



Enterprise Risk Management Initiative Report

Office of Risk Management

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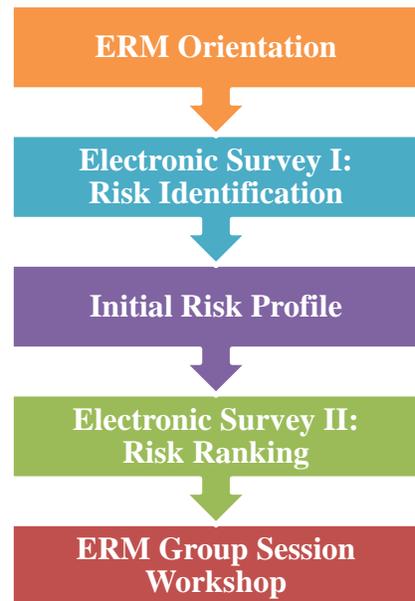
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1. EXECUTIVE SUMMARY

Enterprise Risk Management is a coordinated approach to assess, analyze, mitigate and monitor risks and opportunities that affect the achievement of the University’s strategic objectives. Unlike traditional risk management, Enterprise risk management (ERM) focuses on strategy and expands the traditional risk-management process to include all risks not just those associated with accidental losses. It is intended to move organizations away from a fragmented, ad hoc and reactive process to one that actively communicates risks across divisions and identifies enterprise wide solutions.

The Office of Risk Management was charged with beginning the process of developing an ERM framework including the creation of an initial risk profile for the University. This risk profile was developed in collaboration with 52 senior managers representing major functional areas from across the campus. The process was designed to increase participant’s awareness and knowledge of ERM, result in the identification and assessment of institutional risks, and facilitate discussion of those risks across organizational boundaries. Process included five steps as summarized below.

1. ERM orientation facilitated by Dr. Paul Walker, consultant and professor of Enterprise Risk Management at the University of Virginia.
2. Electronic Survey of representatives that identified 196 risks
3. Combining and categorizing risks to create initial risk profile
4. 2nd electronic survey to identify top 32 risks
5. Series of four workshops to rank risks using two methodologies - an impact / likelihood assessment and a strategic risk evaluation that focused on the transformational outcomes identified in the strategic plan.



The ERM group sessions assessed the top 32 risks, as identified during the survey process, using two methodologies. The first, or primary method, was based on the estimated likelihood and impact (financial, reputational, and health) of the event. The second, referred to as a strategic risk

evaluation, ranked risks based on potential for impacting the four transformational outcomes identified in the UMD Strategic Plan. While the impact / likelihood assessment is used as a primary risk assessment approach, the strategic risk evaluation provides additional perspective on how these risks were viewed by the working groups.

| METHODOLOGY 1: LIKELIHOOD & IMPACT | | METHODOLOGY 2: STRATEGIC RISK EVALUATION |
|---|--------------------------------------|---|
| Rank | Risk Theme | Risk Theme |
| 1 | Facility Maintenance and Renewal | Recruitment and Retention |
| 2 | Criminal Activities | Stagnated Salaries and Pay Disparities |
| 3 | IT Security | State Budget Reduction |
| 4 | State Budget Reduction | Facility Maintenance and Renewal |
| 5 | Emergency Management | Campus Experience |
| 6 | Growing Student Population | Criminal Activities |
| 7 | Education Innovation | Extramural Funding from Federal Agencies |
| 8 | Campus Experience | Culture of “Risk Aversion” |
| 9 | Hyper-Bureaucratization | Technology Infrastructure and Unification of Applications |
| 10 | Stagnated Salaries & Pay Disparities | Education Innovation |

Recommendations

This project was an initial step in the development of an ERM system. Based on this effort it is recommended that the process of developing and implementing an ERM system continues using the recommendations below as a starting point.

1. Conduct a risk identification and prioritization exercise for senior leadership.
2. Establish an institutional risk philosophy emphasizing that the University accepts that successful risk taking is necessary for the University to achieve its objectives and that the University seeks to be risk-aware but not risk-averse.
3. Establish roles and responsibilities for risk management including the role of a Risk Officer and a Risk Oversight Group.
4. Implement process for ongoing high level monitoring of critical risks
5. Incorporate principles of ERM at the development stage for new University initiatives.

2. PROJECT CHARGE

2.1 Purpose

Enterprise Risk Management is a coordinated approach to assess, analyze, mitigate and monitor risks and opportunities that affect the achievement of the University's strategic and financial objectives. Historically, risks have been viewed as something to avoid or eliminate. Enterprise Risk Management (ERM) takes a broader view to evaluate risks and opportunities. It should be thought of as a tool or approach to improve decision making and resource allocation rather than as a separate administrative process.

2.2 Charge

The Office of Risk Management was charged with beginning the process of developing a culture of ERM and creating an initial risk profile for the University. Specifically we were asked to:

- Identify representatives from each of the major functional areas of the University
- Conduct information sessions to raise the representatives' understanding of ERM
- Ensure the process encouraged and facilitated conversations across divisional boundaries
- Identify and rank the top risks facing the University
- Make recommendations for further development of ERM at UMD

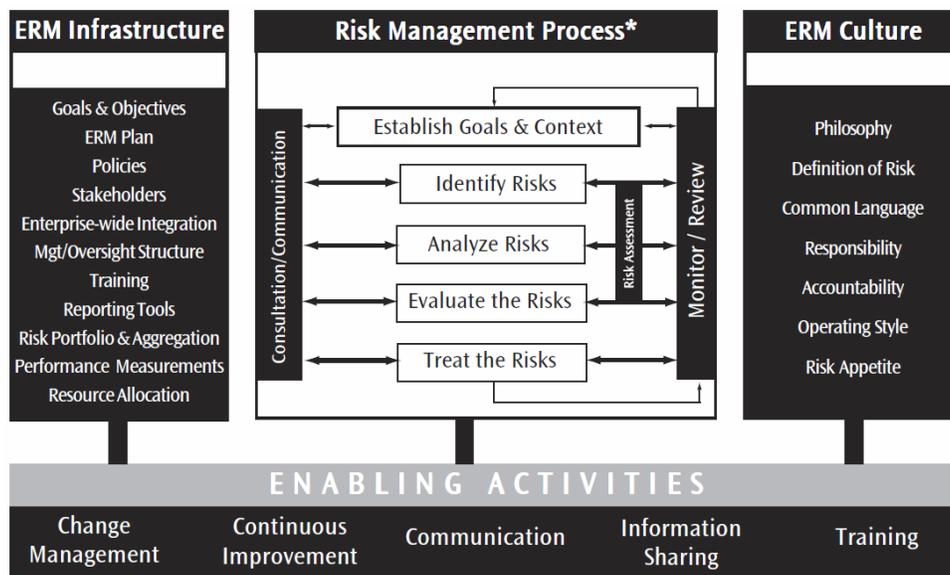
3. BACKGROUND

In the 1980’s, long before the Sarbanes-Oxley Act of 2002 (SOX), several significant failures occurred as a result of high-risk financing strategies. These failures, among others, have placed a greater focus on improving overall risk management practices for organizations of all types, including institutions of higher learning. Several organizations related to educational institutions, such as the National Association of College and University Business Officers (NACUBO) and the Association of College and University Auditors (ACUA), have recognized the need for more effective risk management practices. These organizations have tracked ERM - related process in the broader corporate sector to transfer many of those concepts to institutions of higher education.

3.1 ERM Concepts & Framework

Risk can be defined as any issue that impacts an institutions ability to meet its objectives. **Enterprise Risk Management** provides a framework for managing risk, and involves identifying particular events or circumstances (risks and opportunities) relevant to the organization's objectives; assessing them in terms of likelihood and magnitude of impact; determining a response strategy and monitoring progress. By anticipating, identifying and addressing risks and opportunities the institution is able to provide a reasonable assurance regarding the achievement of the entity’s objectives.

The **Risk Management Framework** developed by the joint committee formed by Australia and New Zealand, and revised by University Risk Management and Insurance Association (URMIA) provides a succinct overview of the ERM process and supporting elements.



3.2 A Successful ERM Program

As ERM is a process, implementation of this process requires time, patience and persistence.

