developed a central risk register and ERM framework, before expanding it to include all of the campuses.

Risk Identification: During this phase, each campus worked with their respective stakeholders to identify and prioritize risks by facilitating group sessions on their campus. Across the system, more than 150 academic and administrative leaders participated in the process. Then, all of the campuses submitted their risk registers to UMPO, who analyzed them for consistency, as well as common and unique risks. A system-wide ERM workshop was conducted, the top risks were discussed, and 10 risk group categories were created.


Risk Assessment, cont’d

Risk Analysis: Based on the analysis of risks identified by all the campuses, a common set of risks was developed, which then served as the basis of the inaugural system-wide ERM summit. The summit, held in November 2017, included more than 90 senior-level staff members from across the system. The participants worked with their colleagues to confirm and update the list of risks and to discuss the mitigation and controls for these risks.

Risk Mitigation: Based on the results of the risk analysis phase, primary risk group owners and teams were established for 60 risks and mitigating activities were documented from a system-wide perspective.

Conclusion and Outlook: This has been a year of great progress for the system-wide ERM process, with all institutional risks and mitigation measures being documented in a centralized report.

Based on the system-wide Enterprise Risk Assessment, ERM summit, and risk group meetings, the University of Massachusetts identified 60 system-wide institutional risks within the ten risk groups. Each risk is ranked within its risk group and has a risk group owner who is responsible for addressing the risk. Following is the list of the ten risk groups.
## Risk Assessment, cont’d

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academics</td>
<td>Failure to attract, recruit, and retain students, staff, and faculty</td>
</tr>
<tr>
<td></td>
<td>Inadequate/out-of-date data management &amp; enterprise application systems</td>
</tr>
<tr>
<td>Athletics</td>
<td>Inability to adequately support student-athlete health and safety</td>
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<tr>
<td></td>
<td>Failure to comply with NCAA regulations, including athletic recruiting guidelines</td>
</tr>
<tr>
<td>Communications</td>
<td>Compromise of University’s reputation due to real or perceived scandal, poor response to a crisis or other institutional failure</td>
</tr>
<tr>
<td></td>
<td>Failure to effectively communicate major milestones to key stakeholders and target audiences</td>
</tr>
<tr>
<td>Facilities</td>
<td>Inadequate campus security and access systems</td>
</tr>
<tr>
<td></td>
<td>Loss of building function, revenue, or reputation resulting from a failure of equipment, system, or building envelope, due to the inability to perform critical deferred maintenance projects and/or fund operational maintenance accounts</td>
</tr>
<tr>
<td>Financial</td>
<td>Failure to maintain short- and long-term fiscal health of the university</td>
</tr>
<tr>
<td></td>
<td>Significant loss of funds from a major revenue source</td>
</tr>
<tr>
<td>Human Resources</td>
<td>Failure to comply with federal and state employment laws and regulations</td>
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<tr>
<td></td>
<td>Failure to protect the privacy, confidentiality, and security of employee data</td>
</tr>
<tr>
<td>Information Technology</td>
<td>An event (moderate, substantial, or catastrophic) occurs that impacts technology services and disrupts campus operations</td>
</tr>
<tr>
<td></td>
<td>An event (moderate, substantial, or catastrophic) occurs that compromises the security of information assets</td>
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<tr>
<td>Research</td>
<td>Reduction in grants and contracts</td>
</tr>
<tr>
<td></td>
<td>Inability to meet recruitment and retention objectives/goals for research faculty, staff, and students related to research enterprise</td>
</tr>
<tr>
<td>Safety and Security</td>
<td>Lack of coordinated exchange of information (interoperability) with internal and external partners during an incident</td>
</tr>
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<td></td>
<td>Failure to implement and execute continuity plans, in order to test and improve resiliency</td>
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<tr>
<td>Student Affairs</td>
<td>Increased drug usage: marijuana, vaporizer, edible drugs and painkillers</td>
</tr>
<tr>
<td></td>
<td>Involved with a population prone to risk taking, due to mental development and being away from home</td>
</tr>
</tbody>
</table>
Mission and Purposes
The University has a mission and a set of purposes appropriate to higher education, consistent with its charter or other operating authority, and implemented in a manner that complies with the Standards of the Commission on Institutions of Higher Education.

Planning and Evaluation
The University undertakes planning and evaluation appropriate to its needs to accomplish and improve the achievement of its mission and purposes.

Organization and Governance
The University has a system of governance that facilitates the successful accomplishment of its mission and purposes. Through its organizational design and governance structure, the institution creates and sustains an environment that encourages teaching, learning, scholarship, research, and it assures provision of support adequate for the appropriate functioning of each organizational component.

Programs and Instruction
The University’s programs are consistent with and serve to fulfill its mission and purposes. Each educational program demonstrates consistency through its goals, structure, and content; policies and procedures for admission and retention; instructional methods and procedures; and the nature, quality, and extent of student learning and achievement. The University provides sufficient resources to sustain and improve programs and instruction.

Faculty
Faculty qualifications, numbers, and performance are sufficient to accomplish the University’s mission and purposes. Faculty competently offer the University’s academic programs and fulfill those tasks appropriately assigned them.

Student Services
The University provides an environment which fosters the intellectual and personal development of its students consistent with its mission and purposes and mode of educational delivery. It is sensitive to the non-academic needs of its students and recognizes that their educational experience consists of an academic component and interrelated developmental opportunities provided through a co-curricular program of student services. These services are guided by a philosophy, disseminated and reviewed on a regular basis, which is conducive to the development of a shared learning community and which prepares students to become responsible members of society.
Library and Information Resources

The University makes available the library and information resources necessary for the fulfillment of its mission and purposes. These resources support the academic and research program and the intellectual and cultural development of students, faculty, and staff. Library and information resources may include the holdings and necessary services and equipment of libraries, media centers, computer centers, language laboratories, museums, and any other repositories of information or technological systems required for the support of institutional offerings. Clear and disseminated policies govern access, usage, and maintenance of the library, information resources, and services. The University ensures that students use these resources as an integral part of their education.

Physical Resources

The University has sufficient and appropriate physical resources, including laboratories, network infrastructure, materials, equipment, and buildings and grounds, whether owned or rented; these are designed, maintained, and managed at both on- and off-campus sites to serve institutional needs as defined by its mission and purposes. Classrooms and laboratories, real or virtual, and other facilities are appropriately equipped and adequate in capacity. Proper management, maintenance, and operation of all physical facilities and virtual environments, are accomplished by adequate and competent staffing.

Financial Resources

The University is financially stable. This financial stability is not achieved at the expense of educational quality. The University’s financial resources are sufficient to sustain the achievement of its educational objectives and to further institutional improvement now and in the foreseeable future. The University reallocates resources as necessary to achieve its purposes and objectives. All or substantially all of the University’s revenue is devoted to the support of its educational purposes and programs. The University has the ability to respond to financial emergencies and unforeseen circumstances.

In Fiscal 2019, the University is embarking on an effort to explore the financial and operational savings and increased quality to be achieved by providing administrative services through a shared services model. Our initial plan is to be presented to the President by the end of January 2019.

Public Disclosure

In presenting itself to students and other members of the interested public, the University provides information that is complete, accurate, and clear.

Integrity

The University subscribes to, exemplifies, and advocates high ethical standards in the management of its affairs and in all of its dealings with students, faculty, staff, external agencies and organizations, and the general public.
Control Activities: Administrative and Fiscal Controls

The following control cycles have been identified as significant to the University in achieving its goals and objectives: (1) budgetary process, (2) revenue cycle - revenue, accounts receivable, and cash receipts, (3) purchasing cycle - expenditures, payables, and cash disbursements, (4) payroll cycle, and (5) resource management – cash, investments, and fixed assets.

Budgetary Process

The authorized budget reflects anticipated revenues and appropriations, as well as anticipated expenses for the fiscal year. In fiscal 2019, the University is implementing a new integrated budget and planning tool, which we will begin to use for the fiscal 2020 budget cycle.

Specific Objectives

(a) Budget Preparation

1. Responsibilities for budget preparation, adoption, execution, and reporting are segregated.
2. Budgets are prepared for all significant activities.
3. The budgeting system is integrated with the planning process.
4. The budget is prepared in sufficient detail to provide a meaningful tool with which to monitor subsequent performance.
5. The type of budgeting performed is compatible with the accounting system.
6. For sponsored programs requiring prior approval, procedures have been adopted and communicated to establish authority and responsibility for transfers between budget categories.

(b) Budget Approval

1. Original budget is submitted to the Board of Trustees for approval; following this, the University reports quarterly to the Board on budget to actuals with a year-end projection report any changes to that original budget.
2. A budget calendar is used for the orderly submission and approval of the budget.

(c) Budget Accounting and Reporting

1. Estimated revenues and appropriations are recorded in the accounting records for later comparison to actual amounts realized or incurred.
2. Actual expenditures are compared to the budget on a timely basis with reasonable frequency (monthly on sponsored programs, quarterly on non-sponsored activity).
3. Reports are discussed with departmental personnel and significant variations from budget are documented.
4. Quarterly reporting of actual revenues and expenses, and revised projections for the fiscal year are presented to the Board of Trustees.
Control Activities: Administrative and Fiscal Controls, cont’d

(c) Budget Accounting and Reporting, cont’d

5. Management and the Board of Trustees are notified of expenditures in excess of budget, along with plans to cover such over-expenditures within the approved annual budget through the quarterly reporting process.
Revenue Cycle
Revenue controls should be designed to ensure that University funds are collected, deposited, and accurately reported.

Specific Objectives
(a) Revenue and Accounts Receivable
   1. Tuition and fees are authorized and periodically reviewed by the Board of Trustees.
   2. An accounts receivable event is established whenever goods or services have been provided and corresponding earnings are measurable.
   3. The responsibility of billing revenues is segregated from collections and general ledger posting.
   4. Procedures exist for the timely billing of amounts due.
   5. Balances of individual receivable accounts are periodically reconciled with general ledger control accounts.
   6. Delinquent accounts are reviewed and considered for charge-off on a timely basis.
   7. Write-offs and other reductions of receivables and refunds of amounts previously collected follow prescribed policies and procedures.
   8. Tuition and fee waivers, bad debt write-offs, credit memos and allowances are approved independently of processing, recording, and collecting the charge.
   9. Accounts receivable for grants and contracts are established when expenditure reimbursement claims are submitted to Federal and State granting agencies and private contracts.

(b) Cash Receipts
   1. Receipts are accounted for and balanced to reported collections on a daily basis.
   2. Receipts are deposited intact on a daily basis.
   3. Facilities exist for protecting undeposited cash receipts.
   4. The responsibility for collecting, controlling, and depositing funds is segregated from maintaining accounting records.
   5. Responsibilities for cash receipts are segregated from those for cash disbursements.
   6. Timely bank reconciliations are prepared and reviewed by someone independent of the cash receipts function.
Control Activities: Administrative and Fiscal Controls, cont’d

Purchasing Cycle
Acquisition of goods and services is properly controlled, accounted for, and in compliance with the University’s purchasing policies and procedures.

Specific Objectives
(a) Purchases and Accounts Payable

1. Purchases of goods and services are initiated by properly authorized requisitions bearing the approval of officials designated to authorize requisitions.

2. Unobligated funds are verified by the accounting or budget department as sufficient to meet the proposed expenditure.

3. Encumbrance entries are recorded only on the basis of approved purchase orders.

4. Competitive bidding procedures are used.

5. Purchase orders and contracts are issued under numerical or other suitable control.

6. Changes to purchase orders and contracts are subjected to the same controls and approvals as the original agreement.

7. An adequate record of open purchase orders and purchase agreements is maintained to ensure knowledge of outstanding commitments.

8. Procedures exist to verify that goods and services have been received, prices are as ordered, and the goods and services meet quality standards.

9. Procedures exist to record and follow up on partial deliveries.

10. The accounting and purchasing departments are promptly notified of returned purchases, and such purchases are correlated with vendor credit advices.

11. Controls exist for submission and approval of reimbursements to employees for travel and other expenses.

12. Controls exist for processing invoices not involving materials or supplies, e.g., lease or rental payments and utility bills.
Control Activities: Administrative and Fiscal Controls, cont’d

(a) Purchases and Accounts Payable, cont’d

13. Balances of individual payable accounts are periodically reconciled with general ledger control accounts.

14. Access to the master vendor file is limited to employees authorized to make changes.

15. Responsibilities for the requisitioning and receiving functions are segregated from the purchasing, invoice processing, accounts payable, and general ledger functions.

(b) Cash Disbursements

1. Procedures exist for disbursement approval, wire transfer and check signing.

2. Responsibilities for the disbursement approval function are segregated from those for the disbursement, voucher preparation, and purchasing functions.

3. Controls are maintained over the supply of unused and voided checks.

4. The drawing of checks to cash or bearer is prohibited.

5. Controls exist over check signing machines as to signature plates and usage.

(c) Grants and Contracts

1. Grant disbursements are processed under the same degree of controls applicable to the University’s other transactions, i.e., budget, procurement, etc.

2. Procedures are modified when funds are disbursed under grant or loan agreements and related regulations impose requirements that differ from the University’s normal policies.

3. Procedures and controls exist to provide reasonable assurance that only eligible individuals receive assistance under Federal award programs and that amounts provided to or on behalf of eligible individuals were calculated in accordance with program requirements.

4. Procedures and controls exist to provide reasonable assurance that the draw-down of Federal cash is only for immediate needs.

5. Controls exist to provide reasonable assurance that Federal funds are used only during the authorized period of availability.

6. Controls exist to ensure that costs charged to grants are in compliance with grant agreements.
(c) Grants and Contracts, cont’d

7. Procedures exist for obtaining grantor approval where required, before incurring expenditures in excess of budgeted amounts or for unbudgeted expenditures.

8. Procedures exist to identify, before order entry, costs and expenditures that are not allowable under grant programs.

9. Grant activity is accounted for so that it can be separated from the accounting for locally funded activities.

10. Procedures exist to monitor compliance with grant requirements.

11. The level of authority for approving grants and contracts is appropriate.
Payroll Cycle
All payrolls are supported by appropriate evidence for authorized work actually performed and properly reflected in the accounting records.

Specific Objectives
(a) Initiating Payroll Transactions
1. Wages and salaries are approved by the Board of Trustees as part of the budget process.
2. Bonuses for certain executives and employee benefits are authorized by the Board of Trustees.
3. All changes in employment (additions and terminations), salary and wage rates, and payroll deductions are properly authorized, approved, and documented.
4. Notices of additions, separations, and changes in salaries, wages, and deductions are promptly reported to the payroll-processing function.
5. Changes to the master payroll file are approved and documented.
6. Access to the master payroll file is limited to employees who are authorized to make changes.
7. Responsibilities for supervision and timekeeping functions are segregated from personnel, payroll processing, disbursement, and general ledger functions.
8. Records and controls exist for timekeeping and attendance.
9. Hours worked, overtime hours, and other special benefits are reviewed and approved by the employee’s supervisor.
10. Appropriate payroll records are maintained for accumulated employee benefits, i.e., sick leave, vacation and pension.
11. Procedures exist for authorizing, approving, and recording vacations, holidays, sick leave and compensatory time.

(b) Processing Payroll
1. Payroll is calculated using authorized pay rates, payroll deductions, and time records.
2. Account coding procedures exist to ensure proper classification of employee compensation and benefit costs in general ledger accounts.
3. Responsibilities for the payroll processing function are segregated from personnel and general ledger functions.
(b) Processing Payroll, cont’d

4. Controls exist to ensure that employee benefit and compensation costs do not exceed appropriated or budgeted amounts.

5. Accrued liabilities for unpaid employee compensation and benefit costs are properly recorded and disclosed.

6. Signature plates and the use of the payroll check-signing machine are kept under control of the official whose name appears on the signature plate (or his/her designee).

7. The supply of unused payroll checks is controlled.

8. A separate, imprest-basis, payroll account is maintained.

9. The payroll bank account is reconciled regularly by employees independent of all other payroll transaction processing activities.

10. Responsibilities for payroll distribution are segregated from personnel, timekeeping, and payroll processing functions.
Control Activities: Administrative and Fiscal Controls, cont’d

Resource Management – Cash, Investments, and Fixed Assets
Cash, investments, and fixed assets are supported by appropriate evidence for authorization, physically safeguarded, and properly reflected in the accounting records.

Specific Objectives
(a) Cash

1. Bank accounts are properly authorized.
2. Procedures exist to review bank balances for appropriate insurance and collateral on a periodic basis.
3. Procedures exist for steps essential to an effective bank statement reconciliation.
4. Responsibilities for preparing and approving bank account reconciliations are segregated from those for other cash receipt or disbursement functions.
5. Cancelled checks are subject to appropriate escheat procedures.
6. Controls and physical safeguards exist for petty cash funds.

(b) Investments

1. Investment policies are formally established and periodically reviewed.
2. Authority and responsibility has been established for investment opportunity evaluation and purchase.
3. Procedures have been established governing the level and nature of approvals required to purchase or sell investments.
4. Responsibilities for initiating, evaluating, and approving investment transactions are segregated from those for detail accounting, general ledger, and other related functions.
5. Adequate physical safeguards and custodial procedures exist over (a) negotiable and nonnegotiable securities owned and (b) legal documents or agreements evidencing ownership or other rights.
6. All securities are registered or held in the name of the University.
7. Securities are periodically inspected or confirmed with safekeeping agents.
8. Detailed accounting records are maintained for investments.
University of Massachusetts  
Internal Control Plan  
Fiscal 2019

Control Activities: Administrative and Fiscal Controls, cont’d

(b) Investments, cont’d

9. Procedures exist to ensure that transactions arising from investments are properly processed, including income and amortization entries.

10. Detailed accounting records for investments are periodically agreed to the general ledger.

11. Appropriate procedures exist to determine the fair value of investments.

12. The University has an established policy for separating the reporting of investments and the reporting of cash and cash equivalents.

(c) Fixed Assets

1. Board of Trustee approval is required for all significant fixed asset projects or acquisitions, in accordance with the Capital and Land Use Policy.

2. Responsibilities for initiating, evaluating, and approving capital expenditures, leases, and maintenance or repair projects are segregated from those for project accounting, property records, and general ledger functions.

3. Those individuals authorized to initiate fixed asset transactions are identified and there is clear definition of the limits of their authority.

4. Controls exist to (a) distinguish between capital and operating budget expenditures, (b) identify operating budget expenditures to be capitalized as fixed assets, and (c) distinguish between capital and operating leases.

5. Controls exist to ensure purchased materials and services for capital expenditure and repair projects are subject to the same levels of controls as exist for all other procurements.

6. Controls exist to provide for obtaining grantor approval, if required, for the use of grant funds for fixed asset acquisitions.

7. Grant-funded authorizations are subject to the same controls as internally funded acquisitions.

8. The general ledger and detailed fixed asset records are updated for fixed asset transactions on a timely basis.

9. Physical safeguards over assets exist.

10. Periodic inventories of fixed assets are taken and inventory results are compared to detailed property records and general ledger control accounts.

11. Controls exist to govern depreciation methods and practices.
12. Controls exist for authorizing, approving, and documenting sales or other dispositions of fixed assets.
Overall Objective

Information is current, accurate, appropriate and made available on a timely basis at all staff levels to permit management to achieve its objectives.

Specific Objectives

1. Accounts are maintained to ensure observance and limitations placed on the use of available resources.
2. Adequate source documentation exists to support amounts and items reported.
3. Assigned authorization levels and approvals exist for posting transactions to the general ledger.
4. A recordkeeping system is established to ensure that accounting records and documentation are retained for the time period required in accordance with the provisions of laws, regulations, contracts and grant agreements.
5. Procedures exist to ensure that reports are provided timely to managers for review and appropriate action to be taken.
6. Procedures exist for review and reconciliation of control accounts in the general ledger to subsidiary ledgers.
7. Computer and program controls exist and include:
   a. Data entry controls, i.e., edit checks
   b. Exception reporting
   c. Access controls
   d. Reviews of input and output data
   e. Computer general controls and security controls
8. Operating policies and procedures are clearly written and communicated.
9. Staff meetings are regularly scheduled.
10. The Board of Trustees conducts regular meetings where financial information is reviewed and the results of program activities and accomplishments are discussed. Written documentation is maintained of the matters addressed at such meetings.
11. The Board of Trustees has established an Audit Committee that is responsible for engaging the independent external auditor, approving the University’s audited financial statements and ensuring audit findings and recommendations are adequately addressed by University management.
Monitoring

Overall Objective
Ongoing monitoring occurs in the ordinary course of operations, and includes regular management and supervisory activities, and other actions personnel take in performing their duties that assess the quality of internal control system performance.