Success of the program relies upon:

- Top level support – senior leadership must create an ERM culture by setting a clear mandate for ERM within the University
- Clear roles and responsibilities and assigned accountability for critical risks
- Establishing an effective process and follow-through for identifying, assessing, mitigating, and monitoring of critical risks
- Linking ERM to strategic planning and decision making
- Sufficient resources – Ensure sufficient resources and staff to develop underlying processes, policies, and procedures
- Establishing a risk aware culture with strong campus buy-in – risk awareness / policies become embedded in all layers of the university rather than being viewed as an issue for Risk Management

3.3 ERM Benefits and Challenges

Benefits – Some of the many reasons for implementing an ERM structure are:

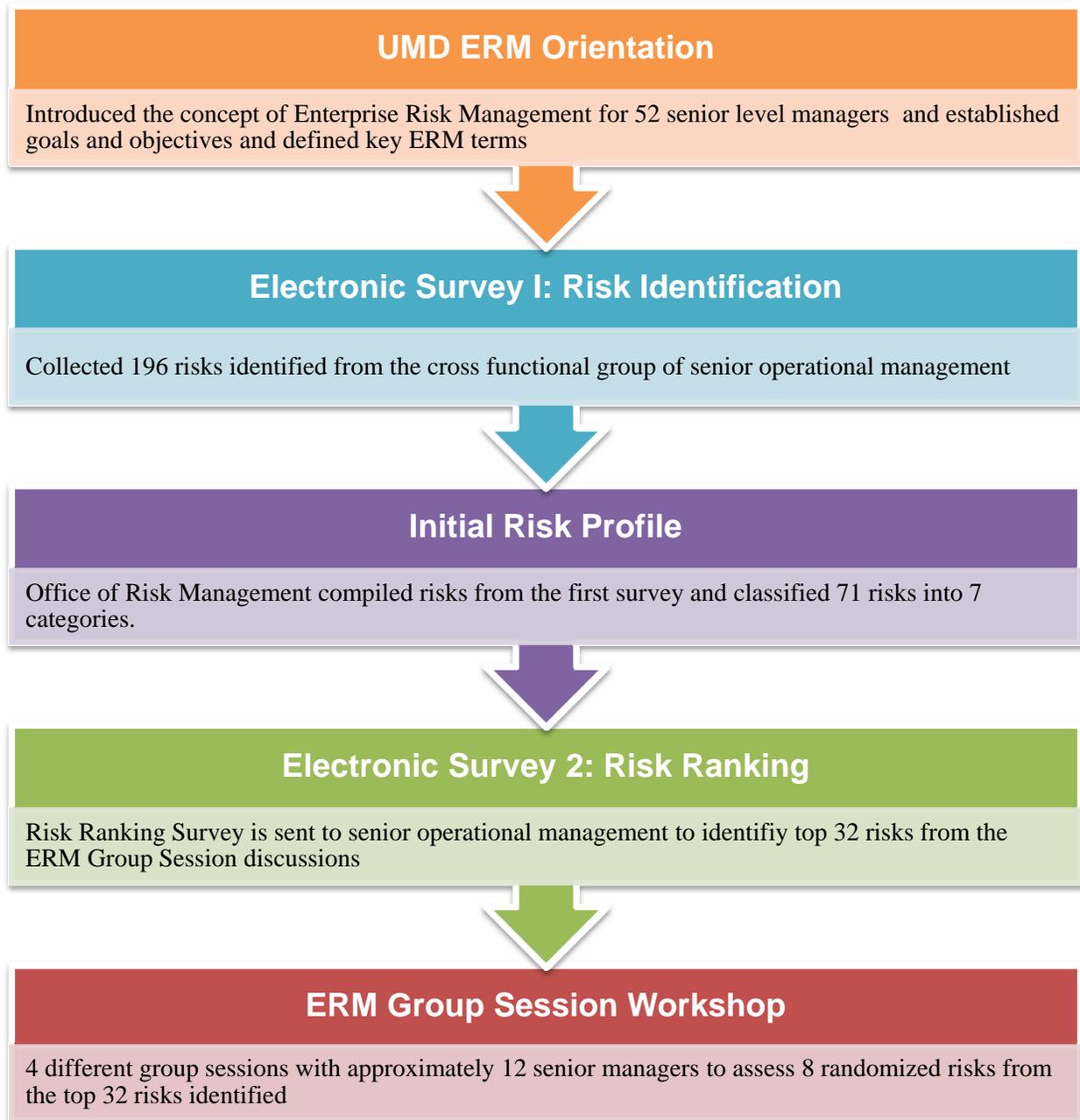
- To effectively manage risks and opportunities through better alignment of limited resources.
- To sustain competitive advantage over competition
- Improved communication about risk among senior leaders and Regents which lead to more informed decisions, better allocation of resources and stronger governance practices
- To improve strategic planning efforts
- To solidify the institution's integrity and reputation
- To avoid financial surprises
- To be able to respond effectively when a significant event occurs
- To respond effectively to the increasing number and diversity of risks

Challenges – Some of the challenges faced with an ERM structure are:

- Devising a straight forward way to explain ERM to people with widely different skills, experience and interest regardless of business function or experience with risk management
- Getting non-risk managers to move beyond their definition of managing risk as a safety program or an insurance/workers' compensation program into a broader understanding of risk management as a set of principles and tools that can be applied to reach program goals
- With limited resources and the current economic climate, old patterns of reactive crisis management for managing the crisis may resurface
- Establishing a common risk language or glossary
- Identifying and describing the risks in a risk inventory
- Implementing a risk-ranking methodology to prioritize risks within and across functions
- Establishing ownership for particular risks and responses
- Developing action plans to ensure the risks are appropriately managed
- Monitoring the results of actions taken to mitigate risk

4. PROCESS

The chart below represents the basic structure and process used by the University of Maryland to initiate the Enterprise Risk Management system. It can be also summarized into 3 major steps - risk identification, risk assessment, and risk recommendation. This section will have a detailed discussion on how our structure and process fit into the 3 steps and what are the methodologies used to build the university's risk profile.



4.1 ERM Orientation

The Office of Risk Management initiated this project with an ERM orientation session for the 52 senior level managers who had agreed to act as “ERM representatives” for their operational area (see Appendix 1 for list of representatives). The session was facilitated by Dr. Paul Walker, consultant and professor of Enterprise Risk Management at the University of Virginia. It included an overview and discussion about ERM concepts, terms, goals and objectives as well as the role attendees had within the University’s ERM initiative. Orientation topics included an overview of ERM and best practices; and critical components of the ERM process: risk identification, assessment, mitigation and monitoring.

4.2 Risk Identification

UMD’s initial Risk Identification effort involved an on-line survey sent to the ERM representatives. Each representative was to provide 3-5 significant risks that could affect the University’s ability to achieve its objectives. Participants were provided a copy of the executive summary of the University’s strategic plan and encouraged to identify risks that they believed could impact accomplishment of the strategic initiatives and objectives identified in that document. See “Appendix 3 Sample Risk Survey”.

The ERM Risk Identification Survey identified 196 risks generated by the cross-functional senior management representatives. Submitted risks that were the same or similar in nature were combined, and 71 risks were finalized as UM Risk Profile (see “Appendix 3 Risk Profile”). The Office of Risk Management established 7 categories in which to separate the identified risks. Those categories included (A) Academics & Higher Education, (O) Campus Operations, (F) Financial, (H) Human Resources, (C) Compliance and Integrity, (I) Information Technology, and (M) Macro. See “Appendix 2 Risk Model” for more information on these categories.

4.3 Risk Assessment

4.3.1 Risk Ranking

A second online survey to rank the risks was sent to each representative. Each was asked to choose and rank the top 3 risks in each of the 7 categories and then identify the most critical risk from all of the number 1 risks chosen from each category.

Risk scores were calculated as follows:

$$\text{Risk Score} = A \times 3 + B \times 2 + C \times 1$$

A = counts of the risks ranked as # 1 among the surveys submitted

B = counts of the risks ranked as #2 among the surveys submitted

C = counts of the risks ranked as # 3 among the surveys submitted

Based on the risks scores, the number of times each risk was listed as being one of the top 3 overall risks, and number of risks under each category a list of 32 risks were identified for further discussion and assessment during the Group Sessions as described below. See “Appendix 3 Sample Risk Surveys” for more information about how the survey was designed.

4.3.2 ERM Group Session – Risk Assessment

The Office of Risk Management held 4 separate ERM Group Session Workshops, using two different approaches for risk assessment – Impact / likelihood assessment and strategic risk evaluation. See “Appendix 4 ERM Group Session Workshop” for detailed information on the planning and organization of the group sessions.

Impact / Likelihood Assessment

The impact and likelihood risk assessment was a quantitative approach, Subgroup 1 from each group session assessed and scored each of the 8 assigned risks based on Financial Impact, Reputational Impact and Health & Safety Impact, and then on the Likelihood of occurrence. By combining the consensus perception regarding a risk’s likelihood of occurring and its impact, the risk was mapped relative to the other risks. Below are a description of each criteria and how the scores were calculated. The final risk score for each risk was averaged on each representative’s score. See “Appendix 4 ERM Group Session Workshop” for sample worksheets used during this session.

Risk prioritization criteria:

| Likelihood | | |
|---|-----------------------------|-----------|
| Likelihood - the possibility that a given event will occur. | | |
| Scale | Definition | Score (L) |
| Rare | Once every 25 years or more | 1-2 |
| Unlikely | Once every 6-25 years | 3-4 |
| Possible | Once every 2-5 years | 5-6 |
| Likely | Every year | 7-8 |
| Almost Certain | Multiple times each year | 9-10 |

$$\text{Likelihood Score} = \frac{L}{10} \times 100$$

The likelihood scores are expressed on a scale from 1 (low) to 100 (high).