Specific Objectives
1. Management obtains evidence that the system of internal control continues to function through independent reconciliations and management review of reports.
2. Communications from external parties corroborate internally generated information or indicate problems.
3. Appropriate organizational structure and supervisory activities provide oversight of control functions and identification of deficiencies.
4. Physical assets are examined periodically and compared to data recorded by information systems.
5. Irregularities and deficiencies, once identified, are promptly and effectively corrected.
6. The Audit Committee of the Board of Trustees reviews and monitors audit findings and assesses the adequacy of corrective action plans.
System-Wide Enterprise Risk Management Report

May 2018

First Edition
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Executive Summary

Enterprise Risk Management (ERM) is a process-driven framework that enables senior management to visualize, assess, and manage significant risks that may adversely impact the attainment of key organizational objectives. Similar to both public and private sector organizations, the University of Massachusetts system operates in an inherently risky environment. Risks include financial, safety, security, information technology, regulatory, and reputational, among many others. It is especially important to manage this portfolio of risks to ensure that the university system can continue to serve the university's faculty, staff, students, and visitors, while furthering its mission. The UMass President’s Office (UMPO) has been working with the campuses to create a sustainable process to identify, assess, and manage risks across the university system to assist in strategically managing risk and in minimizing uncertainty. It has been a year of evolution for the system-wide ERM program, and the university is pleased to have developed the first edition of the University of Massachusetts System-Wide Enterprise Risk Management Report. UMPO, along with the UMass campuses, has helped university leadership identify, access, and mitigate enterprise risks through the following process:

Establish ERM Framework / Establish Content: During this phase, UMPO developed a central risk register and ERM framework, before expanding it to include all of the campuses.

Risk Identification: During this phase, each campus worked with their respective stakeholders to identify and prioritize risks by facilitating group sessions on their campus. Across the system, more than 150 academic and administrative leaders participated in the process. Then, all of the campuses submitted their risk registers to UMPO, who analyzed them for consistency, as well as common and unique risks. A system-wide ERM workshop was conducted, the top risks were discussed, and 10 risk group categories were created.

Risk Analysis: Based on the analysis of risks identified by all the campuses, a common set of risks was developed, which then served as the basis of the inaugural system-wide ERM summit. The summit, held in November 2017, included more than 90 senior-level staff members from across the system. The participants worked with their colleagues to confirm and update the list of risks and to discuss the mitigation and controls for these risks.

Risk Mitigation: Based on the results of the risk analysis phase, primary risk group owners and teams were established for 60 risks and mitigating activities were documented from a system-wide perspective. The results are included in the report.

Conclusion and Outlook: This has been a year of great progress for the system-wide ERM process, with all institutional risks and mitigation measures being documented in a centralized report. There was tremendous collaboration and cooperation from all the campuses. Moving forward, UMass will build on this work and identify additional key risks to further analyze and mitigate.
Based on the system-wide Enterprise Risk Assessment, ERM summit, and risk group meetings, the University of Massachusetts identified 60 system-wide institutional risks within the ten risk groups. Each risk is ranked within its risk group and has a risk group owner who is responsible for addressing the risk. Below are the top two institutional risks for each of the 10 risk groups, as identified by the risk group committees.

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic</strong></td>
<td>Failure to attract, recruit, and retain students, staff, and faculty</td>
</tr>
<tr>
<td></td>
<td>Inadequate/out-of-date data management &amp; enterprise application systems</td>
</tr>
<tr>
<td><strong>Athletics</strong></td>
<td>Inability to adequately support student-athlete health and safety</td>
</tr>
<tr>
<td></td>
<td>Failure to comply with NCAA regulations, including athletic recruiting guidelines</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td>Compromise of university’s reputation due to real or perceived scandal, poor response to a crisis or other institutional failure</td>
</tr>
<tr>
<td></td>
<td>Failure to effectively communicate major milestones to key stakeholders and target audiences</td>
</tr>
<tr>
<td><strong>Facilities</strong></td>
<td>Inadequate campus security and access systems</td>
</tr>
<tr>
<td></td>
<td>Loss of building function, revenue, or reputation resulting from a failure of equipment, system, or building envelope due to the inability to perform critical deferred maintenance projects and/or fund operational maintenance accounts</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td>Failure to maintain short- and long-term fiscal health of the university</td>
</tr>
<tr>
<td></td>
<td>Significant loss of funds from a major revenue source</td>
</tr>
<tr>
<td><strong>Human Resources</strong></td>
<td>Failure to comply with federal and state employment laws and regulations</td>
</tr>
<tr>
<td></td>
<td>Failure to protect the privacy, confidentiality, and security of data of employees</td>
</tr>
<tr>
<td><strong>Information Technology</strong></td>
<td>An event (moderate, substantial, or catastrophic) occurs that impacts technology services, disrupting campus operations</td>
</tr>
<tr>
<td></td>
<td>An event (moderate, substantial, or catastrophic) occurs that compromises the security of information assets.</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>Reduction in grants and contracts</td>
</tr>
<tr>
<td></td>
<td>Inability to meet objectives/goals of recruitment and retention of research faculty, staff, and students related to research enterprise</td>
</tr>
<tr>
<td><strong>Safety and Security</strong></td>
<td>Lack of coordinated exchange of information (interoperability) with internal and external partners during an incident</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Failure to implement continuity planning and exercising continuity plans to test and improve resiliency</td>
</tr>
<tr>
<td><strong>Student Affairs</strong></td>
<td>Increased drug usage: marijuana, vaporizer and eatable drugs, painkillers</td>
</tr>
<tr>
<td></td>
<td>Risk associated with a population prone to risk taking, combined with mental development, plus being away from home</td>
</tr>
</tbody>
</table>
1. Introduction

Like organizations within the public and private sectors, the University of Massachusetts system operates in an inherently risky environment. Risks include financial, health and safety, information technology, regulatory, reputational, and a whole host of other types of risk. Managing this portfolio of risks is especially important to help ensure the university system can continue to serve the university's faculty, staff, students and visitors and deliver on its mission. By strategically managing risk, we can reduce the chance of loss, create greater financial stability, and protect our resources so we can continue our mission of supporting teaching, research and public service.

Enterprise Risk Management (ERM) is a process-driven framework that enables senior management to visualize, assess, and manage significant risks that may adversely impact the attainment of key University objectives. The UMass President’s Office (UMPO) has been working with the UMass campuses to create a sustainable process to identify, assess, and manage risks across the enterprise to ensure attainment of key organizational objectives and minimize uncertainty. ERM is a priority of the UMass Board of Trustees, President Meehan, the Chancellors and Senior Staff who are all fully committed to establishing an institution that ensures ERM as a core capability and an integral part of all the University’s activities.

The ERM framework applies to central administration, all campuses and to all academic, research and administrative levels, and assists in achieving the University’s strategic objectives by bringing a leading practice and a systematic approach to identifying, analyzing, mitigating and reporting risk and control. The ERM Program leads to enhanced decision making and improves the University’s performance since it combines governance, risk and opportunity management, compliance, and financial reporting.

In connection with its vision and mission, the UMass President’s Office is pleased to present the UMass System-Wide 2018 Enterprise Risk Management Report.

1.1 Overview of ERM at the University of Massachusetts

ERM is a coordinated effort by UMPO and all the UMass campuses to treat all risks effectively thereby reducing the overall risk. The system-wide ERM initiative enables resources to be used more effectively to manage and mitigate the risks that can prevent the achievement of system and campus objectives. Before the launch of the system-wide ERM initiative all campuses were currently looking at ways to identify and mitigate risks. What this ERM initiative has done is taken a decentralized process at each of the campuses and made it a centralized system-wide initiative, allowing all the campuses to work together on the identification and mitigation of risks and collaborating on effective mitigation measures (plans, procedures, trainings and policies) to reduce these risks.

Through this system-wide approach to ERM, UMass will:

- Establish common risk language and direction related to risk management.
- Enable improved decision making, planning and prioritization through a structured understanding of risks.
- Identify system-wide strategies to ensure effective use of resources in mitigating risks.
- Provide for a holistic view of risk across the University.
- Provide for a better understanding of risks that affect University's objectives.
- Assign responsibilities for risk oversight among campus leadership and its committees.
- Increase the likelihood that strategic objectives will be achieved.
- Facilitate open communication between management and the Board of Trustees with respect to risk
- Build a culture of integrity and risk awareness.

1.2 UMass ERM Process

UMass utilized best practices and lessons learned from a variety of resources in developing the system-wide ERM framework, in particular the University’s methodology is based on the International Standard ISO 31000; 2018 Risk Management Principles and Guidelines.

**Establish Context:** The ERM process began in March of 2015, when UMPO started developing an enterprise risk management framework that would aid senior leadership in identifying, assessing, and managing risks. The initial work involved identifying UMPO risks and developing a way of comparing progress year over year as well as prioritizing the risks by comparing them to each other. Once the framework was drafted UMPO staff proceeded to catalogue risks and enter them into the framework. During the months of June through November 2015 UMPO staff met several times to identify and rank risks for inclusion in a consolidated risk register. For the next several months the risks where refined leading to a first draft report in June of 2016. After review of the UMPO report, President Meehan, expanded the scope of the project to include all campuses.

**Risk Identification:** In October 2016 each campus submitted their first draft of risks to UMPO. In December 2016, all campuses identified a project manager. A kick off meeting was held with the campus teams facilitated by the UMPO. During the next few months, campus teams met to finalize their risks. Each campus facilitated group sessions bringing together the expertise of over 150 University academic and administrative leaders from across the system to participate in this local process. On March 8, 2017 the UMPO ERM project manager facilitated a system-wide ERM workshop to discuss the campus risk registers and identify areas where we could achieve more consistency and standardization in the risk registers. During the workshop the top risks of each of the campuses were discussed, a common set of ten risk group categories were agreed upon as well as discussion on how the campus risks align with institutional risks.

With each campus having slightly different organizational structures, UMPO and the campuses worked together to create the following ten risk groups. These ten risk groups make it easier to compare risks...
and mitigation activities across the UMass system and allow the campuses to create subject matter teams

- **Academic**: Includes risks relative to academic operations.

- **Athletics**: Includes risks relative to athletic programs.

- **Communications**: Includes risks relative to the university’s reputation, branding and communication with stakeholders.

- **Facilities**: Includes risks relative to physical plant, infrastructure, grounds and operations.

- **Financial**: Includes risks relative to business operations.

- **Human Resources**: Include risks relative to employee relations.

- **Information Technology**: Includes risks relative to information technology infrastructure, security and communication systems.

- **Research**: Includes risks relative to research operations.

- **Safety and Security**: Includes risks relative to natural and human caused hazards.

- **Student Affairs**: Includes risk relative to student well-being.

---

**Figure 2: Ten UMass Risk Groups**
**Risk Analysis/Evaluation:** Following the adoption of the ten risk groups, the campus enterprise risk management project campus leaders met throughout the spring and summer in 2017 to take the over 400 risks identified by all the campuses and align the common risks together to create a draft system-wide set of institutional risks. This common set of risks served as the basis for the inaugural system-wide ERM summit. The half day ERM Summit held on November 2, 2017 at the UMass Medical School had over 90 senior level staff members participate. (See Appendix A for the materials from the summit) During this half day ERM Summit each risk owner (from UMPO and the campuses) came together to develop consensus on system-wide risks, discuss mitigation/controls, identify opportunities to share and collaborate on mitigation activities and discuss what the mitigation strategies/controls are based on, such as best practices, industry standards, peer institutions and lessons learned. The participants worked with their colleagues from across the system and at the end of the day we were able to confirm and update the list of risks and discuss the mitigation and controls for these risks.

**Risk Treatment:** Following the summit the ten risk group facilitators met with their counterparts from the other campuses to develop risk mitigation worksheets for each risk (See Appendix B for a copy of the worksheet). The risk mitigation worksheets were developed from a system-wide perspective and contained the following information: existing risk mitigation/controls, potential risk mitigation controls, what the mitigation strategies are based on and how the effect of mitigations on risk are measured or assessed. The information from these risk mitigation worksheets is compiled into this system-wide report.

**Communication and Consultation:** The system-wide report as well as campus specific risks are communicated and collaborated on across the campuses by various teams and committees. UMPO provides periodic updates to the President’s Council, Board of Trustees, ensuring that ERM responsibilities are part of Management’s annual goals and periodic reviews of ERM by Internal Audit.

**Monitoring and Review:** Each campus along with UMPO will build on the work contained in this report by monitoring existing risks and by reporting on all current and potential mitigation steps. This includes monitoring the effectiveness of the mitigation efforts. UMPO and the risk group facilitators will continue to facilitate system-wide ERM meetings to discuss the sharing of mitigation activities, collaborate on risk reduction initiatives and to identify potential emerging risks.
2. Institutional Risk Assessment

2.1. Overview of All Risks

Based on the system-wide Enterprise Risk Assessment, ERM summit, and risk group meetings, the University of Massachusetts identified 60 institutional risks within the ten risk groups. Each risk is ranked within its risk group and lists risk group owners who are responsible for addressing the risk. Provided below is the risk group, identified risk group owners and number of risks identified by the risk group.

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Risk Owners</th>
<th>Number of Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>Vice Provosts for Academic Affairs</td>
<td>6</td>
</tr>
<tr>
<td>Athletics</td>
<td>Associate Athletic Directors</td>
<td>4</td>
</tr>
<tr>
<td>Communications</td>
<td>Directors of Communications</td>
<td>3</td>
</tr>
<tr>
<td>Facilities</td>
<td>Associate Vice Chancellors for Facilities</td>
<td>6</td>
</tr>
<tr>
<td>Financial</td>
<td>Vice Chancellors of Administration and Finance</td>
<td>6</td>
</tr>
<tr>
<td>Human Resources</td>
<td>Associate Vice Chancellors of Human Resources</td>
<td>5</td>
</tr>
<tr>
<td>Information Technology</td>
<td>Chief Information Officers and Information Security Officers</td>
<td>5</td>
</tr>
<tr>
<td>Research</td>
<td>Assistant Vice Chancellors of Research</td>
<td>5</td>
</tr>
<tr>
<td>Safety and Security</td>
<td>Police Chiefs, Emergency Management Directors, Environmental Health and Safety Directors</td>
<td>12</td>
</tr>
<tr>
<td>Student Affairs</td>
<td>Assistant Vice Chancellors of Student Affairs</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

2.2. Governance and Oversight

As identified above, each risk owner communicates identified risks and associated mitigation strategies to their leadership teams. Risk owners provide oversight and governance to ensure standards are met and that risks are mitigated effectively. The leaders of these risk groups develop mitigation strategies, plans, procedures, etc. to effectively align the risks to the objectives and priorities of the University of Massachusetts. Various councils and committees serve as cross-functional mechanisms to share emerging risks, mitigation strategies and common practices – especially for risks that require an integrated approach or may have complementary impact. Every six months each of the risk owners will be providing updates to the UMPO project manager and UMPO plans to conduct the second ERM summit in the Fall 2018.

2.3. Institutional Risk Groups

What follows below is list of the identified institutional risks, potential impacts, current and future mitigation measures, and the measures strategies we will use to track progress on these risks.
### ACADEMIC RISKS

Includes risks relative to academic operations.

The identified academic institutional risks are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 6</td>
<td>Failure to attract, recruit, and retain students, staff, and faculty</td>
<td>May restrict growth opportunities, negatively impact university reputation, and restrict ability to grow</td>
</tr>
<tr>
<td>2 of 6</td>
<td>Inadequate/out-of-date data management &amp; enterprise application systems</td>
<td>May result in an inability to access real-time current data for strategic decision-making and hamper adaptations to changing environment</td>
</tr>
<tr>
<td>3 of 6</td>
<td>Inadequate facilities/infrastructure to support academic growth and research</td>
<td>Inability to meet strategic and financial targets, negatively affect university’s reputation, and hamper ability to recruit quality students and faculty</td>
</tr>
<tr>
<td>4 of 6</td>
<td>Failure to maintain sufficient academic quality standards required for accreditation</td>
<td>May result in probation, loss of accreditation, restricted growth opportunities, and negatively impact university operations</td>
</tr>
<tr>
<td>5 of 6</td>
<td>Failure to comply with federal immigration rules</td>
<td>May negatively impact student experiences or result in fines, and penalties</td>
</tr>
<tr>
<td>6 of 6</td>
<td>Failure to comply with federal and state regulations, including Title IX and FERPA</td>
<td>May result in fines, penalties, and reputational impact</td>
</tr>
</tbody>
</table>

**Risk: Failure to attract, recruit, and retain students, staff, and faculty**

**Rank:** 1 of 6

**Potential Impact:** May restrict growth opportunities, negatively impact university reputation, and restrict ability to grow.

**Current Mitigation Strategies:** Diversity of the student body and faculty contributes greatly to the quality of students’ overall experiences and is a quality indicator in some college rankings. International students and faculty add to the diversity on campus and help introduce cultural awareness to our students. Lack of diversity will discourage diverse candidates from applying and may discourage international students as well. The University of Massachusetts is committed to a policy of equal opportunity without regard to race, color, religion, gender, gender identity or expression, age, sexual orientation, national origin, ancestry, disability, military status, or genetic information in employment, admission to and participation in academic programs, activities, and services, and the selection of vendors who provide services or products to the university. To fulfill that policy, the University of Massachusetts is further committed to a program of affirmative action to eliminate or mitigate artificial barriers and to increase opportunities for the recruitment and advancement of qualified minorities, women, persons with disabilities, and covered veterans. It is the policy of the University of Massachusetts to comply with the applicable federal and state statutes, rules, and regulations concerning equal opportunity and affirmative action. In addition, the University of Massachusetts is a federal contractor and, as such, is obligated and committed to prohibit unlawful discrimination on the basis of an individual’s race, color, religion, sex, sexual orientation, gender
Current mitigation strategies fall under four categories: admissions, staff recruitment, faculty recruitment, and facilities. With respect to admissions, recruitment strategies focus on attracting the brightest students across all constituencies, with diversity as a strong component. Financial aid policies make the university accessible to all qualified students, and we need to acknowledge and meet financial needs of international students that may be different than domestic students. Staff recruitment focuses on looking nationally for the best and brightest experienced staff members, implementing programs supporting career advancement and professional development, offering competitive salaries, including evaluating the competitiveness of compensation packages often, and reaching out to diverse populations in recruitment. Similarly, faculty recruitment focuses nationally for the best and brightest faculty members, offering them competitive salaries and research support, evaluating the competitiveness of compensation packages often, and reaching out to diverse populations in recruitment. All groups require environments that foster learning, teaching, and quality work. Facilities need to be maintained to the highest standards. New facilities are periodically needed to incorporate technical and research needs of new generations and methods.

Campuses are consistently evaluating their courses and programs, and some campuses partner with local colleges, which allows for students to take courses at another college. Academic Quality Assessment and Development (AQAD) reviews are conducted at each campus. AQAD reviews are an external review process for assessing the core academic functions of each department or program at the university, including teaching and learning; research, professional, and creative activity; and public service and academic outreach. The AQAD review provides a rigorous quality assessment, identifying strengths and targeting areas for growth and development.

Students receive federal, state, and institutional financial aid. If institutional financial aid is not available, private institutions may be able to provide admissions packages that bring costs close enough to attract students away from the public research university. Also, without institutional aid, some students may be forced to attend less expensive state universities or community colleges and miss out on the advantages a research university can provide. Externally contracted audits that ensure that each campus is compliant with the rules governing the administration of such funds are performed tri-annually for state aid and annually for federal aid. The federal government is the largest source of financial aid, followed by the university. While the state’s investment in financial aid has not increased in recent years, the funding provided is important to our students. While the university continues to grow its funding for financial aid annually, reliance on our state and federal partners to do their part is important to ensure our students, specifically those with need, are receiving the required aid to be able to attend.

The population of high school students is decreasing, resulting in lower enrollments at some institutions. The university will need to attract students away from private institutions and increase out-of-state and international enrollments. Lower enrollments impact revenue, reputation, and opportunity for institutional growth. Some campuses collaborate on application admissions. Enrollment managers have meetings monthly for updates, discussion of issues, and problem-solving. UMass works with community colleges on developing matriculation agreements as a strategy to recruit community college students.

These strategies are based on an analysis of demographic data using the best practices of enrollment management and human resources, as well as industry standards.
Measures: We measure our effectiveness by reviewing demographic measures of students, faculty, and staff and survey data of all constituents.

Future Mitigation Strategies: Continue conducting Academic Quality Assessment and Development (AQAD) reviews. Develop system-wide marketing and recruitment strategies to target out-of-state and international students. Identify and recruit in new geographical locations and target adult and nontraditional students. Implement an application process where no qualified student applicant is turned away from the UMass system. Develop new programming that appeals to a new audience of potential students, including online, hybrid, and other modalities. Develop partnerships with industry to provide education in areas of identified need. Develop and implement programs that enhance retention rates. Katherine Newman has organized a system-wide retreat to brainstorm on mitigating demographic decreases in the Northeast and UMass system’s approaches to maximize student recruitment, admissions, and retention.

Risk: Inadequate/out-of-date data management & enterprise application systems

Rank: 2 of 6

Potential Impact: May result in an inability to access real-time current data for strategic decision-making and hamper adaptations to changing environment.

Current Mitigation Strategies: To help mitigate this risk, the Academic Technology Strategic Planning Committee reviews and sets campus goals and priorities in support of faculty, staff, and student technology and applications needs and the integration of a learning management system (Blackboard) across campus OCE and “day” programs, as well as UMass Online (UMOL) and UMass Information Technology Services (UITS). In addition, the university uses business intelligence and data analytics tools, data warehouse, Helio Campus, Tableau, etc. to improve access to and use of student unit record data for diagnostic and predictive analyses in support of student recruitment and success initiatives. The campuses currently use of a single instance of CRM (Salesforce) to engage, recruit, and provide support services to prospective and current students as part of a strategic coordinated and connected campus effort. Improvements can be made to registration, billing and financial aid services in advising and retention activities and the use of document imaging and record management.

The strategies are based on industry best practices and peer institutions.

Measures: The ability to access data in an efficient and timely manner and visualize data for various constituencies. Technology is consistently updated and strategically implemented and best practices are implemented system-wide.

Future Mitigation Strategies: To further mitigate this risk, the university should review the data governance model at campus and system levels, develop an IT strategy across multiple applications and platforms, and evaluate and adopt new tools to support student success. Other potential strategies include: review of SIS system implementations, upgrades, and enhancements to strengthen integrations that support multiple student success initiatives, programs, and units; expand use and capabilities of CRM tool to support additional student success and student engagement efforts (e.g. OCE, advising, career and
coop placement, advancement); and expand use of BI and data analytics to include faculty workload and deployment, classroom and lab space utilization, integration with finance, HR and research data sets. Initiate a data science capacity at the systems office to oversee data analytics.

**Risk: Inadequate facilities/infrastructure to support academic growth and research**

**Rank:** 3 of 6

**Potential Impact:** Inability to meet strategic and financial targets, negatively affect university’s reputation, and hamper ability to recruit quality students and faculty.

**Current Mitigation Strategies:** Mitigation strategies are based upon how critical the facility is to the core mission of the university and whether the necessary funding is available. Deferred maintenance is tracked continuously so that high priority issues may be attended to both tactically and strategically.

The effectiveness of these mitigation strategies is best demonstrated through an increase in work done ‘on-time’ utilizing preventative maintenance and a corresponding reduction in work that is delayed thus making it onto the list of deferred maintenance.

**Measures:** We measure the effectiveness of these mitigation strategies through documentation of work done in preventative maintenance and reduction of deferred maintenance, continuous monitoring and documentation of the deferred maintenance list, and inspections, backlogs, communications, and resources.

**Future Mitigation Strategies:** Going forward, the university should be continuously looking for increased funding for facility maintenance renewal to prevent failures of building systems and to improve the visual appearance and functionality of campus facilities, grounds and infrastructure. Academic Affairs, Facilities and Environmental Health and Safety units will pursue best practices to identify exposures in laboratories so as to prevent laboratory accidents that can result in serious injury, such as exposures related to explosion, fire, chemical/biological hazards, etc. These units will ensure compliance with regulatory requirements to ensure the stability of licensure and permitting.

**Risk: Failure to maintain sufficient academic quality standards required for accreditation**

**Rank:** 4 of 6

**Potential Impact:** May result in probation, loss of accreditation, restricted growth opportunities, and negatively impact university operations.

**Current Mitigation Strategies:** Each of the five university campuses, with their unique programs, missions, and histories, are accredited on a regular basis. It is imperative that such accreditations be maintained. Loss of federal funds would be the most direct result of loss of accreditation, but loss of reputation for high standards would also result. The university campuses are accredited by the New England Association of Schools and Colleges (NEASC), and various schools and colleges within the university system are
accredited in their specialty area by national organizations, e.g. ABET, AACSB, NASAD, CEPH. Loss of NEASC accreditation is unlikely. However, loss in specialty areas that have strengthened their processes (such as teacher preparation) will impact reputation and enrollments. The Massachusetts Department of Elementary and Secondary Education approves (not accredits) teacher preparation programs, and new regulations tie teacher performance back to the preparation program.

The university mitigates this risk by the proper vetting of new faculty and adjunct instructors to ensure appropriate credentials and experience to support academic quality and student success, ongoing training and resources to maintain best practices for teaching and learning, maintaining academic standards for new students entering the university, and providing appropriate supports to promote student success and aligning university-wide resources in support to meet strategic objectives and mission.

The university follows all accreditation standards, and each campus has a dedicated person that is responsible for keeping track of the standard process.

These mitigation strategies are based on a review of the nine NEASC standards, benchmarking against peer institutions and analyzing and addressing items outlined in the NEASC after-study visit report.

**Measures:** We measure the effectiveness of these strategies by monitoring and measuring the academic quality of incoming students, the percent of faculty participating in scholarly research, our student to faculty ratio, and compliance against all NEASC standards. It is essential to maintain hiring of tenured system faculty in line with enrollment growth to meet professional accreditation standards in various disciplines.

**Future Mitigation Strategies:** Strategies the university can consider in the future include introduction of new university-wide budgeting processes and systems to align resources to meet strategic academic needs, focus on student success with regard to retention and completion, and making significant progress on deferred maintenance on the physical plant and campus infrastructure to ensure high-quality facilities.

**Risk: Failure to comply with federal immigration rules**

**Rank:** 5 of 6

**Potential Impact:** May negatively impact student experiences, and result in fines, and penalties.

**Current Mitigation Strategies:** The campuses have a number of immigration policies and procedures in place that focus on the following: F-1, H-1B, and J-1 visa sponsorship and permanent residency sponsorship, among others. The university conducts third-party audits, including fraud detection and student/exchange visitor audits by Homeland Security. Additionally, there is the possibility of an I-9 audit by the Department of Homeland Security Immigration and Customs Enforcement (ICE), Internal Revenue Service (IRS) audits for tax, or Federal Bureau of Investigation (FBI) audits for Export Control. The campuses have response protocols in place to address audits by federal agencies. The campuses also work together on the information from the data management systems, such as Sunapsis, Glacier, and SEVIS, to ensure compliance. The campuses also receive training and regular updates through NAFSA (Association of International Educators), Council for Global Immigration, and Association of Immigration Lawyers. The President’s Office General Counsel Office has done substantial analysis of current campus operations and has identified and recommended best practices, has developed job aids and trainings, and has compared with peer institutions.
These strategies are based on federal laws, Department of Labor regulations, state laws, best practices, and lessons learned.

**Measures:** We measure how well these strategies mitigate the risk by reports of noncompliance.

**Future Mitigation Strategies:** Future mitigation strategies being considered include implementation of the Business Process Review working group recommendations, review and modification as needed of export control procedures and tax treaty procedures, expanded SUMMIT reporting, accessibility for other offices (including HR for payroll and taxes), implementation of an electronic I-9 system to reduce significant financial exposure under audit, and work continually on the analysis of additional enhancements identified by the General Counsel’s Office.

**Risk: Failure to comply with federal and state regulations, including Title IX and FERPA**

**Rank:** 6 of 6

**Potential Impact:** May result in fines, penalties, and reputational impact.

**Current Mitigation Strategies:** Our first and most important strategy is to prevent noncompliance. The university does this by communicating what the laws are in as many ways as possible, including the annual affirmative action plan, personnel manuals, union agreements, grievance policy and procedures, sexual harassment policy and procedures, recruitment sources, recruitment advertisements, notice of employment opportunities, university website Diversity Matters, diversity plan and diversity mission statement, university website sexual respect, and the Title IX website. Monitoring the university grievance policy and procedures and sexual harassment policy and procedures and Title IX policy and procedures insures that when an incident is brought to the attention of the university, the university will take appropriate actions to respond to, stop, remedy, and prevent the reoccurrence of any such discrimination.

Other programs are in place to promote compliance, including Title IX Response and Coordination Team, creation of a Title IX website, implementation of Title IX database to monitor complaints on campuses, and a variety of training programs (online and in person) for key stakeholders on each campus, including first-year students and graduate students. The university also implements ADA accommodations for students, faculty, staff, and visitors.

Additionally, the university has programs in place to comply with the Family Educational Rights and Privacy Act (FERPA). Mitigation measures include training of key stakeholders on campus, an annual reminder sent out on the campuses to all student, faculty, and staff on FERPA, limited access to certain data based on job duties, in addition to the campuses providing advice to faculty and staff on FERPA issues as they arise.

These strategies are based on best practices, lessons learned, and legal requirements.

**Measures:** We measure our success in mitigating this risk by the number and types of complaints received, as well as the compliance of mandatory training on campuses by staff.
**Future Mitigation Strategies:** In the future, we can continually update Title IX and sexual harassment policies and procedures, monitor the Title IX complaint database, and provide training to student leaders in athletics, fraternities, sororities, Registered Student Organizations, and intramural sports. We can create an online Title IX and prevention of harassment and discrimination training for all employees, create online training specifically for graduate students, and share Title IX information at orientation for new department chairs and heads, graduate students, and graduate employees. Include FERPA reviews as we review and think about new technology. We will expand our accessibility of services and implement universal design concepts.
ATHLETIC RISKS
Includes risks relative to athletic programs.

The identified athletic institutional risks are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 4</td>
<td>Inability to adequately support student-athlete health and safety</td>
<td>May result in the possibility of injury and/or loss of life</td>
</tr>
<tr>
<td>2 of 4</td>
<td>Failure to comply with NCAA regulations, including athletic recruiting guidelines</td>
<td>May result in negative consequences, including health, safety, financial, and reputational impacts</td>
</tr>
<tr>
<td>3 of 4</td>
<td>Risks associated with conducting large spectator events</td>
<td>May result in loss of life, injury, and/or damage to campus</td>
</tr>
<tr>
<td>4 of 4</td>
<td>Failure to comply with federal Title IX legislation</td>
<td>May result in penalties from NCAA, loss of federal funding, civil penalties, and corrective actions from the federal Office of Civil Rights</td>
</tr>
</tbody>
</table>

Risk: Inability to adequately support student-athlete health and safety

Rank: 1 of 4

Potential Impact: May result in the possibility of injury and/or loss of life.

Current Mitigation Strategies: Each campus works very closely with all their student-athletes to ensure they are receiving all the proper medical care. The campuses have affiliations with local hospitals and strength and conditioning programs to assist their student-athletes. There are standard procedures to have doctors either on call and/or present at high-impact sporting events. A dedicated ambulance and emergency medical services are on site for all high-impact sports competitions. Each campus maintains plans and procedures for the treatment of athletes.

Student-athlete programs are based on NCAA standards, best practices, and peer institutions.

Measures: The campuses continuously assess the plans, procedures, training programs, and other treatment provided to the student-athletes and then make any necessary updates.

Future Mitigation Strategies: The campuses athletic programs continuously monitor new treatments available for student-athletes and, based on the assessment of staff and facilities, look to make enhancements when necessary.

Risk: Failure to comply with NCAA regulations, including athletic recruiting guidelines

Rank: 2 of 4
Potential Impact: May result in negative consequences, including health, safety, financial, and reputational impacts.

Current Mitigation Strategies: Each campus has a faculty member in the role of Faculty Athletics Representative (FAR) who, working with NCAA compliance officers in the athletic departments, takes all steps necessary to evaluate and comply with all NCAA rules. In addition, the certifying officer (registrar) and the FAR certify all student-athletes are making progress toward degrees, allowing them NCAA eligibility. Athletic departments across the system conduct regular meetings about compliance rules education, compliance council meetings with Admissions, Registrar’s Office, International Office, Residence Life, FAR, and student-athlete services departments. Meetings with athletic marketing staff regarding NCAA regulations and annual campus/clinic meetings are held to ensure applicable NCAA regulations are understood. Various compliance forms are administered through the ARMS software to assist in monitoring NCAA rules. ARMS is a web-based, fully hosted, software as a service (SaaS) solution built specifically for college athletic departments to meet the overall goals of a university’s strategic plan through automation and control. Athletic staff share educational documents and/or announcements from the NCAA conference office (i.e., America East Conference or Atlantic 10 Conference) and other parties with applicable staff members. There is an annual NCAA legislative update, which is a method to educate on current rules, NCAA proposals, and new legislation that is shared within the campuses. In NCAA Division I, there is a coaches recruiting (certification) test, and recruiting calendar reminders are sent out.

The development of institutional policies and procedures to comply with NCAA regulations are based on NCAA requirements, best practices, lessons learned, industry standards, staff training, and peer institutions.

Measures: The NCAA performs periodic reviews of the athletic programs of each campus. Through regular meetings on the campuses, the athletic staffs are benchmarking their policies and procedures and making enhancements as needed. We have also undergone an external audit by the law firm of Bond, Schoeneck & King regarding athletic policies and procedures and athletics compliance. Furthermore, we undergo a yearly audit by Boisselle, Morton & Wolkowicz, LLP regarding athletic department accounting and its adherence to NCAA bylaws.

Future Mitigation Strategies: Ensure athletic staff members have access to all educational resources and are regularly updated on NCAA compliance regulations. Increase education for boosters/representatives of athletics interests. Continue to enlist outside agencies to conduct reviews of the compliance office.

Risk: Risks associated with conducting large spectator events

Rank: 3 of 4

Potential Impact: May result in loss of life, injury, and/or damage to campus.
**Current Mitigation Strategies:** Each campus works with key stakeholders across the campus and with local communities on the planning for large spectator events. Campuses have Emergency Operations Center (EOC) Teams that have plans and participate in emergency exercises with campus and external partners to enhance training and emergency preparation initiatives. There are security measures, including wanding and/or walking through security scanners in entrances to some large sporting venues on the campuses. Event staff at these events are trained to provide customer service and assistance in crowd management and evacuation assistance as required during an emergency. Campuses have access control through the proper credentialing of individuals at the event, as well as radio interoperability for emergency communications.

The development of plans, procedures, and training programs are based on security and event management best practices, National Center for Spectator Sports Safety and Security (NCS4) recommendations, peer institutions, and lessons learned/best practices.

**Measures:** We assess the plans, procedures, and training programs on the implementation of yearly emergency action and evacuation plans and results from scheduled walk through for emergency action plan awareness.

**Future Mitigation Strategies:** Facility-specific emergency action and evacuation plans for the smaller venues on each campus and evaluating conducting biannual facility walk through with campus and external partners for emergency action plan awareness.

**Risk: Failure to comply with federal Title IX legislation**

**Rank:** 4 of 4

**Potential Impact:** May result in penalties from NCAA, loss of federal funding, civil penalties, and corrective actions from the federal Office of Civil Rights.

**Current Mitigation Strategies:** For athletic department purposes, the responsibility of Title IX compliance falls to the administration of the department as well as the campus administration. Each campus has an administrator designated as the person responsible for Title IX compliance, and each athletic department assigns staff to oversee compliance with all Title IX and NCAA regulations. Regardless of membership division within the NCAA (1, 2, or 3), each campus is required to submit an Equity in Athletics Data Analysis (EADA) report with the U.S. Dept. of Education. Each campus is also required to submit an annual Sport Sponsorship form with the NCAA. These are the two primary documents used by the federal government and the NCAA to track Title IX compliance for athletic departments. Athletic administrators are all, or in part, active in the preparation of data for the two annual reports. Once collected and reviewed, data is submitted to the two agencies for tracking. Campus tracking of Title IX legislation for athletic purposes is done through the monitoring of the factors measured to determine Title IX compliance, including but not limited to, budgeting, staffing for individual teams with a goal toward providing equal opportunities for male and female student-athletes.

One significant note for a system-wide review of Title IX compliance among the athletic departments with the UMass system is the size and scope of individual departments. Amherst and Lowell are NCAA Division I programs, while Boston and Dartmouth are Division III. Budget and staffing are significantly different.
between the two divisions and therefore create significantly different challenges to meet Title IX compliance.

The federal Office of Civil Rights (OCR) has established policies and procedures for athletic departments to follow in order to meet Title IX compliance requirements. The so-called three-prong test allows schools to choose any of three options for satisfying the participation component of Title IX. Athletic departments must be able to demonstrate compliance with regard to participation (which is also reported to the NCAA in the annual Sport Sponsorship Report) on an annual basis. The three-prong test includes participation, athletic financial assistance, and treatment. In order for a campus to meet the requirements of Title IX, they must meet the requirements of one of the three areas. The OCR handles challenges to the three-prong test, which can come from member institutions, staff at the member schools, or the general public. OCR has an investigatory staff which will address both informal and formal complaints. The OCR has the ability to issue findings based on complaints and can issue corrective actions in cases where they have determined Title IX compliance is not in effect.

**Measures:** In coordination between the campus Title IX compliance officer and the athletic department staff responsible for the athletic component to Title IX, a campus must declare which method of the three-prong test it uses to establish its compliance with Title IX. The U.S. Dept. of Education, the agency which collects all campus submissions on the EADA report, does not issue a determination on Title IX compliance. Based on the campus strategy meeting the three-prong test, each campus determines its own strategy for Title IX compliance.

**Future Mitigation Strategies:** Consistent communication within the athletic departments among administration, budgeting personnel, and coaches, as well as student-athletes, is crucial to maintaining Title IX compliance. Athletic department staff responsible for Title IX compliance should meet at least on an annual basis with the overall campus coordinator to update and educate athletic-specific elements involved in determining campus Title IX compliance strategies.
COMMUNICATION RISKS
Includes risks relative to university’s reputation, branding and communication with stakeholders.

The identified communication institutional risks are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 3</td>
<td>Compromise of university’s reputation due to real or perceived scandal, poor response to a crisis or other institutional failure</td>
<td>May have a negative effect on enrollment, fundraising, and state investment.</td>
</tr>
<tr>
<td>2 of 3</td>
<td>Failure to effectively communicate major milestones to key stakeholders and target audiences</td>
<td>May significantly impact the university’s brand or reputation</td>
</tr>
<tr>
<td>3 of 3</td>
<td>Unauthorized use of the university’s brand or intellectual property</td>
<td>May significantly impact the university’s brand or reputation</td>
</tr>
</tbody>
</table>

Risk: Compromise of university’s reputation due to real or perceived scandal, poor response to a crisis or other institutional failure

Rank: 1 of 3

Potential Impact: May have a negative effect on enrollment, fundraising, and state investment.

Current Mitigation Strategies: The campuses and system office have crisis communication plans and staff are trained and the plans are exercised regularly. The campuses have Emergency Operations Center (EOC) teams comprised of personnel representing leaders from functional areas throughout campus who are responsible for carrying out response and recovery actions of the university during an emergency. These teams have emergency plans in place to support the crisis communication plans in the event of emergency / event. The campuses utilize traditional and social monitoring tools to respond to emerging reputational issues.

The mitigation strategies are based on emergency management/communication standards, best practices, lessons learned, and interactions between colleagues.

Measures: The campuses track impact on success metrics versus impact on peers who have experience a crisis. The campuses also analyze media response, stakeholder response and social media response.

Future Mitigation Strategies: Explore retaining a third-party call center to activate in the event of a major emergency. Explore retaining a crisis communications consultant to deploy on the event of a reputational emergency and develop the capability to establish a web presence in the event of a campus or system-wide network failure.
Risk: Failure to effectively communicate major milestones to key stakeholders and target audiences

Rank: 2 of 3

Potential Impact: May significantly impact the university’s brand or reputation.

Current Mitigation Strategies: The University’s brand and reputation is of paramount importance. For all audiences, maintaining a positive public image is critical to our continued success. UMass fosters a culture that integrates strategic communications into the decision-making process and maintains open lines of communication across the campuses and the system. There are regular system-wide communications meetings and the system office regularly reallocates resources to campuses with significant opportunities to capitalize on a specific event or milestone.

The mitigation strategies are based on institutional policies, industry best practices, lessons learned, and shared knowledge between campus colleagues.

Measures: The University tracks strategic goals and there is regular reporting of these goals by the campuses and system office. The organization also analyzes media impressions, measurement and evaluation of marketing plans and strategies, market research, stakeholder and social media response.

Future Mitigation Strategies: Establishment of a central budget for campus-specific marketing opportunities and a merit-based process for annual allocation.

Risk: Unauthorized use of the university’s brand or intellectual property

Rank: 3 of 3

Potential Impact: May significantly impact the university’s brand or reputation.

Current Mitigation Strategies:

In addition to the work done by the UMass Trademark and Licensing Administration, which coordinates the placement of university marks both externally and internally, university communications takes a number of steps to monitor and protect the UMass brand. The campuses and system office have social media guidelines, policies and information, including in some cases a list of official university accounts. The teams also host a brand guide that details appropriate uses of the university’s visual identifiers, like logos and wordmarks. Additionally, the university actively monitors social media for fraudulent or unofficial accounts with university visual identifiers and has a process for requesting removal. When necessary, the university also coordinates with General Counsel and the UMass Trademark and Licensing Administration on actionable misuse of the university’s brand or marks.
The mitigation strategies are based on institutional policies, industry best practices, lessons learned, and shared knowledge between campus colleagues.

**Measures:** The campuses monitor the metrics in the days / months following a negative brand appropriation. The campuses also analyze media response, stakeholder response and social media response.

**Future Mitigation Strategies:** Creation of staff trainings for current and new hires on the importance of brand and messaging guidelines and campus and system brand presentations to internal stakeholders.
FACILITIES RISKS
Includes risks relative to physical plant, infrastructure, ground and operations.