Risk prioritization criteria:

| Risk Impact | | |
|---|---|-----------|
| Financial | | |
| Financial - includes physical and/or financial losses and damages to campus physical and environmental assets; events that affect profitability and efficiency, including loss of assets, and technology risks. | | |
| Scale | Definition | Score (F) |
| Catastrophic | > \$7M | 9-10 |
| Disastrous | > \$3M to \$7M | 7-8 |
| Serious | > \$500K to \$3M | 5-6 |
| Minor | > \$10K to \$500K | 3-4 |
| Insignificant | < \$10K | 1-2 |
| Health and Safety | | |
| Health and Safety - includes the possibility of injury, illness or death to the University community members, visitors or guests; events that affect the wellbeing of the community. | | |
| Scale | Definition | Score (I) |
| Catastrophic | Multiple serious injuries or death | 9-10 |
| Disastrous | Life-threatening injuries or illness | 7-8 |
| Serious | Non-life-threatening injuries | 5-6 |
| Minor | First aid only | 3-4 |
| Insignificant | No medical treatment required | 1-2 |
| Reputational | | |
| Reputational- includes events that affect the reputation and public perception of the University, including political issues and negative occurrences on campus. | | |
| Scale | Definition | Score (R) |
| Catastrophic | Significant negative external impact, long term | 9-10 |
| Disastrous | Negative external impact, long term | 7-8 |
| Serious | Negative external impact, short term | 5-6 |
| Minor | Negative internal impact, long term | 3-4 |
| Insignificant | Negative internal impact, short term | 1-2 |

$$\text{Impact Score} = \frac{(F + I + R)}{30} \times 100$$

The impact scores are expressed on a scale from 1 (low) to 100 (high).

Risk Assessment Results:

$$\text{Risk Score} = \frac{L}{10} \times \frac{(F + I + R)}{30} \times 100$$

The risk scores are also expressed on a scale from 1 (low) to 100 (high).

Strategic Risk Evaluation

The strategic risk evaluation was the second methodology used for assessing risks during the group sessions. It was designed to explicitly link risks to the strategic objectives of the University and is intended to provide a different perspective as compared to likelihood and impact risk assessment methodology. See “Appendix 5 ERM Group Session Workshop” for sample worksheets used during this session.

Subgroup 2 from each group session assessed the risks based on the potential effect each had on the achievement of the 4 Transformational Outcomes (A Magnet for Exceptional Students, An International Center, A Vibrant Surrounding Community, A Catalyst for Economic Development and A Healthier Society) of the UM Strategic Plan (See the attached Strategic Risk Evaluation Worksheet in the Appendices).

Representatives in Subgroup II were asked to pick and rank the top 3 risks for each of the transformational outcomes among the set of 8 risks they were assigned. The risk score was calculated as follows:

$$\text{Risk Score} = A \times 3 + B \times 2 + C \times 1$$

A = counts of the risks ranked as # 1 among the group

B = counts of the risks ranked as #2 among the group

C = counts of the risks ranked as # 3 among the group

The final score of the risks were averaged by the number of representatives presented in each group session.

4.4 Risk Descriptions

Once results were calculated, the combined groups collectively provided risk descriptions on the top 1 or 2 critical risks identified by the two Subgroups. The discussion included examples of risk events identified with the critical risk, the identification of the primary risk owner(s), identification of the current controls in place, recommendations of possible risk response strategies, and suggestions of how the risk(s) might be monitored in the future. See “Appendix 9 Preliminary Risk Description” for a list of preliminary risk description on the top risks as a basis for risk recommendations.

4.5 Limitations

The limitations in this process that may have impacted or influenced the determination or interpretation of the results of the exercise include:

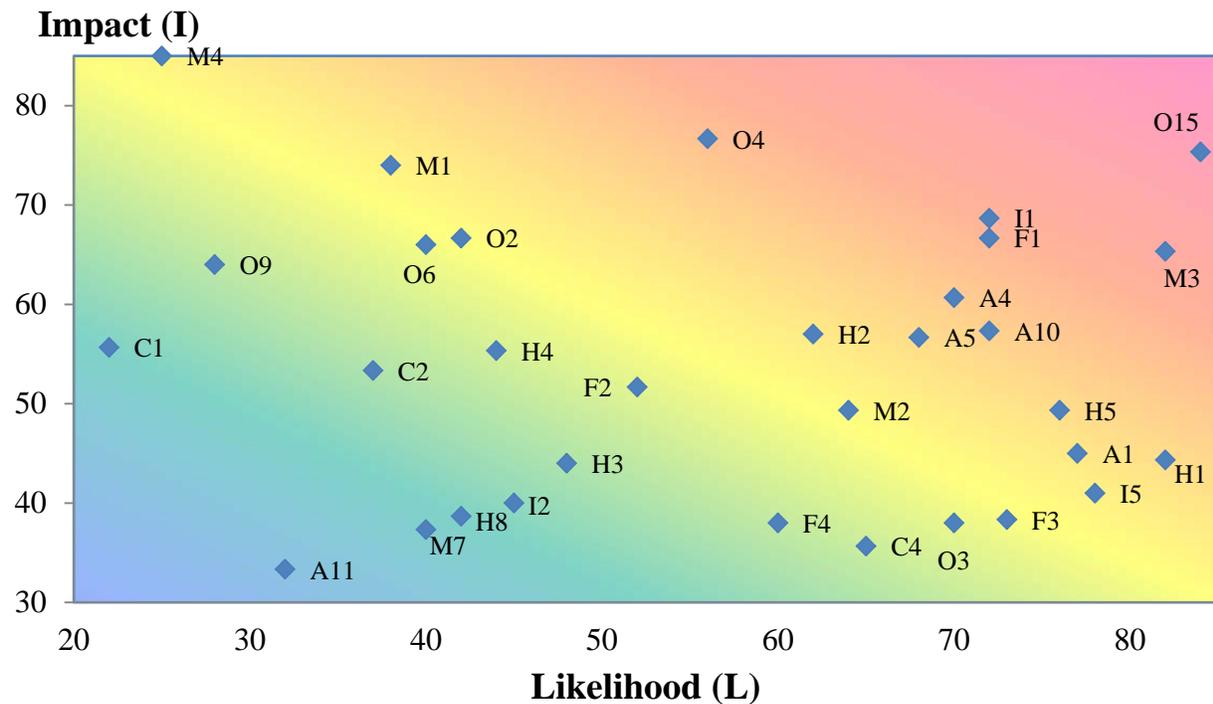
- The use of a diverse cross-section of campus representatives brought their individual perspectives to the process and risks presented. This is was an advantage in that each session had a wide range of knowledge and experience; however, for some risks the depth of knowledge was limited.
- Some of the evaluated risks may be positively correlated to each other; however, we evaluated each risk singularly, not in various combinations.
- Risk assessment was based solely on and from an operational-level perspective
- Limited knowledge of what may be considered the most current interpretation of the university's strategic objectives
- Lack of consistency for risk assessments in group sessions – different groups of representatives looked at unique sets of risks for each session. Though the process increased efficiency, it affected the consistency of the consolidated data. Each group's risks were only compared to the risks presented to that group and not all the risks combined.

5. RESULTS

The ERM Group Sessions conducted risk assessments through two different approaches as already mentioned on the “Process” section – impact / likelihood assessment, and strategic risk evaluation. While the impact / likelihood assessment is used as a primary risk assessment approach, the strategic risk evaluation provides a strategic perspective. This section covers the risk rankings resulted from the two assessments and also a comparison of the two rankings from each approach. Also “Appendix 8 Preliminary Risk Description” provided sample descriptions on top risks identified by the groups from the Group Sessions.

5.1 Risk Ranking – Impact / Likelihood Assessment

The ERM Group Sessions conducted a risk assessment based on the criteria of likelihood and impact. The heat map below displays the results of this criteria assessment. The map of identified risks allows an organization to begin the process of determining which risks merit efforts to mitigate and which risks can be retained at their present level of perceived likelihood and impact. For comparison, see “Appendix 7 Heat Map from PwC” for a generic heat map generated by PwC.



On the next page is a condensed version of the criteria assessment result. Each risk was provided a risk code, a brief risk theme description, a likelihood score (L), an impact score (I), and a total score. Ranking is by total score. Previous section discussed the assessment criteria, how the score was calculated, and how the 32 risks were scored in the Risk Ranking Survey. A complete

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list of the categorized risks with risk codes can be found in “Appendix 5 Risk Profile”. For comparison, see “Appendix 8 Risk Register from Education Advisory Board” for a list of institutional risks generated by Education Advisory Board.