The identified facilities institutional risks are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 6</td>
<td>Inadequate campus security and access systems</td>
<td>May result in unauthorized campus access by individuals to areas that could cause harm to persons or property</td>
</tr>
<tr>
<td>2 of 6</td>
<td>Loss of building function, revenue, or reputation resulting from a failure of equipment, system, or building envelop due to the inability to perform critical deferred maintenance projects and/or fund operational maintenance accounts</td>
<td>May lose the ability to occupy or use all or part of a facility, as well as lose research, data, revenue, and reputation</td>
</tr>
<tr>
<td>3 of 6</td>
<td>Loss of utilities supplied by 3rd-party suppliers (gas, electric, potable water)</td>
<td>May lose the ability to occupy or use all or part of a facility, as well as lose research, data, revenue, and reputation</td>
</tr>
<tr>
<td>4 of 6</td>
<td>Inability to retain and hire adequate facilities workforce with the ability to manage increasingly sophisticated buildings in a cost-effective manner</td>
<td>May result in building failure and loss of revenue and reputation</td>
</tr>
<tr>
<td>5 of 6</td>
<td>Inability to provide sufficient space to meet teaching, research, and administrative needs</td>
<td>May negatively impact teaching capabilities, successful research programs, and student recruitment/retention programs</td>
</tr>
<tr>
<td>6 of 6</td>
<td>Changes to, or additional/new regulations to, environmental and building codes and the American Disabilities Act, as well as changes to energy regulation that are unfunded</td>
<td>May result in fines and penalties and our ability to deliver our mission</td>
</tr>
</tbody>
</table>

**Risk: Inadequate campus security and access systems**

**Rank:** 1 of 6

**Potential Impact:** May result in unauthorized campus access by individuals to areas that could cause harm to persons or property.

**Current Mitigation Strategies:** The risk is based on unauthorized campus access by individuals to areas that could cause harm to persons or property. Public Safety, Facilities, and Information Technology plan, design, install, and operate various security systems to include security guards, physical barriers (doors and gates), locking systems, electronic badging systems, and cameras to assure adequate safety and security for the students, faculty, and staff on campus. Campuses have a variety of threat assessment and countermeasure studies performed to develop a reasonable approach to security without overburdening
resources. Additionally, regular threat assessments and documented countermeasure plans are in place on all campuses.

These strategies are based on campus threat assessments and countermeasure deployment, industry best practices, review of peer institutions, and lessons learned from previous incidents.

**Measures:** We will measure our progress on mitigating this risk with crime reporting statistics. We will also document the percent of exterior doors covered with electronic badge access systems and the percent of entry ways and critical areas covered with video surveillance.

**Future Mitigation Strategies:** Long-term strategies include all campuses completing a threat assessment and countermeasure plan, enhanced and expanded video surveillance systems, and electronic badge access systems with additional coverage and biometrics and redundant information technology systems with backup power to support both badge systems and video surveillance. Additionally, all campuses could develop a plan for visitors and guests to receive background checks. Campuses are looking into new keyless technology that can be standardized.

**Risk:** Loss of building function, revenue, or reputation resulting from a failure of equipment, system, or building envelop due to the inability to perform critical deferred maintenance projects and/or fund operational maintenance accounts

**Rank:** 2 of 6

**Potential Impact:** May lose the ability to occupy or use all or part of a facility, as well as lose research, data, revenue, and reputation.

**Current Mitigation Strategies:** Current mitigation strategies include third-party evaluation and assessment of all UMass System facilities to help identify and prioritize deferred maintenance issues and projects. Emphasize preventative maintenance activities and service contracts, recognizing that it is the most efficient and cost effective, methods to proactively prevent issues from occurring. Capture real-time labor and material expense within the work order system to aid with prioritizing attrition management of equipment. Implement best practices of performing regular quality assurance rounds and assessments to proactively identify any developing risks. Additionally, we will continue to lobby for alternate funding sources through the state, municipalities, utilities, grants, and public/private partnerships and ensure that campuses diligently support the Board of Trustee’s guidelines for building operations and establishment of reserves of new construction.

These mitigation strategies are based on best practices and industry standards.

**Measures:** We will measure the effectiveness of these strategies to mitigate risk by achieving reduction in deferred maintenance backlogs, reduction in catastrophic failures impacting operations and function, and third-party assessment and comparison to peers.

**Future Mitigation Strategies:** Future mitigation strategies include appropriate funding and resources to address critical deferred maintenance items and development of a building reinvestment strategy. University guidelines for existing facilities regarding resources to support operations and reserves, similar
to the guidelines established for new construction. As part of new facilities development, renovations, or systems replacement, creation of a “basis of design” that includes redundancy criteria, to minimize single source failure. Enhance public/private partnership efforts to address the system’s projects related to residential life and auxiliaries as a means to address deferred maintenance backlog.

**Risk: Loss of utilities supplied by 3rd-party suppliers (gas, electric, potable water)**

**Rank:** 3 of 6

**Potential Impact:** May lose the ability to occupy or use all or part of a facility, as well as lose research, data, revenue, and reputation.

**Current Mitigation Strategies:** Current mitigation strategies include regular communication with and study of upstream suppliers to understand risk points, knowledge of supplier’s systems to find vulnerability and correct the problems, closely manage utility interconnection agreements, create redundancy as required (additional water lines, fuel tanks, additional feeder cables, etc.), and infrastructure improvements. Loop utility systems that allow alternate feed routes, alternate fuels for heat plants, and cogeneration.

These strategies are based on industry standards on both supply-and-demand management and compliance with all applicable building system codes.

**Measures:** We will measure the effectiveness of these mitigations efforts by testing and evaluating the results of water and steam pressures, and supply downtime as well as inspection reports. We catalog the backlog of unfunded repair and modernization to understand and document operational costs of shutdowns.

**Future Mitigation Strategies:** Future mitigation strategies for consideration are new studies to measure and understand risks and capital projects that mitigate risk and create redundancies. We can develop business continuity plans, use root-cause analysis when failures occur, and test the systems with tabletop exercises, “pull-the-plug tests,” and consultant inspections, etc.

Create at least a N + 1 delivery system, i.e. no single mode of failure. Evaluate critical systems and highest vulnerabilities so as to address those first. Increase interface with utility companies in planning. Expand generator load requirements to full building, rather than just life safety.

**Risk: Inability to retain and hire adequate facilities workforce with the ability to manage increasingly sophisticated buildings in a cost-effective manner**

**Rank:** 4 of 6

**Potential Impact:** May result in building failure and loss of revenue and reputation.

**Current Mitigation Strategies:** Current mitigation strategies include new job descriptions that include the skill sets, licenses, and certifications necessary to operate and maintain modern buildings, systems, and
infrastructure. Apprentice programs to develop trades workers that are required to operate and maintain modern buildings, systems, and infrastructure. Training programs that will properly train staff on the skill sets, licenses, and certifications necessary to operate and maintain modern buildings, systems, and infrastructure. Market surveys to establish the salary and compensation plans needed to attract and retain trades workers that are required to operate and maintain modern buildings, systems, and infrastructure. Engage with Capital Building Projects to ensure staffing plans are part of the project effort. These staffing plans will state the recommended staffing composition, required training, skill sets, licenses, and certifications necessary to operate and maintain new and renovated buildings.

These mitigation strategies are based on industry best practices.

**Measures:** We will measure the effectiveness of these strategies by tracking vacancy rates in the skilled trades, identifying which skilled trades roles are hardest to fill, reporting how many apprentices have gone through the program at university, and tracking the cost to the university to put an apprentice through the program. We will also track the increased rate in candidates for these roles following the implementation of new job descriptions and track and report training provided to trades workers to update skill sets and obtain and maintain licenses and certifications on a quarterly basis.

**Future Mitigation Strategies:** In the future, we will utilize university consultants, such as Sightlines and Educational Advisory Board, to investigate and possibly implement best practices in higher education to retain and hire an adequate facilities workforce beyond what is currently being done. Further increase training, use contracted services, and create campus standards for systems to minimize diversity of knowledge required.

**Risk: Inability to provide sufficient space to meet teaching, research, and administrative needs**

**Rank:** 5 of 6

**Potential Impact:** May negatively impact teaching capabilities, successful research programs, and student recruitment/retention programs.

**Current Mitigation Strategies:** Current mitigation strategies include proactively managing the space by having up-to-date master plans that are created with active involvement of all key constituents and based on strategic plans and an active space committee with diverse representation to vet proposals and planning strategies. The administration can help mitigate this by carefully managing enrollment targets to align with facilities capacities to ensure space in academic areas. Close coordination with the Provost Office is essential to assure proposed new academic programs and staffing hires are aligned with the multiyear capital budget plan, and an “annual call” process for both facilities and equipment requests needs to enable proper prioritization and evaluation. We can increase space utilization through standards, modified registrar procedures, and flexible spaces. Continuous analysis of each space type is needed. A professional and adequately staffed planning group is needed to support all of these mitigation strategies. Lastly, leased space can provide flexibility where needed.

These strategies are based on industry best practices, consultations with peer institutions, and lessons learned.
Measures: We will measure the effectiveness of these mitigation strategies by ensuring that our space utilization data does not exceed national norms, that our capital plans are created from master plans that align with university budget plans and cash flows, and by using space utilization maximization analytics (i.e. motion sensors, cameras). Sightlines data and analysis addresses capital investment, usage intensity, and facilities conditions.

Future Mitigation Strategies: In the future, grant writers/requestors can closely coordinate with facilities about their needs prior to submission. Advocating for the state to allow a multiyear capital funding program would enable campuses to better plan capital strategies for space. Finally, we should expand online programs and other similar academic alternatives.

Risk: Changes to, or additional/new regulations to, environmental and building codes and the American Disabilities Act, as well as changes to energy regulation that are unfunded

Rank: 6 of 6

Potential Impact: May result in fines and penalties and our ability to deliver our mission.

Current Mitigation Strategies: Departments across the system and campuses monitor new regulations and changes and discuss the potential impacts to the university. This is accomplished by a variety of channels, from attending professional conferences, professional memberships, and attending training seminars, as well as working closely with local and state agencies. Through education and advocacy, the campuses then work together to develop appropriate strategies. If additional funding is required, the campuses work with system and campus administration and finance units. The university also works to mitigate expenses through efficiency and effectiveness activities, working together as a system to address any changes. These mitigation strategies are based on best practices and industry standards, particularly the National Association of College and University Business Officers (NACUBO) organization.

Measures: We measure the effectiveness of these strategies by assessing our policies, procedures, and programs against federal, state, and local regulations. If changes are needed, the system and campuses work with appropriate departments to make any updates.

Future Mitigation Strategies: Continue to encourage staff to serve on boards, seek professional development opportunities, and attend meetings when new regulations are being discussed. Continue enhancing relationships with federal, state, and local agencies/politicians, as well as local business leaders.
The identified financial risks to the university are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 6</td>
<td>Failure to maintain short- and long-term fiscal health of the university</td>
<td>May negatively impact our ability to deliver our mission</td>
</tr>
<tr>
<td>2 of 6</td>
<td>Significant loss of funds from a major revenue source</td>
<td>May negatively impact our ability to deliver our mission</td>
</tr>
<tr>
<td>3 of 6</td>
<td>Unfunded local, state, and federal mandates</td>
<td>May negatively impact our ability to deliver our mission</td>
</tr>
<tr>
<td>4 of 6</td>
<td>Financial impact of uninsured loss</td>
<td>May negatively impact university operations</td>
</tr>
<tr>
<td>5 of 6</td>
<td>Inability to comply with tax regulations</td>
<td>May result in penalties, fines and/or could lead to legal action and reputational risk</td>
</tr>
<tr>
<td>6 of 6</td>
<td>Inability to comply with contract requirements</td>
<td>May result in penalties, fines and/or could lead to legal action</td>
</tr>
</tbody>
</table>

Risk: Failure to maintain short- and long-term fiscal health of the university

Rank: 1 of 6

Potential Impact: May negatively impact our ability to deliver our mission

Current Mitigation Strategies: An annual budget process, quarterly reporting of budget to actual results, year-end budget projection, and quarterly reporting of capital projects are in place to monitor the university’s financial performance. Long-term forecasting includes a five-year financial forecast (refreshed annually) and a five-year capital plan (refreshed biennially). A Board policy has been adopted regarding capital planning to monitor capital projects – both costs and project phase from study to completion. Summit (PeopleSoft reporting tool) includes dashboards used by management to monitor performance, including the A&F Executive dashboard, the Department Fiscal Reporting dashboard, and the Department Administration dashboard. Current mitigation strategies are based on best practices and rating agency requirements and are developed using internal and external resources (such as financial advisers).

Measures: Key financial ratios (operating margin, operating cash flow margin, debt service burden, debt service coverage, and spendable cash and investments to operating expenses) provide benchmarks to monitor budget to actual performance and peer performance. These ratios are used each fiscal year and as part of the five-year financial forecast.

Future Mitigation Strategies: Development and implementation of a reserve policy is planned to be completed in the summer/fall 2018. In addition, a review of current capital and debt policies is underway with support from financial advisors. Development of additional data points along with predictive analytics will support better budgeting and forecasting methodologies. Employing position management and a budget and forecasting tool that is consistent across the university and integrated with the ERP will provide the first steps to develop accurate and complete financial reports, allowing for more analysis and limits the time spent coordinating and consolidating manual reports. Implementing a new ERP will be the
next key step in this process, which will enable consistent data entry and financial reporting across the campuses.

**Risk: Significant loss of funds from a major revenue source**

**Rank:** 2 of 6

**Potential Impact:** May negatively impact our ability to deliver our mission

**Current Mitigation Strategies:** The university’s Efficiency and Effectiveness (E&E) initiative has been established to ensure that we are maximizing the benefits of all discretionary spending; the launch of E&E 2.0 is focusing on tracking and cost savings that can be measured by the results recorded in PeopleSoft. The Business Process Redesign (BPR) initiative is evaluating processes to better define and streamline processes across the university. In addition, we have prioritized growing our online program and have adopted other entrepreneurial approaches to revenue generation. Currently, we utilize predictive analytics, business case analysis, and documenting/reviewing return on investments to evaluate programs and services. To track progress, we have implemented a quarterly financial close process and reporting of budget to actual financial results across campuses that will help streamline the year-end close process. Ultimately, loss of revenue may result in expense reductions, which includes faculty, staff, and operational expenses.

Current mitigation strategies are based on best practices as well as rating agency reports. Management uses a combination of internal expertise and outside expertise, such as financial advisers to assess performance.

**Measures:** Key financial ratios (operating margin, operating cash flow margin, debt service burden, debt service coverage, and spendable cash and investments to operating expenses) provide benchmarks to monitor budget to actual performance and peer performance (using Moody’s data). These ratios are used each fiscal year and as part of the five-year financial forecast. Additional measures can include measuring effort versus outcome (financial and nonfinancial), such as cost per program, cost per student, academic quality assessment and development (AQAD) assessments, and key performance indicators (KPIs) for nonacademic units.

**Future Mitigation Strategies:** Development and implementation of a reserve policy is planned to be completed in the summer/fall 2018. In addition, more attention and research on strategies such as diversification of revenue sources, flexibility of revenue sources, more advocacy with state and federal governments for funding, and building and maintaining reserves are necessary. In addition, we can make better use of predictive analytics, perform business case analysis, and document/review return on investments. This could include weekly monitoring of enrollment by senior management throughout the enrollment cycle, retention strategies, and new programs to meet the current workforce needs.

Externally, we can have a better understanding of funders’ ability to pay, as well as the general economic environment with respect to student affordability and state and federal available revenue. We can employ environmental scans and marketing analysis to manage and monitor demographics for recruiting. We can maximize assets and cost sharing with respect to enrollment and course offerings. By more closely
monitoring the P&L by business line and program, we can be aware of shortfalls early. Lastly, by cultivating new relationships, we can ensure there is an ongoing pipeline of new funding sources in development.

**Risk: Unfunded local, state, and federal mandates**

**Rank:** 3 of 6

**Potential Impact:** May negatively impact our ability to deliver our mission

**Current Mitigation Strategies:** Unfunded mandates are those requirements pushed down from the state or federal government, but not funded by those entities. Current strategies to limit mandates involve advocacy at the state and federal level and educating the public and legislators on the cost of proposed laws. In addition, development and implementation of a reserve policy is planned to be completed in the summer/fall 2018, which may be used to offset some costs as deemed appropriate.

**Measures:** We will measure the impact of these mitigation strategies based on our continuous review of budget to actual results. We will also review the business case for any areas potentially impacted by mandates, including the return on investment and the costs avoided. In addition, expense reductions to accommodate additional unfunded costs will be implemented. Lastly, utilization of reserves could offset significant mandates, if deemed appropriate.

**Future Mitigation Strategies:** In the future, we can engage in more advocacy and education both internally with staff and externally with the board and alumni, while also improving our use of electronic tools to develop, track, and utilize advocates. Other strategies include nonpartisan relationship building; identifying personal relationships that staff has with stakeholders, “Bring your legislator to school day” connection to business leaders; use of industry-specific lobbyists; and effective labor strategies.

**Risk: Financial impact of uninsured loss**

**Rank:** 4 of 6

**Potential Impact:** May negatively impact university operations

**Current Mitigation Strategies:** Currently the university insures facilities where possible, based on UMBA’s ability to insure its managed projects and WCCC’s ability to insure property at the Medical School. The university procures other lines of coverage (including but not limited to: general liability, foreign liability, management liability, crime, auto insurance, and leasing vehicles), which also mitigates risk. Finally, management monitors deferred maintenance through our regular assessment of Sightlines data and prioritizes projects with the greatest risk.

These mitigation strategies are based on United Educators and other insurance industry assessments.

**Measures:** We will measure these mitigation strategies through an evaluation of the university’s existing insurance programs and a gap analysis to be performed.

**Future Mitigation Strategies:** We have recently contracted with an independent insurance adviser to assist with the review and evaluation of the university’s current insurance coverage. The university is
advocating a change in state law to allow the university to purchase insurance for state- and university-owned property. Other potential mitigations include insurance for cyber exposures, such as data breach and ransom, and undertaking a complete risk assessment.

**Risk: Compliance with tax regulations**

**Rank:** 5 of 6

**Potential Impact:** May result in penalties, fines, and/or could lead to legal action and reputational risk

**Current Mitigation Strategies:** Currently we are mitigating this risk through training, engaging outside experts to review issues as needed, and through monitoring National Association of College and University Business Officers (NACUBO) standards, tax research tools, attending tax workshops, and examining a variety of tax list serves.

**Measures:** We will measure the impact of these mitigation reporting against the tax risk plan, which needs to be developed.

**Future Mitigation Strategies:** A systemic identification, assessment, ranking, and treatment of tax compliance exposures with future mitigation strategies, including adding external resources (an RFP has been issued for international and domestic nexus issues), to help to determine the university's risk appetite (i.e. nonresident aliens, other international financial compliance issues); coordinating with internal audit to assist with potential mitigation strategies; regular monitoring of incoming payments; improved communication between the central office, campuses, and departments with the use of an internal list serve; expand upon existing tax reporting groups; and develop an inventory of major tax areas and issues and to assign responsibility (internal by campus or external).

**Risk: Compliance with contract requirements**

**Rank:** 6 of 6

**Potential Impact:** May result in penalties, fines, and/or could lead to legal action

**Current Mitigation Strategies:** This risk is currently being mitigated through centralized contracting BuyWays and its various add-on projects. Additionally the Procurement Council meets weekly to implement the most favorable contract terms possible. The Board of Trustees has approved procurement policy T92-031, which created a standard template for purchasing and signatory delegations. We utilize established guidelines as to when we need general counsel legal review for contracts and annually review and publish signature authority guidelines. Lastly, the university conducts audit reviews for third-party providers and construction audits.

These mitigation strategies are based on the Board of Trustees’ policy and procedures; state, federal, and local regulations and laws; and best practices, including standards from the NACUBO, National Association of Educational Procurement (NAEP), and the Institute for Supply Management (ISM) standards.
**Measures:** Mitigation is measured by management review of reports on cost savings/avoidance, efficiency savings, and expenses including contract purchases versus non-contracted purchases, procurement methods (BuyWays and ProCard), and local and diverse supplier spending. We are also trying to identify a system for benchmarking against other, similar higher education systems.

**Future Mitigation Strategies:** Future mitigation strategies include Board policy review and updates of policies on a regular basis, as well as ongoing contract management to ensure vendors are adhering to contract requirements and reviewing diversity requirements. We will evaluate BuyWays modules not currently in use for potential implementation and evaluate BuyWays modules currently in use to assess practice and adjust policies and procedures as needed. We will complete the implementation of the Total Contract Manager and implement training on its use. The Procurement Council will increase coordination with the research groups within the university on federally funded contract requirements to ensure that we adhere to the standards set. The Procurement Council is starting the process to standardize the university documents and implement as templates into the Bonfire web solicitation tool. This will lead to increased training for procurement contracts and coordination with the University’s General Counsel’s Office to ensure legal requirements and consistency.
HUMAN RESOURCE RISKS
Includes risks relative to university/human resources operations.