Risk Ranking – Impact / Likelihood Assessment

| Rank | Code | Risk Theme | L | I | Score |
|------|------|---|----|----|-------|
| 1 | O15 | Facility Maintenance and Renewal | 84 | 75 | 63 |
| 2 | M3 | Criminal Activities | 82 | 65 | 54 |
| 3 | I1 | IT Security | 72 | 69 | 49 |
| 4 | F1 | State Budget Reduction | 72 | 67 | 48 |
| 5 | O4 | Emergency Management | 56 | 77 | 43 |
| 6 | A4 | Growing Student Population | 70 | 61 | 42 |
| 7 | A10 | Education Innovation | 72 | 57 | 41 |
| 8 | A5 | Campus Experience | 68 | 57 | 39 |
| 9 | H5 | Hyper-Bureaucratization | 76 | 49 | 37 |
| 10 | H1 | Stagnated Salaries and Pay Disparities | 82 | 44 | 36 |
| 11 | H2 | Recruitment and Retaining | 62 | 57 | 35 |
| 11 | A1 | Student Fees and Tuition | 77 | 45 | 35 |
| 13 | I5 | Technology Infrastructure and Unification of Applications | 78 | 41 | 32 |
| 13 | M2 | Weather Incident | 64 | 49 | 32 |
| 15 | M1 | Natural Disaster | 38 | 74 | 28 |
| 15 | O2 | Incidents in Key Academic Building | 42 | 67 | 28 |
| 15 | F3 | Resource Reallocation | 73 | 38 | 28 |
| 18 | F2 | Extramural Funding from Federal Agencies | 52 | 52 | 27 |
| 18 | O3 | Curriculum Setting / Program Offering | 70 | 38 | 27 |
| 20 | O6 | Laboratory Accident | 40 | 66 | 26 |
| 21 | H4 | Sexual Harassment, Discrimination and Retaliation | 44 | 55 | 24 |
| 22 | C4 | Academic Honesty and Integrity | 65 | 36 | 23 |
| 22 | F4 | Fraud | 60 | 38 | 23 |
| 24 | M4 | Mass Casualty Event | 25 | 85 | 21 |
| 24 | H3 | Succession Planning | 48 | 44 | 21 |
| 26 | C2 | CPSR failure (CPSR: a federal audit of our purchasing system) | 37 | 53 | 20 |
| 27 | I2 | Cyber-Attack | 45 | 40 | 18 |
| 27 | O9 | Minors on Campus | 28 | 64 | 18 |
| 29 | H8 | Culture of “Risk Aversion” | 42 | 39 | 16 |
| 30 | M7 | Loss of Power | 40 | 37 | 15 |
| 31 | C1 | Accreditation | 22 | 56 | 12 |
| 32 | A11 | Competition | 32 | 33 | 11 |

5.2 Risk Ranking - Strategic Risk Evaluation

The ERM Group Session also conducted a strategic risk evaluation. The list below is a condensed version of the result of linkage between the risks and the 4 transformational outcomes shown as O-1, O-2, O-3, and O-4 in the chart. (See Appendix 6 for a more detailed risk assessment result.) The codes represent the following:

- O-1: a magnet for exceptional students
- O-2: an international center
- O-3: a vibrant surrounding community
- O-4: a catalyst for economic development and a healthier society.

This approach is designed to link the top 32 risks back to the strategic objectives, and a different result should be expected if the process starts from generating list of risks for each transformational outcome.

Risk Ranking - Strategic Risk Evaluation

| Rank | Code | Risk Theme | O-1 | O-2 | O-3 | O-4 | Score |
|------|------|---|-----|-----|-----|-----|-------|
| 1 | H2 | Recruitment and Retention | 24 | 30 | 60 | 60 | 174 |
| 2 | H1 | Stagnated Salaries and Pay Disparities | 6 | 29 | 30 | 30 | 94 |
| 3 | F1 | State Budget Reduction | 27 | 17 | 22 | 28 | 93 |
| 4 | A5 | Campus Experience | 22 | 14 | 28 | 28 | 92 |
| 4 | O15 | Facility Maintenance and Renewal | 26 | 30 | 14 | 22 | 92 |
| 6 | F2 | Extramural Funding from Federal Agencies | 8 | 10 | 20 | 20 | 58 |
| 6 | M3 | Criminal Activities | 10 | 14 | 30 | 4 | 58 |
| 8 | H8 | Culture of “Risk Aversion” | 20 | 10 | 4 | 18 | 52 |
| 9 | I5 | Technology Infrastructure and Unification of Applications | 3 | 19 | 17 | 11 | 50 |
| 10 | A10 | Education Innovation | 15 | 23 | 0 | 5 | 43 |
| 11 | A1 | Student Fees and Tuition | 27 | 0 | 7 | 6 | 40 |
| 12 | A4 | Growing Student Population | 6 | 6 | 12 | 12 | 36 |
| 13 | I1 | IT Security | 13 | 7 | 2 | 8 | 30 |
| 14 | H3 | Succession Planning | 0 | 2 | 12 | 13 | 27 |
| 15 | F4 | Fraud | 0 | 0 | 23 | 0 | 23 |
| 16 | F3 | Resource Reallocation | 9 | 6 | 0 | 7 | 21 |
| 17 | O3 | Curriculum Setting / Program Offering | 7 | 6 | 0 | 6 | 19 |
| 18 | H5 | Hyper-Bureaucratization | 2 | 12 | 0 | 5 | 18 |
| 19 | O9 | Minors on Campus | 0 | 0 | 10 | 6 | 16 |
| 20 | C1 | Accreditation | 9 | 1 | 0 | 0 | 10 |
| 21 | H4 | Sexual Harassment, Discrimination and Retaliation | 0 | 0 | 0 | 6 | 6 |
| 21 | M1 | Natural Disaster | 0 | 0 | 6 | 0 | 6 |
| 23 | O4 | Emergency Management | 3 | 0 | 2 | 0 | 5 |
| 24 | O6 | Laboratory Accident | 4 | 0 | 0 | 0 | 4 |
| 25 | M7 | Loss of Power | 0 | 0 | 0 | 0 | 0 |

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| | | | | | | | |
|----|-----|---|---|---|---|---|---|
| 25 | M4 | Mass Casualty Event | 0 | 0 | 0 | 0 | 0 |
| 25 | C4 | Academic Honesty and Integrity | 0 | 0 | 0 | 0 | 0 |
| 25 | A11 | Competition | 0 | 0 | 0 | 0 | 0 |
| 25 | I2 | Cyber-Attack | 0 | 0 | 0 | 0 | 0 |
| 25 | O2 | Incidents in Key Academic Building | 0 | 0 | 0 | 0 | 0 |
| 25 | M2 | Weather Incident | 0 | 0 | 0 | 0 | 0 |
| 25 | C2 | CPSR failure (CPSR: a federal audit of our purchasing system) | 0 | 0 | 0 | 0 | 0 |

5.3 Risk Ranking Comparison

A comparison of the risk assessment result is listed below, and “Rank A” refers to the impact / likelihood assessment, while “Rank B” refers to the strategic risk evaluation. See “Appendix 6 Risk Ranking Comparison” for ranking comparisons with both the risk theme and its specific risks listed.

Risk Ranking Comparison

| Code | Risk Theme | Rank A | Rank B |
|-------------|---|---------------|---------------|
| O15 | Facility Maintenance and Renewal | 1 | 4 |
| M3 | Criminal Activities | 2 | 6 |
| I1 | IT Security | 3 | 13 |
| F1 | State Budget Reduction | 4 | 3 |
| O4 | Emergency Management | 5 | 23 |
| A4 | Growing Student Population | 6 | 12 |
| A10 | Education Innovation | 7 | 10 |
| A5 | Campus Experience | 8 | 4 |
| H5 | Hyper-Bureaucratization | 9 | 18 |
| H1 | Stagnated Salaries and Pay Disparities | 10 | 2 |
| H2 | Recruitment and Retention | 11 | 1 |
| A1 | Student Fees and Tuition | 11 | 11 |
| I5 | Technology Infrastructure and Unification of Applications | 13 | 9 |
| M2 | Weather Incident | 13 | 25 |
| M1 | Natural Disaster | 15 | 21 |
| O2 | Incidents in Key Academic Building | 15 | 25 |
| F3 | Resource Reallocation | 15 | 16 |
| F2 | Extramural Funding from Federal Agencies | 18 | 6 |
| O3 | Curriculum Setting / Program Offering | 18 | 17 |
| O6 | Laboratory Accident | 20 | 24 |
| H4 | Sexual Harassment, Discrimination and Retaliation | 21 | 21 |
| C4 | Academic Honesty and Integrity | 22 | 25 |
| F4 | Fraud | 22 | 15 |
| M4 | Mass Casualty Event | 24 | 25 |
| H3 | Succession Planning | 24 | 14 |
| C2 | CPSR failure (CPSR: a federal audit of our purchasing system) | 26 | 25 |
| I2 | Cyber-Attack | 27 | 25 |
| O9 | Minors on Campus | 27 | 19 |
| H8 | Culture of “Risk Aversion” | 29 | 8 |
| M7 | Loss of Power | 30 | 25 |
| C1 | Accreditation | 31 | 20 |
| A11 | Competition | 32 | 25 |

6. RECOMMENDATIONS

6.1 Recommended Next Steps

The University has taken an initial step in the development of an ERM system. Based on this effort, we recommend that the process of developing and implementing an ERM system continue using the recommendations below as a starting point. A prerequisite for a successful ERM program is visible support and engagement by senior administrators. Improvements in risk identification and mitigation at the operational level are valuable in their own right but ERM focuses on strategic level decision making and resource allocation by senior leadership.