The identified human resource risks to the university are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 5</td>
<td>Failure to comply with federal and state employment laws and regulations</td>
<td>May result in penalties, fines and/or could lead to legal action and reputational risk</td>
</tr>
<tr>
<td>2 of 5</td>
<td>Failure to protect the privacy, confidentiality, and security of data of employees</td>
<td>May result in penalties, fines and/or could lead to legal action and reputational risk</td>
</tr>
<tr>
<td>3 of 5</td>
<td>Poor recruiting and selection, including inadequate pre-employment screening</td>
<td>May negatively impact University operations and our ability to deliver our mission</td>
</tr>
<tr>
<td>4 of 5</td>
<td>Inability to maintain a climate of safety and civility through positive labor and employee relations</td>
<td>May negatively impact University operations and our ability to deliver our mission</td>
</tr>
<tr>
<td>5 of 5</td>
<td>Lack of proactive clear and comprehensive succession planning.</td>
<td>May negatively impact University operations and our ability to deliver our mission</td>
</tr>
</tbody>
</table>

Risk: Failure to comply with federal and state employment laws and regulations

**Rank:** 1 of 5

**Potential Impact:** May result in penalties, fines and/or could lead to legal action and reputational risk

**Current Mitigation Strategies:** Each campus has experienced chief human resources officers, with staff who are trained in the various legal requirements within their area of responsibility. Many Human Resources staff members are attorneys, nationally certified (HRCI or SHRM), and regularly attend local or national Human Resources conferences. Faculty and staff are trained (through a system wide learning management system) in discrimination and harassment prevention, in accordance with the University Policy on *Non-Discrimination and Harassment (T16-040)*. General Counsel is readily available to advise and assist campus personnel in legal matters.

**Measures:** Completion of all required Affirmative Action Plans and Compensation Equity Studies, appropriate responses to all requests for Family and Medical Leave and or Americans with Disabilities Act accommodations, and timely investigations and appropriate action following complaints—to avoid litigation; in cases of employment-related litigation, number of cases that are successfully defended.

**Future Mitigation Strategies:** Additional training, particularly involving first-line supervisors, is necessary to avoid inadvertent violations. A system wide case/incident tracking system would provide better
information about common alleged violations (which would guide training efforts) and a smooth transmittal of information to General Counsel.

**Risk: Failure to protect the privacy, confidentiality, and security of data of employees**

**Rank:** 2 of 5

**Potential Impact:** May result in penalties, fines and/or could lead to legal action and reputational risk

**Current Mitigation Strategies:** The University recently implemented a two-factor authentication protocol to mitigate against inappropriate access to Human Resources (and finance) systems by unauthorized personnel. Human Resources personnel are trained and often reminded to not leave employee personal or private information unattended (e.g. on desks) or to discuss personnel matters in open spaces or with unauthorized individuals.

**Measures:** Quantity and quality of successful interventions against potential security breaches.

**Future Mitigation Strategies:** Update the University Policy on Fair Information Practices (T77-059); continued training (particularly as new risks emerge); continued migration away from paper files (which are less secure).

**Risk: Poor recruiting and selection, including inadequate pre-employment screening**

**Rank:** 3 of 5

**Potential Impact:** May negatively impact University operations and our ability to deliver our mission

**Current Mitigation Strategies:** All campuses now use an applicant tracking system (iCIMS at Worcester and PageUp at other campuses). Those systems collect education and prior employment information on candidates and allow for appropriate vetting before a candidate is offered a position. Pursuant to the University Policy on Background Reviews (T10-088), the University conducts background reviews, including criminal history, on all candidates for hire.

**Measures:** Number of potential candidates who are disqualified due to a poor background check; turnover (a measure of poor recruiting/selection).

**Future Mitigation Strategies:** Complete the integration between the various applicant tracking systems and the current background review vendor (Creative Services, Inc.) to more efficiently initiate background reviews; offer additional training to search committees and hiring managers to strengthen the recruiting and selection process.

**Risk: Inability to maintain a climate of safety and civility through positive labor and employee relations.**
Rank: 4 of 5

**Potential Impact:** May negatively impact University operations and our ability to deliver our mission

**Current Mitigation Strategies:** Each campus has an environmental health and safety officer, who assesses buildings and grounds for potential safety hazards. The University also offers an Employee Assistance Program (EAP) through CompPsych (Amherst and Worcester also offer in-house Employee Assistance). EAP services are offered free-of-charge to all faculty and staff and their immediate families and can mitigate against stress and other triggers of workplace incidents; some campuses now have prohibitions against and procedures for investigating allegations of “workplace bullying,” which are generally based on the University Policy on *Principles of Employee Conduct (T96-136).* Each campus has labor and employee relations professionals who meet regularly with union representatives to foster a positive environment. General Counsel is readily available to advise and assist campus personnel in legal matters.

**Measures:** Workplace accidents and illnesses; statistics on EAP use; claims and responses to allegations of workplace bullying; success in significant arbitration matters; staff turnover. Some campuses conduct climate surveys.

**Future Mitigation Strategies:** Strengthen safety reporting (Chapter 44 of the Acts of 2018, which will require Massachusetts to have an OSHA “state plan” will require additional health and safety reporting) to identify problem areas for remediation; establish a system wide prohibition against and procedures for investigating allegations of workplace bullying; develop a system wide library of collective bargaining agreements and significant arbitration decisions.

**Risk: Lack of proactive clear and comprehensive succession planning.**

Rank: 5 of 5

**Potential Impact:** May negatively impact University operations and our ability to deliver our mission

**Current Mitigation Strategies:** Each campus currently conducts annual performance appraisals, as well as reviews pursuant to the University Policy on *Review and Evaluation of Senior Administrators (T93-080).* Through those processes, candidates for potential promotion or succession may be identified.

**Measures:** The quality of annual and other reviews to identify top performers for potential promotion. The development of a succession plan document for key roles.

**Future Mitigation Strategies:** Evaluate potential risks of retirements/other departures; develop succession plan to identify potential successors for key roles and development plans to increase readiness. Include Academic Affairs as well as Administration & Finance.
INFORMATION TECHNOLOGY RISKS
Includes risks relative to information technology infrastructure, security, and communication systems.

The identified information technology risks to the university are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 5</td>
<td>An event (moderate, substantial, or catastrophic) occurs that impacts technology services, disrupting campus operations</td>
<td>May result in an adverse impact to operations.</td>
</tr>
<tr>
<td>2 of 5</td>
<td>An event (moderate, substantial, or catastrophic) occurs that compromises the security of information assets.</td>
<td>May result in disruptions to operations, incurring fines, penalties, reputational damage, legal action, and/or loss of funding</td>
</tr>
<tr>
<td>3 of 5</td>
<td>Noncompliance with HIPAA, PCI, FERPA, GDPR, and all other applicable international, federal, and state law and/or contractual requirements</td>
<td>May result in fines, penalties, and reputational and financial damage</td>
</tr>
<tr>
<td>4 of 5</td>
<td>Sustaining adequate resources to meet our current demands and innovating at a rapid enough pace to meet future customer requirements</td>
<td>May result in degraded or disrupted services and a lack of competitive advantage</td>
</tr>
<tr>
<td>5 of 5</td>
<td>UMass campus IT and security policies and standards that are inconsistent, making it difficult to manage IT and security operations and incidents</td>
<td>May result in disruptions to operations, incurring fines, penalties, reputational damage, legal action, and/or loss of funding</td>
</tr>
</tbody>
</table>

Risk: An event (moderate, substantial, or catastrophic) occurs that impacts technology services, disrupting campus operations.

Rank: 1 of 5

Potential Impact: May result in an adverse impact to operations.

Current Mitigation Strategies: Campuses have existing policies, standards, and procedures that identify risks as well as emergency scenarios and emergency response procedures. Campuses have different levels of disaster recovery (DR) planning documentation, from full, testable, and consolidated planning procedures to more disparate and ad-hoc documentation. While full-scale disaster recovery testing in preparation for a total loss of data center capabilities has not been undertaken by any campus, campuses have tested limited DR and data recovery processes, applying different degrees of comprehensiveness. Campuses work with business and academic areas to understand which specific services require recovery. In the event of a full or partially impactful disaster. Campuses utilize necessary recovery sites to ensure that critical data and infrastructure is adequately recoverable. The amount of infrastructure covered varies. The DCO, located in the Shrewsbury Data Center, acts as a partial recovery site for multiple
campuses. All campuses utilize some form of redundancy to ensure critical data and services are available, and all campuses back up critical data and ensure that data is available in the event of a data center disaster. Additionally, all campuses are leveraging secure cloud services in some capacity, disaster recovery capabilities for either storage, messaging, and academic and business application capabilities are potentially available, often at additional costs. (Cloud services risks must be identified and mitigated.) Amherst and Shrewsbury Data Centers are being strongly considered as strategic recovery facilities for all UMass campuses.

These mitigation strategies are based on NIST 800-34, FEMA NDRF, and HIPAA/HITRUST, as well as lessons learned and industry best practices.

**Measures:** We will measure how well these strategies are working to reduce risk by documenting campus disaster recovery plans, campus disaster recovery tests, and service-level agreement metrics, including up time service levels and the development of a business impact analysis. Ultimately, leveraging the two largest and best-equipped data centers (Amherst and Shrewsbury) as full DR failover facilities will demonstrate the highest level of DR capability.

**Future Mitigation Strategies:** Future mitigation strategies, such as campus-wide disaster recovery planning, documentation, and associated testing procedures are key toward ensuring that recovery roles, responsibilities, and business requirements are identified and maintained. With this, we can ensure that campuses apply standardized recovery prioritization criteria. Academic and business areas must define recovery requirements, including Recovery Time Objective (RTO) and Recovery Point Objective (RPO). Additionally, business areas must identify and prioritize applications and data to be recovered. Disaster recovery must be incorporated into campus service delivery models and be maintained and kept evergreen, including appropriate funding. Campuses should maintain adequate staff to develop, maintain, and test disaster recovery capabilities. As we continue to develop a strategy for fully redundant data center facilities, campuses must focus on shoring up critical tactical data, infrastructure, and application recovery capabilities by identifying critical core systems and applications, creating disaster recovery planning documentation, ensuring that recovery of core systems is tenable and tested, collaborating with academic and business stakeholders to ensure that critical applications are recoverable, providing awareness to the business areas regarding system and application recoverability, and leveraging secure cloud-based solutions that include disaster recovery services. Lastly, regardless of the level of disaster recovery capability or maturity, each campus should test management-approved disaster recovery plans at least annually. Tests should include participation from in-scope business areas and should use tabletop tests to ensure substantial benefits and preparedness.
Risk: An event (moderate, substantial, or catastrophic) occurs that compromises the security of information assets

Rank: 2 of 5

Potential Impact: May result in disruptions to operations, incurring fines, penalties, reputational damage, legal action, and/or loss of funding.

Current Mitigation Strategies: Campuses have existing policies, standards, and procedures that inform and direct constituents around the secure and safe handling of UMass information assets. Information security/privacy awareness training exists in some form at each campus. Training is augmented by regular campaigns and ad-hoc threat-awareness communications. Self-assessments are used to determine the maturity level of in-place security controls and protection mechanisms. Some of these are formal some are ad-hoc. Some campuses use third-party (vendor and business partner) risk assessments and findings for remediation steps. Each campus employs processes and tools to identify, prioritize, and respond to threats. This includes SEIM, IDS/IPS, and advanced threat-protection tools. Certain campuses have more sophisticated tools and forensic capabilities. Malware protection exists on all campuses. Some campuses have implemented email security tools and processes for managing and responding to spam and phishing campaigns. Each campus has some form of tested and documented incident-response process.

These mitigation strategies are based on NIST 800-53, and HIPAA/HITRUST, as well as lessons learned and industry best practices.

Measures: Each campus must develop a security roadmap and regularly present risks to senior management. Each campus must develop a comprehensive Security Incident Response Team (SIRT) comprised of senior campus stakeholders. An accompanied SIRT response plan must be developed and kept current. CIO’s and ISO’s will demonstrate a coordinated/integrated response between the campuses that allows for us to report on overall situation awareness. SIRT documentation must be approved by campus senior leadership annually. SIRT members must be trained annually regarding their responsibilities as SIRT members. Strong consideration should be given for acquiring a governance, risk, and compliance (GRC) tool that can be leveraged across all campuses. This tool will help tabulate, correlate, and quantify information security and privacy risks university-wide.

Future Mitigation Strategies: There is a problem with data not being consistently identified, classified, and controlled based on defined classification requirements. Customers are unsure of how to protect information based on its classification resulting in pervasive over-protection and under-protection of data. To remedy this, we will need to create data classification policies for each campus, identify control requirements and communicate to constituents, and institute programs and plans to control data in each campus based on its level of classification. A pervasive issue across all campuses is that assets are not fully identified, creating unknown risks. A complete and comprehensive inventory would allow each campus to better manage risks and fully understand our vulnerabilities. This would include determining gaps in existing processes or tools with the goal of enhancing an accurate and sustainable asset inventory and seeking to leverage buying power across all campuses. Assets are not acquired through a consistent process, often leading to unknown and improperly protected assets installed within UMass networks. A standard process for procuring, “tagging,” and protecting assets would greatly minimize risk. To do this, we need to determine gaps in existing processes or tools with the goal of an accurate procurement, tagging, and protection process. Resource and funding allocation is dependent on accurately depicting
the need for additional administrative and technical controls. We need to improve senior management awareness, adoption, and funding and present regularly (at least annually) at chancellor-level security risk meetings. Lastly, we should institute annual training across all campuses and restrict access to UMass resources if training is not completed.

Risk: Noncompliance with HIPAA, PCI, FERPA, GDPR, and all other applicable international, federal, and state law and/or contractual requirements

Rank: 3 of 5

Potential Impact: May result in fines, penalties, and reputational and financial damage.

Current Mitigation Strategies: The Health Insurance Portability and Accountability Act (HIPAA), sets the standard for protecting sensitive patient data. Any entity that deals with protected health information (PHI) must ensure that all the required physical, network, and process security measures are in place and followed. Not all campuses manage HIPAA data, those that do have necessary policies, procedures, and technical controls in place to ensure that PHI is protected. Not all in-scope campuses have undertaken rigorous internal or external risk assessments to accurately measure compliance. The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children’s education records. All campuses are required to comply with FERPA and apply necessary measures to ensure that student data is protected, although concerted internal or external risk assessments have not been completed. The Payment Card Industry Data Security Standard (PCI DSS) is a set of security standards designed to ensure that ALL entities that accept, process, store, or transmit credit card information maintain a secure environment. Those campuses that are required to comply with FERPA and apply necessary measures to ensure that student data is protected, although concerted internal or external risk assessments have not been completed. The Payment Card Industry Data Security Standard (PCI DSS) is a set of security standards designed to ensure that ALL entities that accept, process, store, or transmit credit card information maintain a secure environment. Those campuses that are required to comply with PCI DSS while leveraging approved credit cards processors. Regardless, annual review attestations of the effectiveness of key PCI controls for in-scope technology and workflow components are required. All campuses have satisfied their respective PCI reporting requirements. Companies that collect data on citizens in European Union (EU) countries will need to comply with strict new rules around protecting customer data by May 25, 2018. The General Data Protection Regulation (GDPR) is expected to set a new standard for consumer rights regarding their data. A cross-campus committee has been formed and tasked with identifying university-wide requirements, in-scope applications, and tactics to prepare for the upcoming deadline. The Massachusetts privacy law (201 CMR-17) establishes minimum standards to be met in connection with the safeguarding of personal information contained in both paper and electronic records. The objectives of this regulation are to insure the security and confidentiality of customer information in a manner fully consistent with industry standards; protect against anticipated threats or hazards to the security or integrity of such information; and protect against unauthorized access to or use of such information that may result in substantial harm or inconvenience to any consumer. Each campus has an executed Written Information Security Plan (WISP) that details their control environment for compliance with 201 CMR-17.

These mitigation strategies are based on NIST 800-53, PCI-DSS, FERPA, SOC 2, HIPAA/HITRUST, and Mass 201 CMR-17 requirements.
**Measures:** Campuses will undertake either a third-party or internal review of their compliance against relevant regulations or an aggregation of multiple regulations, based on the NIST framework, and work to mitigate any findings. This process should be conducted annually and an aggregated executive summary made available to the board of trustees.

**Future Mitigation Strategies:** Campuses share a common need to comply with most of the regulations above. Specific regulatory expertise is different among each campus. A standing “compliance” committee comprised of IT, security, privacy, and academic/business representation would provide a forum to compare and contrast tactics, strategy, successes, and opportunities for enhancement. Campuses should develop security and privacy control architecture and control structure on a consistent framework, NIST Cybersecurity, or NIST 800-53 as examples.

**Risk:** Sustaining adequate resources to meet our current demands and innovating at a rapid enough pace to meet future customer requirements.

**Rank:** 4 of 5

**Potential Impact:** May result in degraded or disrupted services and a lack of competitive advantage.

**Current Mitigation Strategies:** Each campus IT area conducts some measure of regular tactical and strategic resource planning to understand obsolete technology and current technology needs. Campuses capture data for measuring and predicting infrastructure usage and consumption levels. Campuses have implemented system and network monitoring tools that measure and report on critical usage metrics to allow for infrastructure growth and enhancement. Alerts are sent to IT personnel based on predefined usage and consumption criteria. Campuses strive to hire, develop, and maintain skilled management and staff to ensure that technology environments are architected, deployed, and managed adequately. Each campus employs highly available environments in the event that primary, critical infrastructure components are adversely impacted. Campuses work closely with business and academic areas to understand near-term as well as strategic technology requirements. Campus IT areas incorporate relevant data into regular resource planning. Campuses provide forward thinking academic and business solutions focusing on enhancing the user experience and providing a competitive advantage. Campuses develop annual budgets in concert with academic and business areas to ensure transparency and inclusion of specific technology needs.

These mitigation strategies are based on SIX SIGMA principles and ITIL/ITSM, as well as lessons learned and industry best practices.

**Measures:** We will develop and make available metrics that demonstrate IT staffing numbers versus business, research, and academic drivers. For instance, IT staff vs. student population or IT staff vs. number of business or research applications. Additionally, metrics that clearly identify existing skill levels vs. forward-looking technologies will prepare us to stay ahead of recruitment needs in future years.

**Future Mitigation Strategies:** Develop a technology roadmap template at a high-level, that communicates campus technology strategy would provide clarity for IT as well as customers and would facilitate a structured approach toward managing resources. Comprehensive technology roadmaps improve strategic decisions around technical infrastructure (i.e. internal IT, dev/ops, infrastructure, architecture,
software, internal systems, and hardware procurement). Consideration for adopting the principles of ITIL/ITSM, a set of detailed practices for IT service management (ITSM). Depending on campus needs, a full deployment of ITIL may be overkill. Certain aspects of ITIL or the adoption of ITIL “lite” may provide the structure and repeatable processes that campus IT departments require to improve their overall service management capabilities. Ensure regular touchpoints with key academic and business stakeholders to understand baseline, project, and strategic technology requirements. Additionally, campus IT areas should endeavor to become engaged in grant and third-party contract negotiations as early in the process as feasible.

**Risk: UMass campus IT and security policies and standards that are inconsistent, making it difficult to manage IT and security operations and incidents.**

**Rank:** 5 of 5

**Potential Impact:** May result in disruptions to operations, incurring fines, penalties, reputational damage, legal action, and/or loss of funding.

**Current Mitigation Strategies:** Current mitigation strategies can be grouped into the following categories: existing policies and standards, consistent framework, similar compliance requirements, and regular CIO and ISO meetings. Existing policies and standards: All campuses have some level of information security policies and standards in place, with varying degrees of maturity. Campuses draw from specific expertise (of other campus security teams) to bolster and align their own policies. Campuses are actively collaborating on key policies that will provide clear direction around critical information security risks and requirements.

Consistent framework: All campuses have built their information security framework in some degree to the principles of NIST. The NIST Cybersecurity Framework (NIST CSF) provides a policy framework of computer security guidance for how private sector organizations in the United States can assess and improve their ability to prevent, detect, and respond to cyber-attacks. In large part, HIPAA and HITRUST draw from NIST 800-53.

Similar compliance requirements: All campuses align their policies and standards to support specific contractual and regulatory requirements, which are similar. Massachusetts 201 CMR-17, HIPAA, and FERPA are addressed by each campus through policy language through different levels of maturity. Regular CIO and ISO meetings: Leaders from IT and information security realms meet regularly to discuss common challenges and implement standard policies and methodologies when necessary. The strategies are based on guidance from various federal and state agencies and statutes, including NIST 800-53, PCI-DSS, FERPA, SOC 2, HIPAA/HITRUST, and Mass 201 CMR-17 requirements.

**Measures:** We will measure how well these strategies are working to reduce risk by documenting each campus’s policies and standards, comparing and contrasting for campus applicability and opportunities for adoption. We will identify which additional policies will be earmarked for campus-wide adoption and develop plans for incorporation.