1. **Conduct a risk identification and prioritization exercise for senior leadership.** This is intended to familiarize everyone with the concept of ERM and build upon work already completed to further develop the University’s risk profile. There are a number of options with regards to the structure and focus of the exercise. Broadly speaking, options include a (1) overall risk identification and prioritization exercise based on likelihood and impact, (2) focus on risks specific to one or more strategic initiatives or objectives, (3) brainstorming exercise with emphasis on “black swan” events, or (4) some combination of these. Regardless of the exact structure it should be seen as an opportunity to build understanding and consensus regarding UMD’s risk appetite and risk tolerance.
2. **Establish an institutional risk philosophy** emphasizing that the University accepts that successful risk taking is necessary for achieving its objectives and that the University seeks to be risk-aware but not risk-averse. This philosophy should reflect that ERM is a tool for improved decision making and resource allocation not a separate, one-time administrative process.
3. **Establish roles and responsibilities** for risk management. The responsibility for identifying and mitigating risks falls primarily on operational managers and it is important that ERM is understood to be an enhancement to what we already do rather than a new process. That being said there are new roles that would need to be filled in order to implement ERM.
 - Risk Officer: This person is responsible for coordinating and managing the ERM process and providing support and guidance on risk identification and mitigation efforts. This person would be expected to be the “cheerleader” for ERM and work to develop and improve the effectiveness of the program over time. Note that some institutions identify a senior administrator as the “Senior Risk Officer” with a University Risk Manager or related position focusing on day-to-day risk management operations.

- Risk Oversight Group: This could be a new committee for risk oversight or it can be an existing multidisciplinary group, such as the Administrative Council, that can serve in an oversight capacity. This group would be expected to provide guidance to the Risk Officer, be engaged in the risk prioritization process, and identify “critical risks” (see recommendation #4 - Ongoing Monitoring).
4. **Initiate process of ongoing monitoring of critical risks.** For Critical Risks, as identified by Risk Oversight Group or senior leadership, identify risk owner(s) and assign responsibility for risk assessment, mitigation and monitoring. This would be an ongoing process involving annual or periodic reporting on critical risks so that over time there would be clear “ownership” and risk mitigation strategies for all top risks.
 5. **Incorporate principles of ERM into the development of new strategic initiatives –** Establish expectation that the risk management process be incorporated in the development of significant new initiatives. This means asking the questions “what needs to go right in order to achieve this objective?” and what could go wrong that would prevent us from achieving the stated objective?” Those risks identified would be assessed and then mitigated and monitored as needed to ensure objectives are met.

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APPENDICES

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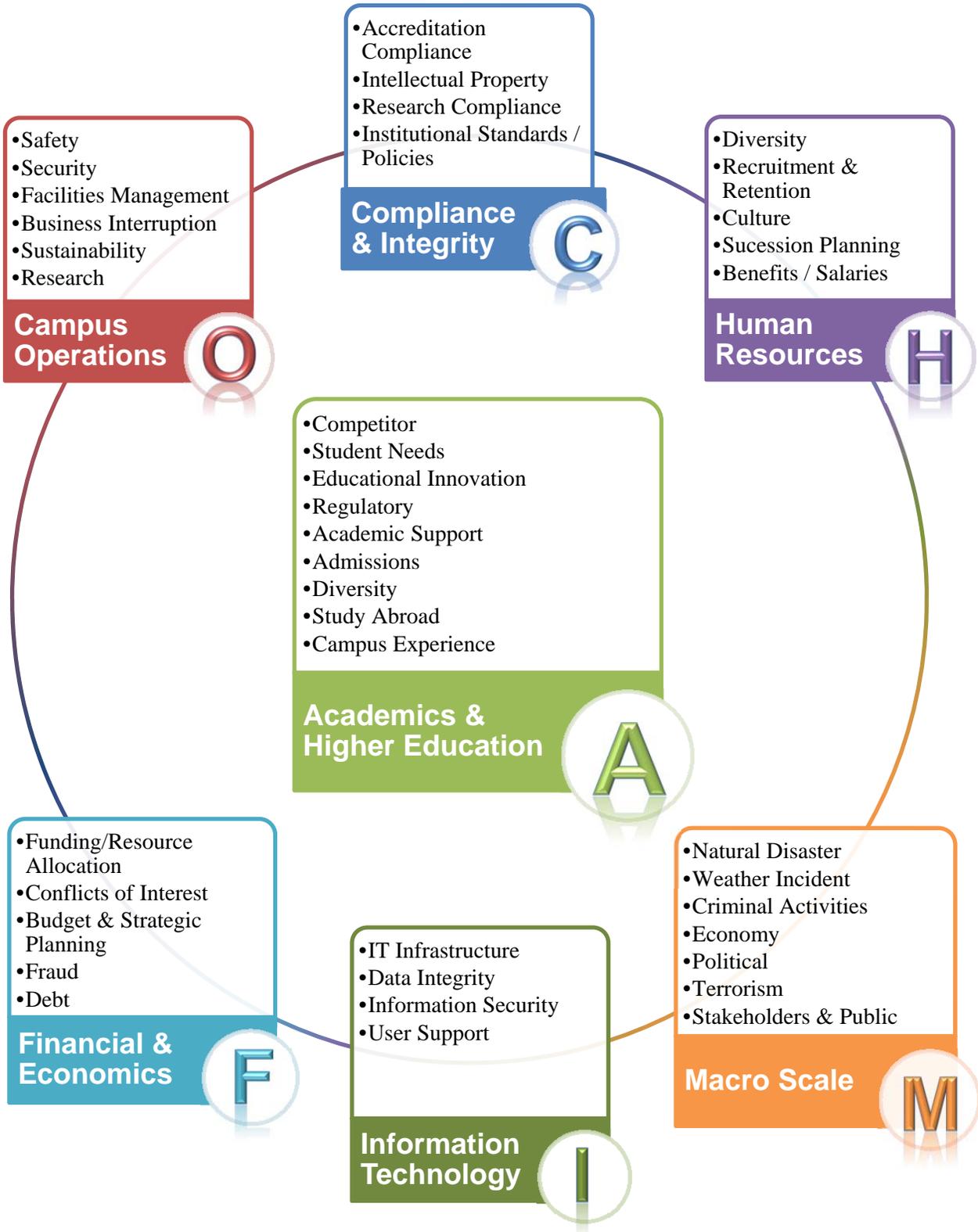
Appendix 1 ERM Representatives

| | |
|-----------------------|----------------------------------|
| Kurt Klier | Campus Recreation Services |
| Wallace Eddy | Campus Recreation Services |
| Patrick Perfetto | Conference & Visitor Services |
| Gerry Sneeringer | Division of Information Tech. |
| Laura Anderson Wright | Legal Affairs Office |
| Denise Clark | Office of VP Research |
| Joseph M. Smith | Office of VP Research |
| Mary Hummel | Student Affairs |
| Mike King | University Relations |
| John Farley | Administration & Finance |
| Carol Baumann | Business Services |
| Susan Nash | Business Services |
| Alan Sactor | Department of Environment Safety |
| Janet S. Peterson | Department of Environment Safety |
| Jeysha Rhodes | Department of Environment Safety |
| Mary Dorman | Department of Environment Safety |
| Phyllis Dailey | Department of Environment Safety |
| Susan Gilson | Department of Environment Safety |
| Bill Olen | Facilities Management |
| Brenda Testa | Facilities Management |
| Carlo Colella | Facilities Management |
| Harry Teabout III | Facilities Management |
| Jack Baker | Facilities Management |
| John Vucci | Facilities Management |
| Ken Riebert | Facilities Management |
| Kristen Kostecky | Facilities Management |
| Laura Wildesen | Facilities Management |
| Jim Stirling | Procurement & Supply |
| David Bruce Mitchell | Public Safety |
| Howard Blake | Public Safety |
| Carolyn Trimble | UHR |
| Catherine Donohoe | Education Abroad |
| Patty Woodwell | Graduate School |
| David Rivard | Libraries |
| Susan-Ellis Dougherty | Office of International Services |
| Barbara Gill | Office of Undergrad Admissions |
| Bev Rodgerson | Office of the Provost |