**Future Mitigation Strategies:** The CIO’s and ISO’s will continue to work together to identify opportunities for clarity and homogeneity. The President’s Office has hired a new CISO to drive the development of an effective, comprehensive security strategy and program that supports compliance with legal and business
requirements within the UMass Systems Office, heavily influencing security management strategy across the university system. Certain key policies, such as data classification and security incident response, would be initial places to achieve uniformity. Ensuring that campuses classify data based on clear risk and compliance criteria and respond in a consistent manner to security incidents would provide a template for other key policy and standard alignment.
RESEARCH RISKS
Includes risks relative to research operations.

The identified research risks to the university are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 5</td>
<td>Reduction in grants and contracts</td>
<td>May result in loss of research revenue and cause reputational harm</td>
</tr>
<tr>
<td>2 of 5</td>
<td>Inability to meet objectives/goals of recruitment and retention of research faculty, staff, and students related to research enterprise</td>
<td>May restrict growth, research opportunities, and cause reputational harm</td>
</tr>
<tr>
<td>3 of 5</td>
<td>Compromise of security and integrity of research and data</td>
<td>May result in an adverse impact to operations, loss of research revenue, and reputational harm</td>
</tr>
<tr>
<td>4 of 5</td>
<td>Inability to protect or loss of intellectual property</td>
<td>May result in an adverse impact to operations, loss of research revenue, and reputational harm</td>
</tr>
<tr>
<td>5 of 5</td>
<td>Compliance with research regulations</td>
<td>May result in penalties, fines, legal risk, loss of research revenue, and/or reputational harm</td>
</tr>
</tbody>
</table>

**Risk: Reduction in grants and contracts**

**Rank:** 1 of 5

**Potential Impact:** May result in loss of research revenue and reputational harm.

**Current Mitigation Strategies:** Current mitigation strategies include faculty recruitment, training, and development programs that are designed to support research funding. Additionally, faculty are provided various incentives (start-up packages, course buy-outs, and load reduction) to foster research. Capital projects and infrastructure investments, including necessary staffing in administration and compliance areas are aimed to support and leverage research funding. System and campus internal funding investments seed potential projects, demonstrate feasibility, and develop pilot data. The campuses are always looking for ways to diversify and identify alternative funding sources, and as federal funding decreases, we seek to increase funding from nontraditional sources. With respect to our core services, we look for revenue generation opportunities leveraging existing research expertise and resources and work to foster relationships between campuses, businesses, and other institutions of higher education to spur research and innovation. The campuses regularly engage in strategic planning to identify funding trends, sources, and leverage resources.

These mitigation controls and strategies are based on best practices, industry standards, peer institutions, and lessons learned.
**Measures:** We measure the effectiveness of these strategies by annual or quarterly research income reports, analysis of research expenditures, analysis of research proposals submitted versus funded, and analysis of funding/income sources.

**Future Mitigation Strategies:** Future mitigation strategies include the creation of a collaborative research database that would facilitate intercampus collaborations, strengthen funding proposals, and leverage shared system resources. We can improve information technology and research facilities through strategic infrastructure investments necessary to support and attract funded research and provide the administrative support for core services. Hiring of a system Vice President for Research would provide leadership, accountability, initiative, and responsibility for research. Standardization of reporting metrics will improve accuracy, precision, and transparency. Lastly, we can enhance and diversify faculty incentives.

**Risk: Inability to meet objectives/goals of recruitment and retention of research faculty, staff, and students related to research enterprise**

**Rank:** 2 of 5

**Potential Impact:** May restrict growth, research opportunities, and cause reputational harm.

**Current Mitigation Strategies:** Many of these strategies are shared with Academic Affairs strategies related to faculty retention, but we reiterate them here. There is an effort to reduce administrative research impediments. The campus chief research officer (CRO) and provost direct strategic investments in staff, infrastructure, and administrative support for research to facilitate the research enterprise and navigate obstacles to research. Campus leadership incentivizes research success by prioritizing attainment of research goals necessary for promotion and tenure. Each campus offers state-of-the-art research facilities as a means of recruitment and retention. Campuses continually facilitate and encourage collaborative research. Furthermore, financial incentives to support and foster research, recruitment, and retention include salary increases, promotion of entrepreneurial activities, outside consulting, start-up packages, course buy-outs, and course load reductions. Capital projects and other infrastructure investments are made to support and leverage research funding. Campus and system internal investments seed potential projects, demonstrate feasibility, and develop pilot data. The campuses foster relationships between each other, other businesses, and other institutions of higher education to spur research and innovation. Through regular strategic planning, the campuses identify funding, research trends, and sources.

These mitigation controls and strategies are based on best practices and industry standards.

**Measures:** We measure the effectiveness of these strategies by reviewing retention actions, research grant dollars, and current research projects against the university’s research goals.
**Future Mitigation Strategies:** Conduct centralized and more consistent exit interviews to determine why faculty are leaving and explore how institutional research can generate metrics for tracking and informing larger strategy.

**Risk: Compromise of security and integrity of research and data**

**Rank:** 3 of 5

**Potential Impact:** May result in an adverse impact to operations, loss of research revenue, and reputational harm.

**Current Mitigation Strategies:** The campuses have information technology controls, policies, trainings, assessments, email security, and incident-response procedures. Implementation of effective controls requires a collaborative effort between research compliance, campus security, faculty, and information technology. Compliance officer(s) and faculty compliance committees identify data requiring protection and require implementation of appropriate controls. The campuses require researchers to complete training on data security and integrity. Campuses conducted a data inventory survey to identify most sensitive or most regulated research data so data management and security practices can be confirmed.

These mitigation controls and strategies are based on best practices, industry standards, National Institute of Standards and Technology (NIST) standards, the Health Insurance Portability and Accountability Act (HIPAA), the Health Information Technology for Economic and Clinical Health Act (HITECH), and the Family Educational Rights and Privacy Act (FERPA).

**Measures:** We measure the effectiveness of these strategies by the number of trainings conducted, number of data use agreements, number of material transfer agreements, and breaches of data.

**Future Mitigation Strategies:** Formalize the process for review and sign-off of security requirements and do not allow faculty to sign agreements without notifying central administration. Increase training so that faculty understand data use agreements/privacy/confidentiality and are able to correctly classify and appropriately secure data. Explore campuses conducting inventory of data and the standardization of controls based on the risk of the data. Increase IT infrastructure to support data security and integrity. Increase capacity for campus collaborations to leverage strengths and lessons learned (i.e. data use agreements, oversight of volunteers).
Risk: Inability to protect or loss of intellectual property

Rank: 4 of 5

Potential Impact: May result in an adverse impact to operations, loss of research revenue, and reputational harm.

Current Mitigation Strategies: The campuses have individualized policies for intellectual property. Each campus has an office that oversees intellectual property and commercial ventures. Campus departments work with information technology security to implement appropriate data security measures necessary for securing intellectual property, which includes outreach, education, and training on awareness and importance of following the policies and procedures. The Office of General Counsel staff has two attorneys dedicated full time to intellectual property as subject matter experts. The Office of Technology Commercialization and Ventures (OTC&V) policy and procedures requires disclosing intellectual property to OTC&V. Faculty consulting policy protects university intellectual property from unauthorized use in faculty consulting and outside activities. Internal funds are allocated to support research with intellectual property protections. New faculty hires learn about intellectual property policies and procedures during the orientation process, which helps with consistent outreach and training. Campuses have implemented participation agreements to protect campus intellectual property arising during sponsored research activity. In addition to these strategies, it is important to state that effective controls requires a collaborative effort between research compliance, campus security, OTC&V, faculty, and information technology.

These strategies are based on state and federal regulations, best practices, peer institutions, and lessons learned.

Measures: We measure the effectiveness of these strategies by the number of participation agreements signed and the number of noncompliance findings.

Future Mitigation Strategies: We can further mitigate these risks by increasing training and outreach and earmarking licensing funds for allocation to intellectual property protection and security. Reduce the reliance on “just-in-time” information as it exposes faculty to unnecessary risk if information is received too late to be effective. Third-party confidentiality agreements often require protecting third-party intellectual property with the same standard of care as campus proprietary information. However, IT, security, and research compliance lack uniform comprehensive policies for intellectual property protection. Implementation of participation agreements is not uniform nor tracked and can be overlooked with respect to unfunded or internally funded research. The university can explore implementing mitigation strategies based on a risk assessment profile (i.e. as value of intellectual property increases, the amount of security increases), consider improvement of tracking faculty consulting and disclosures, and consider making annual disclosure required, regardless of whether outside activity is undertaken or materially changed. Additionally, improvement in the process of incoming material transfer agreements (MTA), nondisclosure agreements (NDA), and proprietary information agreements (PIA) for non-funded
and course-based activities should be considered. These agreements are often signed by faculty or students without administration knowledge. Mandatory System wide training, and annual recertification on the responsibilities of faculty can provide better controls.

**Risk: Compliance with research regulations**

**Rank:** 5 of 5

**Potential Impact:** May result in penalties, fines, legal risk, loss of research revenue, and/or reputational harm.

**Current Mitigation Strategies:** There are a variety of research regulations that the system and campuses focus on a daily basis. Each campus has an Institutional Review Board (IRB) composed of faculty-researchers responsible for the review and oversight of research on human participants. Campuses have a designated IRB administrator(s) that supports researchers and the IRB. Administrators and board members conduct outreach and training. Campuses have established policies and procedures governing human participant’s research. Similarly, each campus has an Institutional Animal Use and Care Committee responsible for review and oversight of vertebrate research (IACUC). Campus activities related to the use of animals in research are regulated by the Animal Welfare Act and the eighth edition of the *Guide for the Care and Use of Laboratory Animals*. The IACUC committees are composed of faculty-researchers responsible for review and oversight of animal research. Campuses have a designated IACUC administrator(s) that supports researchers and the IACUC. Administrators and board members conduct outreach and training. Campuses have established policies and procedures governing animal research.

These strategies are based on state and federal regulations, best practices, peer institutions, and lessons learned.

**Measures:** We measure the effectiveness of these strategies by the number of noncompliance findings.

**Future Mitigation Strategies:** Future mitigation strategies include additional outreach, training, and education. Consideration of centralizing and leveraging existing system resources into a hub-and-spoke model. Explore improved information technologies that support research compliance and provide tracking data and metrics. Continue strategic investments necessary to support and foster a culture of compliance. Consideration of a system vice president for research would provide leadership, accountability, initiative, and responsibility for research compliance.
SAFETY AND SECURITY RISKS
Includes risks relative to natural and human caused hazards.

The identified safety and security risks to the university are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 12</td>
<td>Lack of coordinated exchange of information (interoperability) with internal and external partners during an incident</td>
<td>May result in the inability to efficiently respond during an incident, which may impact operations and reputation</td>
</tr>
<tr>
<td>2 of 12</td>
<td>Failure to implement continuity planning and exercising continuity plans to test and improve resiliency</td>
<td>May result in the inability to deliver services to support the mission of the university</td>
</tr>
<tr>
<td>3 of 12</td>
<td>Failure to plan for and respond to an active threat incident</td>
<td>May result in loss of life, injury, damage to campus, and/or negatively impact the reputation of the university</td>
</tr>
<tr>
<td>4 of 12</td>
<td>Failure to maintain campus safety programs</td>
<td>May result in loss of life, injury, damage to campus, and/or negatively impact the reputation of the university</td>
</tr>
<tr>
<td>5 of 12</td>
<td>Failure to plan for and respond to risks involving demonstrations or spontaneous celebrations</td>
<td>May result in risk of harm to self or others, damage to property, or arrest</td>
</tr>
<tr>
<td>6 of 12</td>
<td>Failure to detect, prepare for, and respond to an infectious disease outbreak</td>
<td>May result in the inability to deliver services to support the mission of the university, lead to further illnesses and potentially deaths on campus, and/or negatively impact the reputation of the university.</td>
</tr>
<tr>
<td>7 of 12</td>
<td>Failure to detect, prepare for, and respond to chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents</td>
<td>May result in loss of life; injury; damage to the environment, campus infrastructure, or equipment; and/or negatively impact the reputation of the university.</td>
</tr>
<tr>
<td>8 of 12</td>
<td>Failure to comply with environmental regulations</td>
<td>May result in materials being released in the air, soil, or water which could cause harm to people, local wildlife, and/or local habitat. Violations may result in fines, penalties, and reputational damage.</td>
</tr>
<tr>
<td>9 of 12</td>
<td>Failure to detect, prepare for, and respond to natural hazards (such as severe winter weather, tornado, flooding, and hurricanes)</td>
<td>May result in loss of life, injury, or damage to campus</td>
</tr>
<tr>
<td>10 of 12</td>
<td>Inability to evacuate campus in a timely manner during an incident</td>
<td>May result in the inability to protect the campus community during an escalating incident, with the potential increase in injury or death.</td>
</tr>
<tr>
<td>11 of 12</td>
<td>Failure to comply with the Clery Act</td>
<td>May result in fines and/or loss of federal funding</td>
</tr>
</tbody>
</table>
Risk: Lack of coordinated exchange of information (interoperability) with internal and external partners during an incident

Rank: 1 of 12

Potential Impact: May result inability to efficiently respond during an incident, which may impact operations and reputation.

Current Mitigation Strategies: In the event of an emergency situation that poses an immediate threat to the health and safety of the members of the university community, the campuses have various systems in place for communicating information quickly. Some or all of these methods of communication may be activated in the event of an immediate threat to the university campus community. These methods of communication include network emails, emergency text messages that can be sent to a phone or other device, and outdoor sirens and a PA system. Campuses have emergency operation center teams and public information officers that coordinate information both internally and externally during emergencies. Other key communication pieces of equipment at each of the campuses are radios. The current radio systems on the campuses are analog UHF radios, with the exception of Amherst, which in the summer of 2018 is upgrading to a P-25 (public safety encrypted) system.

The development of plans, policies, and communication strategies are based on best practices, lessons learned, Department of Homeland Security standards, and review of other institutions of higher education.

Measures: Based upon frequency of use, measure communication gaps that occur during incidents are reviewed and measured.

Future Mitigation Strategies: Update all campus police agencies to the P-25 radio platform. P-25 is a set of standards for digital mobile radio communications designed for use by public safety organizations in North America. P-25 radios are a direct replacement for analog UHF (example, FM) radios but add the ability to transfer data as well as voice, allowing for a more natural implementation of encryption or messaging. A new system is also necessary due to dead spots in radio communications throughout the campuses and the off-campus buildings. The lapses appeared to be caused by the construction of new buildings and the renovation of existing buildings, which effect how the radio signals pass through the buildings. In its current state, our existing system is limited to only the campus and some of the nearby off-campus buildings. University police also patrol distant off-campus facilities and residences from where we cannot communicate via radio. A new system would offer a multicity-wide coverage. A new system would also provide and option for officers who often travel outside of the extended coverage to contact any other agency within the commonwealth if they encounter an emergency and are obligated to assist.
Risk: Failure to implement continuity planning and exercising continuity plans to test and improve resiliency

Rank: 2 of 12

Potential Impact: May result in the inability to deliver services to support the mission of the university.

Current Mitigation Strategies: Each campus works with key stakeholders and departments to plan for and develop contingencies for a variety of scenarios including single or multiple buildings that are affected, unavailability of personnel, and/or the loss of information technology or data. The university has established a system-wide continuity-planning program called UMass Ready for key departments on each campus. UMass Ready calls for the development of continuity of operations plans reflecting a complete understanding of departmental essential functions, orders of successions/delegations of authority, key personnel, alternate locations, and the vital records, systems, databases, and equipment necessary to support those essential functions. Campuses conduct regular reviews and trainings on these plans, working to ensure that essential operations of the university can continue during an emergency.

The development of continuity plans and the exercising of the plans is based on the Emergency Management Accreditation Program (EMAP) standards and lessons learned/best practices from other institutions of higher education.

Measures: Plans are assessed against the EMAP standards and by the number of departments on each campus that have developed continuity plans.

Future Mitigation Strategies: Following the success of last fall’s ERM summit, the continuity of operations points of contact on each campus are going to meet over summer 2018 to develop a template of essential functions for a core set of departments across the system, and during the fall 2018, we will conduct the inaugural system-wide continuity planning summit.

Risk: Failure to plan for and respond to an active threat incident

Rank: 3 of 12

Potential Impact: May result in loss of life, injury, damage to campus, and/or negatively impact the reputation of the university.

Current Mitigation Strategies: The campuses have Emergency Operations Center (EOC) teams, which are comprised of management personnel representing functional areas of the campuses that are responsible for carrying out response and recovery actions of the campus during times of emergencies. The campus EOC teams work very closely with local, state, and federal stakeholders, including but not limited to, local police, fire, emergency medical services, the Massachusetts Emergency Management Agency, Massachusetts state police, the Federal Emergency Management Agency, and the Federal Bureau of
Investigations. The EOC teams regularly participate in trainings, exercises, and in after-action meeting reviews to evaluate strengths and identify opportunities for enhancement.

Each campus maintains behavioral threat assessment teams, which focus on students, staff, and faculty who may pose a threat to themselves or others and take appropriate action to help the individual and protect the campus community. Representatives from key support offices meet to share information that may come from one of the team members, faculty, staff, or students, or from an outside agency, and then develop action plans.

Each of the campus police departments have a formal active-shooter training program based on national standards, enabling every police officer to immediately respond to an active shooter situation. The campuses regularly perform active threat drills and exercises for all police officers. These drills and exercises are conducted with both members from the campus and members of the local communities’ public safety partners.

The campuses have a variety of active threat awareness programs, emergency procedures, posters, and handouts that are offered and distributed. The campuses also have access control systems and surveillance camera systems; these systems vary from campus to campus. The campuses with residential halls have verification processes for entry and visitor guest policies.

In March 2016, the President’s Office received a $131,250 grant to plan for and conduct the first-ever system-wide active threat exercise. Occurring on Tuesday, March 22, 2016, this exercise allowed each campus’s emergency operations center (EOC) to activate and respond to an active threat scenario within their campus. The collaboration of the five campuses and the President’s Office during the exercise also tested the individual campus’s core capabilities and the ability of the separate locations to communicate and brief each other and the President’s Office on the on-going situation. The communication links between the campuses and the President’s Office also tested the ability to identify any needed support that could be shared between the university campuses.

A major upgrade to enhance the efficiency and effectiveness of emergency communications on the campuses was the system-wide adoption of Rave Mobile Safety as the university’s emergency notification system provider. Previously, three different systems were utilized. The implementation of a single, dedicated emergency notification system not only has saved the university economically, but has also allowed the campuses to share training materials and lessons learned that allow the campuses to better inform students, faculty, staff, and visitors of emergency situations or conditions that could disrupt campus activities. The goal is to effectively communicate emergency information to as many people as possible; the new system has made this happen. In addition, each campus has developed pre-scripted messages in the system which are routinely reviewed and exercised.

The development of emergency plans and the exercising of the plans are based on the Emergency Management Accreditation Program (EMAP) standards, lessons learned/best practices from other institutions of higher education, Federal Bureau of Investigation (FBI) Active Shooter Resources, and peer review of planning documents.
**Measures:** The plans are assessed against national standards and by conducting after-action meetings following an emergency to identify strengths, but more importantly, to identify opportunities for enhancement.

**Future Mitigation Strategies:** All of the UMass campuses provide active-shooter training to students, faculty, and staff utilizing a variety of different methods for delivering this training to their respective communities. In a collaborative approach with the UMass campuses, the UMass President’s Office submitted a grant proposal to the Executive Office of Public Safety and Security (EOPSS) to develop a customized active threat video for the UMass campuses. EOPSS awarded a $100,000 grant to UMass for the development of the video, specifically designed for higher education. Building off the lessons learned from events across the country, this video will enhance each of the campuses’ programs by providing visual guidelines for students, staff, and faculty to prepare for and survive an active shooter situation. The development of the video will become another piece of the campuses’ preparedness programs and will promote everyone having a more active role for their own safety if an event should occur. The goal is to complete the video project by summer 2018 and have it ready for when students return in the new academic year. The campuses also continue to look at enhancing technology, such as access control systems and additional ways to notify the campus communities of an emergency.

**Risk: Failure to maintain campus safety programs**

**Rank:** 4 of 12

**Potential Impact:** May result in loss of life, injury, damage to campus infrastructure or equipment, and/or negatively impact the reputation of the university.

**Current Mitigation Strategies:** Campuses employ environmental health and safety (EH&S) professionals who have the education, knowledge, skills, and required abilities in their field of expertise. In addition, campuses provide funding for staff to maintain required certifications and credentials for their respective component of response. EH&S staff are hired based on position descriptions that reflect the level of experience and competency needed. Staff that are professional in the EH&S field will be able to maintain effective and complete campus safety programs. Campuses obtain licenses, permits, and registrations from regulatory agencies in order to conduct the regulated activity. Regulatory agencies conduct inspections and assessments prior to issuing a license or when renewing applications. These actions work hand-in-hand with campus programs to identify regulatory gaps and reduce the risk of failing to maintain a campus safety program. Campuses have existing policies, procedures, and management plans that inform, train, and direct constituents about how to maintain safety programs which would prevent loss of life, injury, or damage to campus.

Campuses experience inspections from local, state, and federal regulatory agencies—e.g. grant-providing entities; accreditation bodies; insurance companies; and internal self-assessments by campus oversight committees and by EH&S departments. All of these actions are designed to assess compliance, identify risk, and to identify ways to manage and mitigate the identified non-compliance or risk. Some campuses
contract for third-party (vendor and business partner) assessments and inspections. The findings identify gaps in compliance, unacceptable risks, and define remediation steps. Usually plans for improvement are then developed and implemented based on priorities for risk reduction and available funding. EH&S departments provide constituents with orientation, annual training, department-wide training, job-specific training, task-specific training, and remedial training either in an online learning management system, in a classroom, in a staff meeting, one-to-one training, web pages, and using posters and flyers. This ensures that the campus community is aware and trained regarding policies, procedures, and management plans that maintain the campus safety programs through a variety of communications media.

Campuses test and maintain safety equipment so that equipment used to provide safe work practices is kept in a reliable condition, such as emergency deluge showers, emergency eyewash stations, chemical fume hoods, and biological safety cabinets. Campuses conduct drills and exercises to ensure that procedures and plans are conducted as developed, such as fire and evacuation drills. Each campus has some form of tested and documented incident-response process. For example, campuses routinely respond to chemical spills, environmental releases or spills, constituent injury or accidents, fire alarm activations, water intrusions, odors, or indoor air quality complaints. The response process includes root cause review with an improvement plan noted. Some campuses provide annual reports to oversight committees and campus leadership identifying the past year’s organizational experience related to the campus safety programs. These reports can contain information on the status of campus safety programs and program goals for the upcoming year.

Existing campus safety programs are based on local, state, and federal regulatory standards and guidance documents (EPA, OSHA, MA DPH, MA DOL, and MA DEP), accreditation standards, granting agencies requirements, and consensus standards (NIH, CDC, NFPA, and NIOSH). Campus safety programs are also developed using best practices from professional organizations and peer institutions, in addition to lessons learned. Information to assist with campus safety program development is also obtained from professional publications and journals, professional list services, professional conferences, regulatory newsletters, regulatory and vendor conferences, and webinars and seminars.

**Measures:** The effect of these mitigations activities are measured by the results from regulatory compliance inspections and assessments. If the mitigations are effective, it would be expected that the staff’s competencies and the frequency of third-party assessments are maintaining the campuses’ level of compliance and safety performance. If the mitigations are not effective, it would be expected to experience an increase in the number of cited deficiencies from regulatory inspections.

**Future Mitigation Strategies:** The ability to maintain EH&S staff competencies (EH&S staff certifications, professional association memberships, and EH&S staff attendance at professional association seminars) has been more difficult with having had multiple-year budget reductions at UMass Boston, UMass Dartmouth and UMass Medical School, in addition to having no inflationary increases in operating budgets. Continued budget reductions could have an impact on campus safety programs and performance through these two areas. Some campuses have eliminated professional memberships and attendance at seminars and training for some EH&S staff in order to meet budget targets. In that way, at least a minimal
The number of outside reviews is performed. The mitigation for maintaining EH&S staff competencies is to have them attend vendor seminars or webinars, which are often at low or no cost.

**Risk: Failure to plan for and respond to risks involving of demonstrations or spontaneous celebrations**

**Rank:** 5 of 12

**Potential Impact:** May result in risk of harm to self or others, damage to property, or arrest and/or negatively impact the reputation of the university.

**Current Mitigation Strategies:** The University recognizes the rights of its community members to freedom of assembly and speech and strongly believes in fostering discourse and the free exchange of ideas at the university. The university has established Board of Trustee guidelines that focus on the response to demonstrations. When the campuses are notified of demonstrations, key departments on campus provide guidance on how to hold a demonstration that is safe and does not disrupt the functions of the university. Campus leaders communicate with the demonstration leaders to receive a list of demands and arrange meetings for dialogue on the issues and requests presented. If the business of the institution cannot proceed, a reading of the picketing code occurs. Demonstrators are provided the opportunity to disperse.

UMass students can be subject to arrest if there is a refusal to cease demonstration or disperse, after a warning is given. UMass students can be referred to the Dean of Students for a conduct process and can receive a variety of sanctions. Through the conduct process, students who are found to be responsible with multiple and/or dangerous violations are separated from the campus for a period of time (suspension) or permanently (expulsion).

For spontaneous celebrations, key departments on campus engage in pre-planning activities to educate students on expectations and stated consequences for reckless behaviors, such as inciting riot or failure to disperse, work to offer alternative entertainments options, and monitor social media outlets for information on pre-event planning and possible large events. The campuses’ Off Campus Student Life departments communicate with landlords on university preparations and expectations. Students who are found responsible for violating university policies can receive a variety of sanctions. Through the conduct process, students who are found to be responsible with multiple and/or dangerous violations are separated from the campus for a period of time (suspension) or permanently (expulsion). The establishment of a reduced Residence Hall guest policy, Dining Hall, and on-campus parking restrictions during known high-activity weekends lessens the impact of non-UMass affiliated guests being present in the campus environment. The campuses have on-call and duty metrics to measure student and guest behaviors on high-activity weekends. Pre-planning for major events/issues has been instituted as a standard operating procedure.
The development of plans, policies, and programming are based on national standards and lessons learned/best practices from other institutions of higher education.

**Measures:** After every demonstration or spontaneous celebration, after-action meetings are conducted to debrief and determine how effective the planning, communications, and operations went for the event. In addition, the campuses regularly meet with town partners to review student trends and events.

**Future Mitigation Strategies:** Continue to enhance the connections with other agencies and with nonstudent-led demonstrations who arrive on campus and continue to encourage open dialogue with student leadership in regard to non-sanctioned events. Continually review policies, procedures, and plans.

**Risk: Failure to detect, prepare for, and respond to an infectious disease outbreak**

**Rank:** 6 of 12

**Potential Impact:** May result in the inability to deliver services to support the mission of the university, lead to further illnesses and potentially deaths on campus, and/or negatively impact the reputation of the university.

**Current Mitigation Strategies:** Campuses continually provide health education and promotion programs to campus community, including scheduling screening and vaccination clinics as needed.

Campuses maintain partnerships with local hospitals, local departments of public health, and a 24/7 contact availability with the Massachusetts Department of Public Health (MA DPH). Mandated infectious disease reporting is maintained with the MA DPH. This reporting line is both out from campus and in to campus if infectious disease data from off campus is deemed related to campus. Campus health professionals also receive critical and timely information from the Center for Disease Control (CDC) and Health and Homeland Advisory Network (HHAN).

Campus health professionals work together on a number of internal health-care initiatives, including infection control committees and continuing improvement programs with patient care reviews and follow best practices derived from peer institutions and recommendations and regulations from the Massachusetts Department of Public Health Epidemiology Program, the CDC Advisory Committee on Immunization Practices (ACIP), the American College Health Association (ACHA) standards, and the World Health Organization (WHO).

Campuses maintain policies on the assurance the incoming students and onboarding staff have the required vaccinations (or waivers) to meet the MA DPH regulations.

**Measures:** Management of infectious diseases can use local data being received on patient cases by campus health care and measured against local, state, and regional data available through the MA DPH and the CDC.

**Future Mitigation Strategies:** Campuses should develop and maintain a Campus Communicable Disease Exposure Control Plan that involves collaboration with cross-jurisdictional campus partners (emergency management, environmental health and safety, facilities management, Residential Life, Dining Services,
University Relations/Communications, etc.). Campuses should develop, train, and exercise an emergency dispensing/points of dispensing plan. Such plans should capitalize on campus and local resources and public health partners beyond campus boundaries that would be able to assist in an emergency dispensing scenario.

**Risk: Failure to detect, prepare for, and respond to chemical, biological, radiological, nuclear and explosive (CBRNE) incidents**

**Rank:** 7 of 12

**Potential Impact:** May result in loss of life; injury; damage to the environment, campus infrastructure, or equipment; and/or negatively impact the reputation of the university.

**Current Mitigation Strategies:** Campuses employ professionals with related expertise in environmental health and safety (EH&S), facilities and campus services, and research and engagement who have the education, knowledge, skills, and required abilities in their field of expertise to plan for the safe use of and response to scenarios involving chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents. Campuses develop protocols for acquiring, securing, and storing and use of such CBRNE materials in research avenues. Campuses provide on-going training of faculty, staff, and students that interact with such materials so that use of such commodities are done in the safest manner based on regulation and best practices.

Incident reporting and investigation is also implemented for all hazardous material incidents, and reports are distributed citing corrective actions and preventive measures, including any need for additional training, retraining, review of protocols and places, etc.

In addition, campuses partner with local, regional, and state regulatory and response agencies to plan, train, and prepare for any CBRNE-related incident on campus, as well as with third-party contractors for chemical management and incident response. Campuses obtain licenses, permits, and registrations from regulatory agencies in order to conduct the regulated activity. Regulatory agencies conduct inspections and assessments prior to issuing a license, or when renewing applications. These actions work hand-in-hand with campus programs to identify regulatory gaps and reduce the risk of failing to maintain protocols for safe use of CBRNE materials.

Campuses routinely involve end-users in participatory self-regulation through such means as safety committees (laboratory safety committees, biosafety committees, and radiological safety committees) that are faculty-led committees and meet regularly to review best practices and lessons learned from incidents on campus and elsewhere. Mitigation strategies are based on these regulatory directions, plus dialogue available through professional organizations around best practices, including CSHEMA, ABSA, AIHA, AHMM, and ACS.

**Measures:** The effect of these mitigations activities are measured by the results from regulatory compliance inspections and assessments. If the mitigations are effective, it would be expected that the staff and faculty's competencies and the frequency of third-party assessments are maintaining the
campuses’ level of compliance in the safe use of CBRNE materials. Another measurement of these mitigation activities is the increase or decrease of negative incidents involving chemical, biological, radiological, nuclear, and explosive materials.

An increase in waste or a change in the type of waste being disposed of from the research may warrant a review of the research being done and the protocols in place for chemical, biological, and radiological materials.

If the mitigations are not effective, it would also be expected to experience an increase in the number of cited deficiencies from regulatory inspections, an increase in response incidents associated with the use of CBRNE materials, and a potential increase in injuries and illnesses.

**Future Mitigation Strategies:** Consistent training and on-going inspensional activities (self-inspections, researcher-led inspections, and internal (EHS) laboratory inspections) based on best practices and regulatory requirement reinforce the end-user’s responsibility for the safe use of CBRNE materials in research. Because of the complexity of responding to an incident involving CBRNE materials, it is essential to have a collaborative effort between campus and off-campus partners prior to an emergency response. Familiarization meetings, tabletop exercises, and more elaborate functional exercises with campus, local, and regional responders should be an on-going component of the CBRNE management program on campus.

**Risk: Failure to comply with environmental regulations**

**Rank:** 8 of 12

**Potential Impact:** May result in materials being released in the air, soil, or water which could cause harm to people, local wildlife, and/or local habitat. Violations may result in fines, penalties, and reputational damage.

**Current Mitigation Strategies:** Campuses employ professionals with related expertise in environmental health and safety (EH&S) and facilities and campus services, who have the education, knowledge, skills, and required abilities in their field of expertise to plan for, mitigate the risks for, and response to scenarios that ensure compliance with regulation. Campuses permit, monitor and track, and submit regulatory reports for air, sewer, storm water, and reclaimed water emissions.

Campuses create policies and guidelines and follow regulatory procedures for hazardous material management to include: sampling, inspecting, performing and/or overseeing removal, shipment, and disposal. Plans are in place to document the proper disposal as required by regulation, including frequent inspections by the end-user and periodical audits by EH&S. Periodic third-party inspections and assessments are conducted to audit the compliance levels of campus. Polices and protocols are also in place to ensure that all workers and oversight are licensed and/or appropriately trained with regulatory-required initial and annual refresher training. Environmental experts provide environmental health and safety training, consultation, and support to the campus community on areas related to chemical spills, laboratory use, demolition, construction, sustainability efforts, equipment, and maintenance, ensuring that the campuses’ communities have access to the most current safety and regulatory information and provide strategies for the management of hazardous materials to mitigate risk.
Strategies for mitigations are based on best practices, industry standards, peer institutions, lessons learned and certain regulations are detailed in campus permits. Regulators include but are not limited to: the Massachusetts Department of Environmental Protection (MADEP), the Environmental Protection Agency (EPA), local authorities (e.g. wastewater treatment plants, conservation commission, etc.), Occupational Safety and Health Administration (OSHA), the U.S. Department of Transportation (DOT), and other various regulatory requirements and good manufacturing practices.

**Measures:** The effect of these mitigation activities are measured by the results from regulatory compliance inspections and assessments. If the mitigations are effective, it would be expected that the frequency of third-party assessments are maintaining the campuses’ levels of compliance and safety performance. If the mitigations are not effective, it would be expected to experience an increase in the number of cited deficiencies from regulatory inspections, as well as experience an increase in emergency response incidents associated with noncompliant releases into the environment.

**Future Mitigation Strategies:** Along with continued self-inspection and third-party inspections and assessments to assure compliance, better use of the electronic storage of documentation and record management would be a valuable tool in tracking regulatory requirements against the status of campus operations.

**Risk: Failure to detect, prepare for, and respond to natural hazards (such as severe winter weather, tornado, flooding, and hurricanes)**

**Rank:** 9 of 12

**Potential Impact:** May result in loss of life, injury, or damage to campus.

**Current Mitigation Strategies:** The University has established all-hazards emergency management programs at each of the campuses that develop plans for faculty, staff, students, and facilities to prevent, mitigate, prepare for, respond to, and recover from any adverse event or disruption. The university has a multidisciplinary, system-wide, enterprise risk council that meets tri-annually to foster communication, coordination, and collaboration among UMass campuses. This collaboration works to create a disaster-resilient university through the development of policies, procedures, trainings, exercises, plans, educational programs, and resource materials related to all-hazards emergency management. All of the campuses also have developed hazard mitigation plans that received Federal Emergency Management Agency and Massachusetts Emergency Management Agency approval. The hazard mitigation plan assists the campuses in reducing their risk from natural hazards. The plan identifies resources, information, and strategies for risk reduction on campuses and other key facilities off campuses. The university also has an emergency alert system on each of the campuses that is used for notifications and warnings during
emergencies. The alert system can be activated to notify the campus community of a natural hazard event. Pre-scripted templates for natural hazards, such as a tornado, are preloaded into the alert system. The campuses regularly participate in exercises that allow each to test the effectiveness of their plans.

The development of emergency plans and the exercising of the plans are based on the Emergency Management Accreditation Program (EMAP) standards, and lessons learned/best practices from other institutions of higher education, the International Association of Emergency Managers (IAEM), the Federal Emergency Management Agency, the National Fire Protection Standards, and Occupational Safety and Health Administration (OSHA) regulations.

**Measures:** We assess the plans against national standards and by conducting after-action meetings following an emergency to identify strengths and, more importantly, opportunities for enhancement.

**Future Mitigation Strategies:** Regularly review and update campus emergency plans. Participate in federal and state grant programs as an alternative funding source for identified mitigation goals on the campuses. Continuously update university policies related to a natural hazard response, such as emergency alert and campus closure policies, and conduct additional natural hazard emergency exercises.

**Risk: Inability to evacuate campus in a timely manner during an incident**

**Rank:** 10 of 12

**Potential Impact:** May result in the inability to protect the campus community during an escalating incident, with the potential increase in injury or death.

**Current Mitigation Strategies:** Campuses continually plan for and review the infrastructure needs in regard to transportation to and from campus and weigh those needs against the fluid population and means of commuting onto and away from campuses. Each campus has planned events where evacuation planning has been part of the event operations (Commencement, concerts, festivals, etc.). Campuses also plan for severe weather dismissals and routinely operate those plans. Campuses have these plans as a framework to expand the initiation of the evacuation. Those evacuations not only give a framework for a larger operation, they give historical data on real-life evacuations of campus, identifying bottlenecks for traffic, pinch points for pedestrian/motor vehicle access, and the recommended use or non-use of public transportation during certain events.

Each campus has a significantly different means for the community to access campus, secure their modes of transportation, and transverse to their intended final destination. Each campus, whether a single access point, multiple access points, parking garage, or surface lot parking, has challenges when an immediate or all-inclusive evacuation is announced.

Each campus has a finite number of law enforcement and traffic enforcement professionals they can draw on to assist with traffic management during a campus-wide evacuation. Local partnerships with nearby public safety agencies may assist in augmenting internal resources.
The development of emergency plans and the exercising of the plans are based on the Emergency Management Accreditation Program (EMAP) standards and lessons learned/best practices from other institutions of higher education.

**Measures:** Engineering studies can be undertaken to better understand the ability of the campus community to self-evacuate via personal vehicles and public transportation. Given a specific number of access points, their design and size, and the number of exiting vehicles, studies can determine a reasonable facsimile for a timely evacuation.

**Future Mitigation Strategies:** Campuses should review the potential needs for evacuation and consider developing alternative plans for evacuation. Some situations may allow for a timed approach where immediate removal from campus is not necessary, but a timed and tiered evacuation is warranted. In other situations where immediate evacuation may be necessary and will create an unmanageable gridlock, a secondary plan may be needed for a partial “shelter in place” or an evacuation from one portion of campus to another.

**Risk: Failure to comply with the Clery Act**

**Rank:** 11 of 12

**Potential Impact:** May result in fines and/or loss of federal funding.

**Current Mitigation Strategies:** Every year in compliance with the Clery Act, the campuses develop annual security and fire safety reports that include a number of different elements. These elements include crime and fire statistics, training programs, emergency notifications, and emergency plans, as well as a number of additional elements. The campuses are responsible for training campus safety authorities (CSA), who are responsible for reporting certain crimes to predetermined individuals on the campuses. The campuses annually review the list of CSA to ensure the list is accurate. Each campus has a designated Clery compliance officer(s) who have received appropriate training for their responsibilities. Annually, we conduct a peer review process by which the annual security and fire safety reports are reviewed at various levels within the UMass system to ensure compliance, instead of being reviewed by just one department. Each campus annually reviews the Clery map/geography and the policies, plans, and procedures referenced in the report. In the past, we have hired a consultant to review the reports and provide recommendations on enhancements.

The development of plans, policies, and training programs are based on the U.S. Department of Education Handbook for Campus Safety & Security Reporting 2016, best practices, lessons learned, and the review of other institutions of higher education’s Clery Act reports.

**Measures:** We assess the plans, policies, and training programs against the U.S. Department of Education Handbook for Campus Safety & Security Reporting 2016, in particular, each year we conduct an internal compliance audit, utilizing the checklist in Appendix C of the handbook. Campuses measure the feedback from the campus communities regarding content of delivered emergency notification messages. Campuses also track compliance of individuals taking CSA trainings.
**Future Mitigation Strategies:** Periodic review of annual security and fire safety reports from an outside consultant. More enforcement of individuals that have not taking the CSA trainings.

**Risk: Failure to comply with state mandatory immunization requirements**

**Rank:** 12 of 12

**Potential Impact:** May result in loss of license, fines, loss of revenue, audit findings, and/or negative impact on public image.

**Current Mitigation Strategies:** Campuses have immunization policies and compliance tracking procedures to ensure compliance with the law. The campuses annually review the Massachusetts Department of Public Health Massachusetts School Immunization Requirements guidance document. Campus policies and Massachusetts state requirements are widely disseminated to prospective students at open houses, orientations, and in acceptance packages. Every student receives notification of the requirements immediately upon enrollment via electronic medical record secure message links in email and/or text. These communications continue, with increasing frequency, until the student complies with the reporting requirements.

The development of policies, tracking procedures, and communication messages are based on the state mandatory immunization requirement (MGL ch.76 sec.15, 105 CMR 220), industry best practices, and guidelines issued by the American College Health Association and the CDC Advisory Committee on Immunization Practices.

**Measures:** The campuses collect the data and reports are submitted to the Massachusetts Department of Public Health. Rates of compliance are published annually in the Massachusetts College Immunization Survey. The campuses use the compliance rates to track the success of outreach efforts.

**Future Mitigation Strategies:** Ensure prompt follow-up of individuals that do not comply with the requirements.
STUDENT AFFAIRS RISKS
Includes risks relative to student well-being.