Appendices

| | |
|--------------------------|---|
| Elizabeth Beise | Office of the Provost |
| Juan Uriagereka | Office of the Provost |
| Mona Levine | Office of the Provost |
| Carol Corneilse | Office of the Provost - Diversity |
| Doug Roberts | Undergraduate Studies |
| Dan Ramia | College of Agriculture & Natural Resources |
| Julie Wright | College of Arts & Humanities |
| Ann Holmes | College of Behavioral and Social Sciences |
| Carolyn Schupbach | College of Behavioral and Social Sciences |
| Dean Kitchen | College of Computer, Mathematical, and Natural Sciences |
| Kathleen Angeletti | College of Education |
| Kathleen Fominaya | College of Information Studies |
| Emily Hartz | College of Journalism |
| Ingrid Farrell | School of Architecture |
| Janet H. Robertson | School of Engineering |
| Maureen Meyer | School of Engineering |
| Marcio Alves De Oliveira | School of Public Health |
| William Powers | School of Public Policy |
| Karen Mitchell | Shady Grove |
| Lee Comstock | Smith School of Business |

Appendix 2 Risk Model



Appendix 3 Sample Risk Survey

Survey 1: Risk Identification Survey

Listed below is a graphic of the Risk Identification Survey used. The survey was created via “Survey Monkey”. Survey representatives were asked to identify 3-5 risks. Survey responses for each risk were to include:

- List 3-5 major risks that you believe could prevent the university from achieving its strategic objectives.
- Explain or give some examples of each risk identified.
- Score the impact for each risk identified, and explain why that risk impact score was given.
- Score the likelihood for the risk identified, and explain why that likelihood score was given.
- Comments/Questions

Page 1

Page 2

Risk Identification Survey

8%



18 56

Welcome to the Risk Identification Survey. You're required to identify 5-7 major risks that you believe could keep our university from achieving its mission; its research, teaching and strategic initiatives. Additionally, please explain each of the risks and your assessment.

Thank you very much for your time!

Risk Identification Survey

25%

| SURVEY ANSWER EXAMPLE: | | | | | |
|---|---|------------|---|--------|--|
| Risk | Description/Example | Likelihood | Likelihood Explanation | Impact | Impact Explanation |
| High profile scandal involving the University | Delayed resorting of criminal activity /abuse by faculty member | 3 | Possible that the criminal activity /abuse was reported to someone or many but no one did anything about it right away. | 1 | Following recent news stories scandals in the news, no tolerance for lapse in judgement. Expect the Press to have a field day. |

RISK 1

* 2. Please list one major risk that you think could keep our university from achieving its mission; its research, teaching and strategic initiatives.

* 3. Please explain or give some examples of the risk you identified.

* 4. Please score the impact for the risk you identified, and explain why you gave this risk impact score.

Insignificant Minor Serious Disastrous Catastrophic

Risk Impact

Please explain

* 5. Please score the likelihood for the risk you identified, and explain why you gave this likelihood score.

Rare Unlikely Possible Likely Almost Certain

Risk Likelihood

Please explain

6. Comments/Questions

Survey 2: Risk Ranking Survey

Listed below is a graphic of the Risk Ranking Survey. This survey was created through Excel. Survey representatives had to rank the top 3 risks from 7 different categories and then rank the top 3 risks from the number 1 risk identified in each of the 7 categories..

Page 1



Welcome to the University's Risk Ranking Survey!

Before getting started you must save this document to your computer. After you click on "Get Started", the survey will ask you to pick the top three risks in each of the seven categories listed to the right. From the seven risks identified as "#1" in their category, you will be asked to pick the top three overall risks. When you complete the survey, remember to save your document and then email it back to Anna Wang (wanga@umd.edu).

| Risk Category |
|------------------------------|
| Academics & Higher Education |
| Campus Operations |
| Financial & Economic |
| Human Resources |
| Information Technology |
| Compliance & Integrity |
| Macro Scale |

Get Started!

Page 2

Academics & Higher Education

Please pick top three risks from the risk list below that you believe keep our university from achieving its mission; its research, teaching and strategic initiatives, and rank them from 1 to 3 (1 as most important), with both the impact and likelihood of the risks considered.

Note: you only need to pick from the drop list of column "Code", and the "Risk" column will be automatically filled.

| Rank | Code | Risk |
|------|------|-----------------|
| 1 | Fill | No need to fill |
| 2 | Fill | No need to fill |
| 3 | Fill | No need to fill |

| Code | Risk |
|------|--|
| A1 | Inability to maintain affordability due to increasing student fees and tuition |
| A2 | Inability to enroll a diverse student body |
| A3 | Inappropriate influence or intrusion into admission outcomes |
| A4 | Lack of faculty, staff and infrastructure to support growing student population |
| A5 | Inability to recruit or retain faculty, staff or students due to dissatisfaction with campus experience and/or surrounding community |
| A6 | Safety of faculty and students working and volunteering off-campus |
| A7 | Safety of faculty and students working, studying, and volunteering overseas |
| A8 | Inability to maintain desired levels of teaching quality |
| A9 | Inability to retain/graduate students due to inadequate academic/advising support |
| A10 | University failing to move quickly enough to expand beyond traditional, site-based delivery of instruction to more flexible, learner-selected options (e.g. online) |
| A11 | Competition - Universities around the world will "catch up" with American universities students who choose to study outside the U.S. |
| A12 | Political environment will increasingly insist that education be focused on "practical" skills at the expense of a traditional liberal arts curriculum |
| A13 | Extensive national regulation of undergraduate education making it harder for UMD to distinguish itself as a "flagship" campus |
| A14 | Campus expectations associated with the new general education programs create hardships for the professional schools. Insufficient seat sections to meet the campus demand for the new general education curriculum. |
| A15 | Hazing or other inappropriate group behavior leading to fatality or serious injury |
| A16 | Inability to ensure online/overseas education programs meet institutional academic standards |

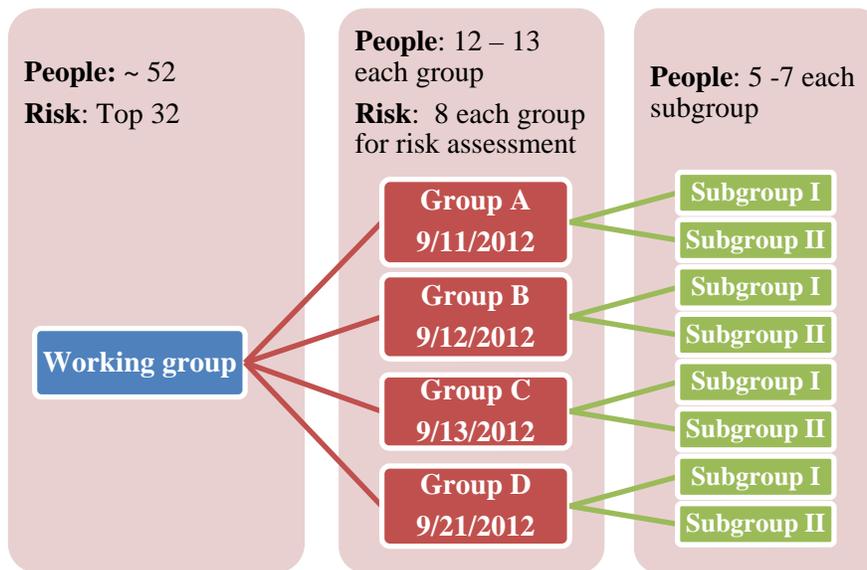
Appendix 4 ERM Group Session Workshop

Group Session Organization

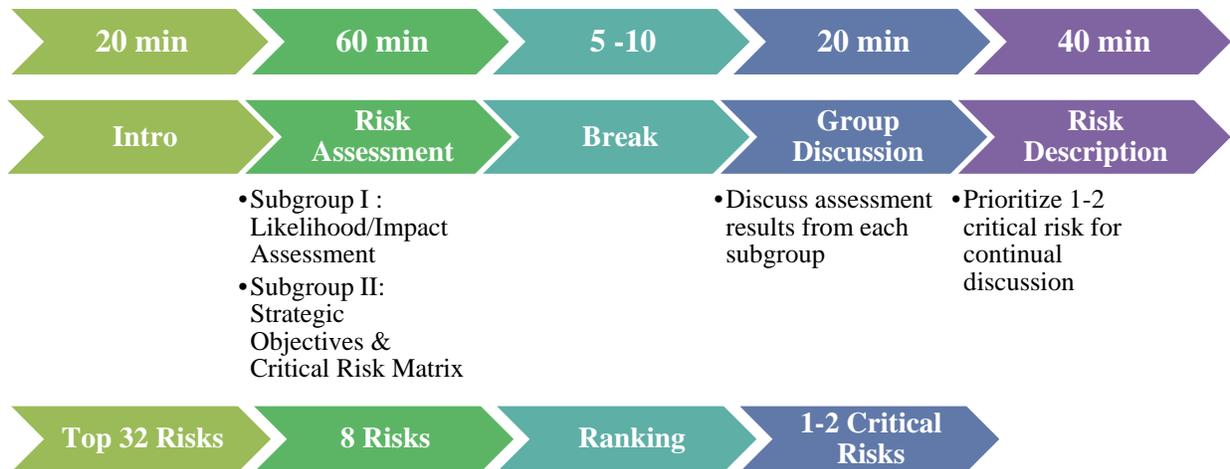
Four (4) work group sessions were held on different dates. Each group gathered 12-13 people from the original 52 senior managers, and was randomly assigned 8 risks from the top 32 risks identified in the Risk Ranking Survey. The assignment was to rank the 8 risks.