The identified student affairs risks to the university are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 8</td>
<td>Increased drug usage: marijuana, vaporizer and edible drugs, painkillers</td>
<td>May result in risk of harm to self or others, and negatively impact their ability to succeed at the university</td>
</tr>
<tr>
<td>2 of 8</td>
<td>Risk associated with a population prone to risk taking, combined with mental development, plus being away from home</td>
<td>May result in risk of harm to self or others and negatively impact their ability to succeed at the university</td>
</tr>
<tr>
<td>3 of 8</td>
<td>Inability to support the physical and mental health and well-being of students</td>
<td>May result in risk of harm to self or others and negatively impact their ability to succeed at the university</td>
</tr>
<tr>
<td>4 of 8</td>
<td>Failure to detect, prepare for, and respond to sexual assault and other interpersonal violence incidents (rape, stalking, sexual harassment, and domestic violence)</td>
<td>May result in risk of harm to self or others and negatively impact their ability to succeed at the university</td>
</tr>
<tr>
<td>5 of 8</td>
<td>Failure to locate and support students, faculty, and staff when traveling domestically and abroad</td>
<td>May result in inability of the university to provide resources and negative reputation exposure to the university</td>
</tr>
<tr>
<td>6 of 8</td>
<td>Failure to detect, prepare for, and respond to bias-based incidents</td>
<td>May result in risk of harm to self or others and negatively impact their ability to succeed at the university</td>
</tr>
<tr>
<td>7 of 8</td>
<td>Lack of compliance with policies/procedures related to minors on campus</td>
<td>May result in injury to minors and subjects the university to fines and legal action</td>
</tr>
<tr>
<td>8 of 8</td>
<td>Compliance with state mandatory insurance requirements</td>
<td>May result in loss of license, fines, loss of revenue, audit findings, and/or negative impact on reputation</td>
</tr>
</tbody>
</table>

**Risk: Increased drug usage: marijuana, vaporizer and edible drugs, painkillers**

**Rank:** 1 of 8

**Potential Impact:** May result in risk of harm to self or others and negatively impact their ability to succeed at the university.

**Current Mitigation Strategies:** All students/employees at each campus are expected to abide by all federal, state, and local laws, including those regulating the use, possession, sale, distribution, manufacture, and cultivation of illicit drugs and alcohol. To safeguard and promote a healthy academic and living environment, the campuses promulgate rules and regulations for the behavior of all members of the community. These are outlined in several major policy statements (i.e., the code of student conduct, the hazing policy, the alcohol and other drug policies, etc.). The campuses have a variety of
services and resources available to all members of the campus communities to provide accurate information relating to drugs and alcohol, to support individual needs, and to assist at crisis points.

The campuses provide students with education on alcohol/drug policies, responsibilities through the Code of Students Conduct, and information on town bylaws at New Students Orientation, on university websites, and in mailings (paper and electronic) to all undergraduate students. All undergraduate students complete an educational program, My Student Body, that explores the health consequences of alcohol and drugs. Expectations are re-stated at floor meetings in residence halls (campuses with on-campus housing). Off-campus students are asked to complete the Living Off Campus Certification which re-emphasizes university expectations and town bylaws. Students who are found responsible for violating university alcohol and drug policies are sanctioned to the BASICS program. The Collegiate Recovery Community is another resource for students seeking assistance as well as the campuses have Student Counseling Services on campus. Through the conduct process, students who are found to be responsible for multiple and/or dangerous violations are separated from the campus for a period of time (suspension) or permanently (expulsion).

These strategies are based on industry best practices, consultations with peer institutions, lessons learned, and all applicable state and federal laws.

**Measures:** We measure the effectiveness of these mitigation strategies by the number of trainings, number of violations, use reduction, and a variety of academic success measures, including: retention, graduation rates, and grade point average (GPA) changes.

**Future Mitigation Strategies:** Continue to collaborate with on- and off-campus partners on risk reduction. Conduct an annual or bi-annual CORE Survey Assessment (largest national alcohol and other drug (AOD) database about college student’s drinking and drug use in the country) to assess perceptions, actual use, and needs. Continue to evaluate the effectiveness of the training programs.

**Risk:** Risk associated with a population prone to risk taking, combined with mental development, plus being away from home

**Rank:** 2 of 8

**Potential Impact:** May result in risk of harm to self or others and negatively impact their ability to succeed at the university.

**Current Mitigation Strategies:** The campuses utilize a number of different programs which include early intervention, social media messaging, active bystander intervention, partnering with parents on the impact of drinking, and residential assistants conduct programming events in the residence halls that address alcohol- and drug-related topics. In addition, the campuses utilize a number of programs that mitigate the spectrum of mental health issues, including suicide prevention. The campuses continue to align with university student success and satisfaction strategic priorities by continued attention and focus on diversity and positive campus climate. There is training for front-line staff in recognizing signs and symptoms. The campuses also have detailed policies that apply to the entire campus community along
with the Student Codes of Conduct. If a situation is beyond the expertise of the campus, the campus then refers the individual to additional services.

These strategies are based on industry best practices, consultations with peer institutions, lessons learned, needs assessments, and focus groups with students.

**Measures:** We measure the effectiveness of these mitigation strategies by rates of recidivism for undergraduate students, use reduction, and a variety of academic success measures, including: retention, graduation rates, and grade point average (GPA) changes. The UMass Medical School monitors individual student through contracts, when needed, through Physician Health Services for School of Medicine students. These contracts usually run the duration of enrollment and sometimes beyond.

**Future Mitigation Strategies:** Continue to enhance collaboration with off-campus treatment centers and hospitals. Conduct an annual or bi-annual CORE Survey Assessment (largest national alcohol and other drug database about college student’s drinking and drug use in the country) to assess perceptions, actual use, and needs.

**Risk: Inability to support the physical and mental health and well-being of students**

**Rank:** 3 of 8

**Potential Impact:** May result in risk of harm to self or others and negatively impact their ability to succeed at the university.

**Current Mitigation Strategies:** The campuses utilize a number of different programs which include early intervention, social media messaging, active bystander intervention, partnering with parents on the impact of drinking, and residential assistants conduct programming events in the residence halls that address alcohol- and drug-related topics. In addition, the campuses utilize a number of programs that mitigate the spectrum of mental health issues, including suicide prevention. The campuses continue to align with university student success and satisfaction strategic priorities by continued attention and focus on diversity and positive campus climate. Some campuses have online reporting, others take reports via email and/or phone. Campuses have behavioral intervention teams that receive reports from the community alerting the teams to potential dangerous behaviors, actions (on social media, in class writing), conversations, changes in academic performance, appearance, attitude, etc. The teams reach out to the students to engage in conversation to help alleviate the issues causing the anxiety and depression. Campuses have counseling services and health services with staff equipped to evaluate, assist, and refer where necessary. A variety of workshops and training programs are offered across the campus campuses that focus on signs, symptoms, and response. The campus’s counseling services refer students to off-campus therapists, and local hospitals are used for emergency situations with many students being released within hours of contact with the emergency room (ER), sending them back to the campus for care. Students may be hospitalized from the ER, from their clinician, or if they are Section 12 patients (commitment by police or EMTs); upon release the hospital social worker often contacts counseling services to coordinate care. This puts the student back into the campus service’s care. Campuses also have prevention and sudden-death policies to help curb the possibility of contagion of suicide when this occurs on campus.
These strategies are based on industry best practices, consultations with peer institutions, lessons learned, and national associations, such as the American College Counseling Association (ACCA), the National Behavioral Intervention Team Association (NABITA), and the American College Health Association (ACHA).

**Measures:** We will measure our progress on mitigating this risk by tracking students for retention, changes in grade point average (GPA), academic progress, and graduation rates. Campuses also review the rates of recidivism.

**Future Mitigation Strategies:** Long-term strategies include reviewing staffing levels at the counseling service centers, additional training programs, and workshops.

**Risk: Failure to detect, prepare for, and respond to sexual assault and other interpersonal violence incidents (rape, stalking, sexual harassment, and domestic violence)**

**Rank:** 4 of 8

**Potential Impact:** May result in risk of harm to self or others and negatively impact their ability to succeed at the university.

**Current Mitigation Strategies:** Each campus issues a statement of policy to inform the campus communities of their comprehensive plans addressing sexual misconduct, educational programs, and procedures that address sexual assault, domestic violence, dating violence, and stalking, whether the incident occurs on or off campus and when it is reported to a university official. In this context, all campuses prohibit the offenses of domestic violence, dating violence, sexual assault, and stalking and reaffirms its commitment to maintain a campus environment emphasizing the dignity and worth of all members of the university community. The campuses provide both proactive and reactive resources to ameliorate the devastating effects on victim/survivors and on our campus communities as a whole. The campuses have Title IX coordination teams to further evaluate, coordinate, and address sexual harassment and sexual violence on campus. The Title IX teams meet weekly to review and evaluate specific incidents of sexual harassment and sexual violence to assure resources and responses are holistically coordinated while ensuring both education and training is provided across the university.

Each campus engages in comprehensive, intentional, and integrated programming, initiatives, strategies, and education campaigns intended to end dating violence, domestic violence, sexual assault, and stalking that are culturally relevant, inclusive of diverse communities and identities, sustainable, responsive to community needs, and informed by research or assessed for value, effectiveness, or outcome, and considering environmental risk and protective factors as they occur on the individual, relationship, institutional, community, and societal levels. Educational programming consists of primary prevention and awareness programs for all incoming students and new employees and ongoing awareness and prevention campaigns for students and employees.

The campuses have also developed robust, annual educational campaigns consisting of presentations that include distribution of educational materials to new students; participating in and presenting information
and materials during new employee orientation; and ongoing activities, programs, and awareness initiatives to all employees and students.

These strategies are based on best practices in conjunction with the system office, other sister campuses, and other educational institutions, compliance with Office of Civil Rights (OCR) guidance from 2017, 2015, 2014, 2010, 2008, and 1997, the Violence Against Women Act, case law, and all applicable state and federal laws.

**Measures:** Participants in all training sessions are required to complete an assessment to demonstrate competency of stated goals. Assessments are analyzed and recommendations are made for further training, modifications to curriculum, and/or facilitator improvement. Participants who receive direct service can complete an anonymous paper or online evaluation that assesses whether they received safety planning (as appropriate) and information regarding campus Title IX options and resources. Monitoring of complaints and timeline for compliance. Number of reporting incidents.

**Future Mitigation Strategies:** Continue to evaluate the trainings being conducted on campus.

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**Risk: Failure to locate and support students, faculty, and staff when traveling domestically and abroad**

**Rank:** 5 of 8

**Potential Impact:** May result in inability of the university to provide resources and negative reputation exposure to the university.

**Current Mitigation Strategies:** The University has many students, faculty, and staff that travel abroad. The university is responsible for providing support to all those that travel on university-related business. Risks inherent with international travel affecting the safety of faculty, staff, and students are continually evaluated. Other risks associated with the transfer of technology and the establishment of business activities present additional areas of concern. The university monitors much of this activity through its International Programs Offices and its campus-based sponsored research departments. Campuses have policies and procedures regarding travel, and system-wide we have launched Terra Dotta, which is a risk management travel program. Through this new system, the university provides travelers on university business additional pre-departure resources, export control guidance, information on international travel insurance coverage, and in the event of emergency, will allow the university to contact the individual and verify their safety and, if required, provide critical safety-related information. Undergraduate students studying aboard for credit are using the Terra Dotta system and receive pre-departure training before leaving to study abroad.

These strategies are based on industry best practices, consultations with peer institutions, and lessons learned.

**Measures:** We will measure the effectiveness of these mitigation strategies by reviewing the data collected and recorded in the Terra Dotta system.
**Future Mitigation Strategies:** Examine all campus travel policies that focus on mandating that all faculty, staff, and graduate students, as well as undergraduate research/independent studies, are required to use the Terra Dotta system.

**Risk: Failure to detect, prepare for, and respond to bias-based incidents**

**Rank:** 6 of 8

**Potential Impact:** May result in risk of harm to self or others and negatively impact their ability to succeed at the university.

**Current Mitigation Strategies:** The campuses have created educational programs: bystander and staff trainings to focus on preventing bias-based behaviors and identifying resources for those impacted. Campuses have several methods that community members can report an incident of bias and receive support, including anonymous reporting. Campuses have also sent messages out about ensuring a safe and welcoming living-learning environment for every member of the campus communities by showing that we reject all forms of bigotry and hatred. An example of this is the UMass Amherst Hate Has No Home campaign. Through the conduct process, students who are found to be responsible for violations are separated from the campus for a period of time (suspension) or permanently (expulsion).

These strategies are based on industry best practices, consultations with peer institutions, lessons learned, and all applicable state and federal laws.

**Measures:** We measure the effectiveness of these mitigation strategies by the number of bias-based incidents (hate crimes) that occur on campus each year. Annually, each campus reports on the number of bias-based incidents that have occurred on campus.

**Future Mitigation Strategies:** Continue to evaluate the trainings being conducted on campus.

**Risk: Lack of compliance with policies/procedures related to minors on campus**

**Rank:** 7 of 8

**Potential Impact:** May result in injury to minors and subjects the university to fines and legal action.

**Current Mitigation Strategies:** Persons that have direct contact with minors in a youth-serving program are required by the campuses to undergo a background check. The purpose of the background check is to identify the existence of past conduct that may increase the risk for children of future abuse. In addition, the ready availability of criminal history and registered sex offender status information has resulted in a significant shift in national practices within higher education to the point where obtaining this information is becoming common practice.

These strategies are based on industry best practices, consultations with peer institutions, lessons learned, and all applicable state and federal laws.
**Measures:** We measure the effectiveness of these mitigation strategies by the policies in place and ensure that all programs and departments are following the policies by conducting the background checks.

**Future Mitigation Strategies:** While there are policies in place across the campuses for programs and departments in direct contact with minors, there is not one university-wide policy about minors. The next step is to develop a system-wide policy on minors.

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**Risk: Compliance with state mandatory insurance requirements**

**Rank:** 8 of 8

**Potential Impact:** May result in loss of license, fines, loss of revenue, audit findings, and/or negative impact on reputation.

**Current Mitigation Strategies:** The campuses monitor student compliance with insurance waivers through consolidated health plans. Over the years, the campuses have improved the interface of information between the Bursar’s Office, consolidated health plans, and Medicare. The campuses have increased customer service to improve manual insurance plan enrollments for graduate employee organizations and student family plans. They have implemented the MassHealth initiative to increase insurance coverage for students that qualify for MassHealth. The campuses have also worked with consolidated health plans to file a minimally essential coverage (MEC) application for Affordable Care Act (ACA) requirements. Students that are not compliant with the waiver process will automatically be billed for the student health benefit plan.

These strategies are based on industry best practices, consultations with peer institutions, lessons learned, and all applicable state and federal laws.

**Measures:** We will measure the effectiveness of these mitigation strategies by running weekly reports to reconcile any waiver discrepancies. There is a semi-annul review of waiver files from consolidated health plans, and monthly billing reports from consolidated health plans are reviewed for accuracy.

**Future Mitigation Strategies:** Campuses will continue to work with the Bursar’s Office to consider students to waive or enroll on their own. This will improve customer service by reducing the amount of waiver appeals. Any student that either does not waive or enroll would then have the insurance premium applied to their account.
3. UMass System-Wide ERM Process in 2018 and Beyond

In 2018, UMPO and the campuses will continue to follow-up on the mitigation strategies as detailed in this Annual Report and ERM Summit #2 will be held sometime in the Fall. Additionally, UMPO will look to further identify quantitative and qualitative metrics to measure progress against each identified risk. We will publish an update to this report in June 2019. In fiscal year 2019, UMPO will perform another assessment to identify new risks and gauge progress on existing mitigation activities.
Appendix A – ERM Summit Materials

Agenda for ERM Summit on November 2, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM to 9:10 AM</td>
<td>Registration / Refreshments</td>
</tr>
<tr>
<td>9:10 AM to 9:30 AM</td>
<td>Opening</td>
</tr>
<tr>
<td>9:30 AM to 10:15 AM</td>
<td>Exercise 1: Review and Confirmation of Risks</td>
</tr>
<tr>
<td>10:15 AM to 10:45 AM</td>
<td>Report Out by Risk Categories</td>
</tr>
<tr>
<td>10:45 AM to 11:45 AM</td>
<td>Exercise 2: Mitigation Worksheets</td>
</tr>
<tr>
<td>11:45 AM to 12:00 PM</td>
<td>Break/Grab Lunch</td>
</tr>
<tr>
<td>12:00 PM to 12:15 PM</td>
<td>Report Out Mitigation Strategies</td>
</tr>
<tr>
<td>12:15 PM to 12:30 PM</td>
<td>Follow Up / Next Steps</td>
</tr>
</tbody>
</table>

The goal of today’s summit is to bring leadership from each of the campuses together to discuss the system-wide framework for an enterprise risk management process, review and identify risks and mitigation strategies, establish a structure for annual reporting and to discuss best practices.
Exercise 1: Review and Confirmation of Risks
The facilitator's role is to guide the discussion, take notes and report out.

45 minutes to complete this exercise.
3 minutes to report out your list of risks.

The goals for this exercise are:
Ask the question in the beginning. What keeps you up at night for the type of risks in your area?
- Review current list of risks
- Review the description and make sure the language is correct
- Identify any risk that might be missing
- Delete any risks that are not really risks.

You will be provided with the following:
- Current list of risks for your risk group (excel documents)
- Risk List Document (word document)
  - You will use this document to document the risks

Exercise 2: Mitigation Worksheets
The facilitator's role is to guide the discussion, take notes and report out.

1 hour to complete this exercise.
2 minutes to report out. You will just pick out one example and every group may not have a chance to report out.

The goals for this exercise are:
- Complete a mitigation worksheet for a minimum of one risk, if you are able to get through more continue.
  - More important to fully complete a mitigation worksheet versus attempting to complete a worksheet for each risk.
- Questions to ask
  - Do we have any Board policies, guidelines, if so what are they
  - Is there state or federal laws that governing this risk
  - Are there opportunities to share best practices across the system

You will be provided with the following:
- You will use your risks identified in exercise 1 for your risk group.
University of Massachusetts System-Wide Enterprise Risk Management Summit

November 2, 2017

Introductions

Goal of the Summit

The goal of today's summit is to bring all the campuses Enterprise Risk Management committees together to review and identify risks and mitigation strategies, to establish a structure for annual reporting and an opportunity to discuss best practices to identify opportunities to share mitigation strategies.

What is Enterprise Risk Management?

- A framework, by which the major risks facing the University are identified, evaluated, and mitigated.
- Allows for the development and deploying of effective mitigation strategies for risks at the campus and system level.
- A process that facilitates an appropriate risk response to ensure UMass can meet its objectives.
- A system-wide initiative to prioritize and optimize current programs, solutions, and goals focused on risk.

Why Are We Doing It?

- Ensure we are doing everything we can to promote a safe and secure environment on our campuses.
- Provide for a holistic view of risks across the University.
- Standards & Poor's / Moody's have expanded their ratings criteria for non-profit entities to include consideration of ERM.
- Higher Ed peer schools increasingly looking at ERM initiatives.
- UMass Board of Trustee expectations.

How Did We Get to Today?

- Launched President’s Office ERM initiative
- Identified UMPO risks
- Expand scope to include all campuses
- Draft: Campus leaders identified risks
- Risk Groups Identified
- Board of Trustees Update in June 2017
- UMPO and campuses analyzed risks to develop draft enterprise risks
System-Wide Outcomes for FY18

- Campus ERM Teams participate in first ever system-wide ERM summit
- Campus to develop and publish an ERM report alongside the publication of the second annual UMFO ERM report.
- All campuses will have an established standing ERM Team with regular meetings.
- Collaborate on sharing best practices for mitigating risks

What We Consider Success Today

- Leaving today with a set of consensus system-wide enterprise risks
- Documentation mitigation / controls for at least one risk
- Understanding next steps when the day concludes

ERM Framework

Types of Risk

- **Financial**: An increase in cost or decrease in revenue.
- **Health and Safety**: Physical or emotional injuries, or fatalities.
- **Operational**: Inability to carry out a key activity effectively or efficiently.
- **Reputational**: Damage caused that spills over to how the University is valued or perceived.
- **Strategic**: A failure to achieve a strategic objective—either at the department level, entire UMass campus, or system-wide level.

Risk Groups

Exercise 1: Review and Confirmation of Risks

- Review current list of risks
- Review the description and make sure the language is correct
- Identify any risks that might be missing
- Delete any risks that are not really risks
Mitigation Worksheets

- For each risk identify the following:
  - Existing mitigation/control(s)
  - What the mitigation/control(s) are based on
  - Potential mitigation/control(s)
  - Measurement/statistic – how will it be measured

Report Out

- List your mitigation/control(s)
- Any challenges identifying mitigation/control(s)
## Appendix B – ERM Risk Mitigation Worksheet

<table>
<thead>
<tr>
<th>Risk Group:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Owners:</td>
<td></td>
</tr>
<tr>
<td>Risk:</td>
<td></td>
</tr>
<tr>
<td>Risk Description:</td>
<td></td>
</tr>
</tbody>
</table>

### Mitigation/Controls

<table>
<thead>
<tr>
<th>Existing Risk Mitigation/Controls:</th>
<th>What the Mitigation / Strategies are based on? Such as Best practices, industry standards, peer institutions and/or lessons learned.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(List actions, mitigation measures, controls, plans, trainings, etc. that are designed to reduce the risk and/or its consequences)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential Risk Mitigation / Controls</th>
<th>Measurement/Statistics – how will effect of mitigations on risk be measured or assessed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(List any potential mitigation / controls that should be or is in discussion to be put into place)</td>
<td></td>
</tr>
</tbody>
</table>