The group of 12-13 was split into two subgroups of 5-7 participants in each group. Subgroup I used impact / likelihood criteria to assess and score risks, while Subgroup II scored each risk against the Strategic Plan Outcomes.

Following separate discussion, each Subgroup was brought together to discuss the results of their deliberations, identify the top 1-2 risks and collectively in open discussion, provide a risk description.



Group Session Timeline/Process



Worksheet Sample 1 – Risk Criteria Assessment

There were 4 worksheets for Risk Criteria Assessment. The “Financial” risk criteria worksheet is displayed below. The other risk criteria worksheets that were used included “Health and Safety”, “Reputation”, and “Likelihood and Impact”.

Financial

Financial - includes physical and/or financial losses and damages to campus physical and environmental assets; events that affect profitability and efficiency, including loss of assets, and technology risks.

| Scale | Catastrophic | Disastrous | Serious | Minor | Insignificant |
|------------|--------------|----------------|------------------|-------------------|---------------|
| Definition | > \$7M | > \$3M to \$7M | > \$500K to \$3M | > \$10K to \$500K | < \$10K |
| Score | 9-10 | 7-8 | 5-6 | 3-4 | 1-2 |

Score the potential financial impact of each event from 1 to 10 based on the scale above:

| Code | Risk | Score |
|------|---|-------|
| A4 | Lack of faculty, staff and infrastructure to support growing student population | |
| A5 | Inability to recruit or retain faculty, staff or students due to dissatisfaction with campus experience and/or surrounding community | |
| M4 | Mass casualty event from an active shooter or terrorist attack | |
| H2 | Inability to Recruit and Retain Top Faculty, Staff and Senior Administrators | |
| C2 | CPSR failure – The CPSR is a federal audit of our purchasing system. Receipt of federal grants and contracts would be jeopardized if we were to fail. | |
| I2 | Cyber-attack resulting in data loss or equipment malfunction. | |
| F2 | Extramural funding from federal agencies - flat or declining federal research funding coupled with increased competition for grants | |
| O2 | Explosion, fire or other large scale occurrence in key academic building. | |

Worksheet Sample 2 – Strategic Risk Evaluation

There were 4 worksheets used for Strategic Risk Evaluation. The “Transformational Outcome 2 : an International Center” Risk Evaluation worksheet is displayed below. The other risk evaluation worksheets that were used included “Transformational Outcome 1: A Magnet for Exceptional Students”, “Transformational Outcome 3: A Vibrant Surrounding Community”, and “Transformational Outcome 4: A Catalyst for Economic Development and a Healthier Society”.

| Strategic Risk Evaluation Worksheet | | | | | | | |
|---|---|----|----|----|----|----|----|
| Transformational Outcome 2 | | | | | | | |
| An International Center: Maryland will be an international center, the state’s window to the world and a catalyst for educational, research, and scholarly partnerships around the globe. Washington, D.C., is a world city. Within its orbit, the University of Maryland will be a world as well as a world-class university. We will attract the most brilliant minds from all corners, send our students abroad for exceptional learning experiences, and expand our connections and partnerships with public and private organizations in more than 75 countries and on all seven continents. Our faculty will extend the boundaries of knowledge and understanding in a wide range of fields. They will address issues of critical importance and worldwide impact. | | | | | | | |
| Risk List | | | | | | | |
| A4 | Lack of faculty, staff and infrastructure to support growing student population | | | | | | |
| A5 | Inability to recruit or retain faculty, staff or students due to dissatisfaction with campus experience and/or surrounding community | | | | | | |
| M4 | Mass casualty event from an active shooter or terrorist attack | | | | | | |
| H2 | Inability to Recruit and Retain Top Faculty, Staff and Senior Administrators | | | | | | |
| C2 | CPSR failure – The CPSR is a federal audit of our purchasing system. Receipt of federal grants and contracts would be jeopardized if we were to fail. | | | | | | |
| I2 | Cyber-attack resulting in data loss or equipment malfunction. | | | | | | |
| F2 | Extramural funding from federal agencies - flat or declining federal research funding coupled with increased competition for grants | | | | | | |
| O2 | Explosion, fire or other large scale occurrence in key academic building. | | | | | | |
| Step 1: Please pick 4 most critical risks affecting the achievement of this strategic outcome. | | | | | | | |
| A4 | A5 | M4 | H2 | C2 | I2 | F2 | O2 |
| | | | | | | | |
| Step 2: After discussion, please decide again the 3 most critical risks affecting the achievement of this strategic outcome, and rank them (1 as most critical). | | | | | | | |
| Rank | 1 | 2 | 3 | | | | |
| Risk Code | | | | | | | |

Appendix 5 Risk Profile

Campus Operations

| | |
|------------|---|
| O1 | Residence hall fire resulting in student death(s) |
| O2 | Explosion, fire or other large scale occurrence in key academic building. |
| O3 | The University's existing administrative systems impede the campus' ability to offer flexible, innovative curricular/programmatic options in a timely fashion. Programmatic offerings that fall beyond the realms of traditional formats are difficult to implement for logistical reasons. |
| O4 | Failure to implement and test adequate emergency preparedness measures and post-event contingency plans |
| O5 | Failure of the University to provide adequate security in classrooms for students/faculty by not providing door locks for each classroom. |
| O6 | Laboratory accident that results in serious injury or fatality (explosion, fire, chemical/bio/radiation exposure, etc.) |
| O7 | Regulatory infractions significant enough for UMCP to lose (or have suspended) its license for the use of radioactive materials, irradiator operation, research reactor. |
| O8 | Occupational fatality (electrocution, fall from height or other work-related incident) |
| O9 | Personal or physical injury to minors on campus resulting from inadequate controls (background checks, clear policies and procedures, etc.) |
| O10 | Failure to adequately invest in utility systems to keep pace with growth of University and limited life span of existing equipment. |
| O11 | Not allowing controversial speakers and/or protest rallies resulting in the University being perceived as suppressing free speech or ideas. |
| O12 | Inability to adequately protect student- athlete health and safety (e.g., heat stroke, concussions, etc.) |
| O13 | Excessive force by campus police that may result in severe injury and/or death |
| O14 | Inability to meet presidential sustainability targets |
| O15 | Inadequate funding to keep pace with facility maintenance renewal leading to increased failure of building systems and poor visual appearance and functionality. |

Academics & Higher Education

- A1 Inability to maintain affordability due to increasing student fees and tuition
- A2 Inability to enroll a diverse student body
- A3 Inappropriate influence or intrusion into admission outcomes
- A4 Lack of faculty, staff and infrastructure to support growing student population
- A5 Inability to recruit or retain faculty, staff or students due to dissatisfaction with campus experience and/or surrounding community
- A6 Safety of faculty and students working and volunteering off-campus
- A7 Safety of faculty and students working, studying, and volunteering overseas
- A8 Inability to maintain desired levels of teaching quality
- A9 Inability to retain/graduate students due to inadequate academic/advising support
- A10 University failing to move quickly enough to expand beyond traditional, site-based delivery of instruction to more flexible, learner-selected options (e.g. online)
- A11 Competition - Universities around the world will “catch up” with American universities students who choose to study outside the U.S.
- A12 Political environment will increasingly insist that education be focused on “practical” skills at the expense of a traditional liberal arts curriculum
- A13 Extensive national regulation of undergraduate education making it harder for UMD to distinguish itself as a “flagship” campus
- A14 Campus expectations associated with the new general education programs create hardships for the professional schools. Insufficient seat sections to meet the campus demand for the new general education curriculum.
- A15 Hazing or other inappropriate group behavior leading to fatality or serious injury
- A16 Inability to ensure online/overseas education programs meet institutional academic standards

Compliance & Integrity

- C1 Loss of accreditation or membership in prestigious academic associations (e.g., Middle States Commission of Higher Education, American Association of Universities)
 - C2 CPSR failure – The CPSR is a federal audit of our purchasing system. Receipt of federal grants and contracts would be jeopardized if we were to fail.
 - C3 Misuse of donor’s funds
 - C4 Violation of academic honesty and integrity polices
 - C5 Non-compliance with U.S. Immigration regulation
 - C6 University records not retained in accordance with record retention policy
-

Financial & Economics

| | |
|-----------|---|
| F1 | State Budget reduction - significant cut in state's contribution to budget due to state budget shortfalls and/or change of state leadership |
| F2 | Extramural funding from federal agencies - flat or declining federal research funding coupled with increased competition for grants |
| F3 | Inability to adequately fund or reallocate resources to core or “high- priority” academic programs |
| F4 | Fraud- deliberate misuse or misapplication of university’s resources or assets |
| F5 | Inability to detect or prevent conflicts of interest in financial transactions, agreements, or gifts to senior administrators |
| F6 | Inability to ensure accuracy or completeness of external financial reporting |
| F7 | Failure to control growth in debt burden |

Human Resources

| | |
|-----------|---|
| H1 | Stagnated salaries and pay disparity with new hires leading to poor morale and retention problems |
| H2 | Inability to Recruit and Retain Top Faculty, Staff and Senior Administrators |
| H3 | Failure in succession planning- This deficit in institution memory coupled with a lack of documented procedures and records, creates inefficiencies and loss of institutional momentum. |
| H4 | Climate of sexual harassment, discrimination and retaliation in the workplace |
| H5 | Hyper-bureaucratization – too many hoops to jump through to search for and hire faculty and staff. UM loses good candidates because of time. |
| H6 | Failure to prevent significant lawsuits and claims relating to professional liability, discrimination, or equal opportunity non-compliance |
| H7 | Lack of adherence to Admissions policy/philosophy especially as it relates to the use of race in Admissions |
| H8 | Culture of “risk aversion” that prevents the university from taking on bold initiatives and tackling tough internal challenges. |
| H9 | Failure of the University to perform adequate criminal background checks on applicants and current employees. |

Information Technology

- I1** IT security breaches leading to disclosure of confidential information
- I2** Cyber-attack resulting in data loss or equipment malfunction.
- I3** Inability to offer cutting edge and robust technology service in a way that enables and facilitates scholarly activity and creativity
- I4** Inability to maintain or replace obsolete systems/technology in timely manner
- I5** Inadequate investment in technology infrastructure and unification of applications
- I6** Inability to prevent unauthorized modification of data
- I7** Inability to deliver satisfactory user support

Macro Scale

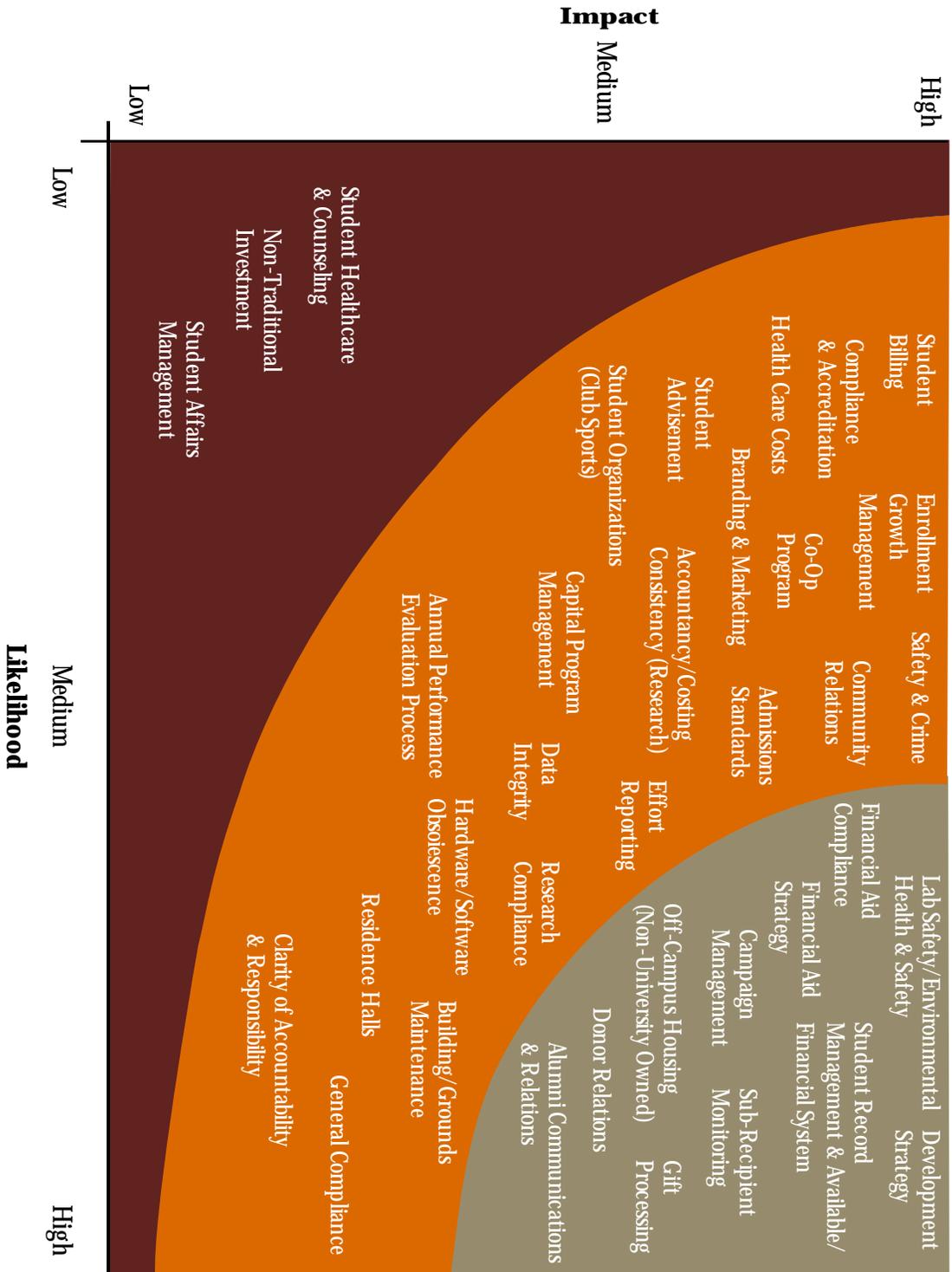
- M1** Natural Disaster (e.g., hurricane, tornado, earthquake, etc.)
- M2** Weather Incident – snow, ice storm, flooding, etc. that would close the university for an extended period of time
- M3** Criminal Activities – violent crime on or near to campus
- M4** Mass casualty event from an active shooter or terrorist attack
- M5** Political unrest in other countries affecting our faculty, students, research and scholarship
- M6** Disease outbreak – norovirus outbreak on campus
- M7** Loss of Power for an extended period of time
- M8** Global pandemic – widespread infection on and beyond the campus
- M9** Accidental environmental release of an infectious agent
- M10** Terrorist assault on nuclear reactor or high security containment laboratory
- M11** Not communicating our mission to the State and the general public

Appendix 6 Risk Ranking Comparison

| Code | Risk Theme | Risk | Rank A | Rank B |
|------|---|---|--------|--------|
| O15 | Facility Maintenance and Renewal | Inadequate funding to keep pace with facility maintenance renewal leading to increased failure of building systems and poor visual appearance and functionality. | 1 | 4 |
| M3 | Criminal Activities | Criminal Activities – violent crime on or near to campus | 2 | 6 |
| I1 | IT Security | IT security breaches leading to disclosure of confidential information | 3 | 13 |
| F1 | State Budget Reduction | State Budget reduction - significant cut in state's contribution to budget due to state budget shortfalls and/or change of state leadership | 4 | 3 |
| O4 | Emergency Management | Failure to implement and test adequate emergency preparedness measures and post-event contingency plans | 5 | 23 |
| A4 | Growing Student Population | Lack of faculty, staff and infrastructure to support growing student population | 6 | 12 |
| A10 | Education Innovation | University failing to move quickly enough to expand beyond traditional, site-based delivery of instruction to more flexible, learner-selected options (e.g. online) | 7 | 10 |
| A5 | Campus Experience | Inability to recruit or retain faculty, staff or students due to dissatisfaction with campus experience and/or surrounding community | 8 | 4 |
| H5 | Hyper-Bureaucratization | Hyper-bureaucratization – too many hoops to jump through to search for and hire faculty and staff. UM loses good candidates because of time. | 9 | 18 |
| H1 | Stagnated Salaries and Pay Disparities | Stagnated salaries and pay disparity with new hires leading to poor morale and retention problems | 10 | 2 |
| H2 | Recruitment and Retaining | Inability to Recruit and Retain Top Faculty, Staff and Senior Administrators | 11 | 1 |
| A1 | Student Fees and Tuition | Inability to maintain affordability due to increasing student fees and tuition | 11 | 11 |
| I5 | Technology Infrastructure and Unification of Applications | Inadequate investment in technology infrastructure and unification of applications | 13 | 9 |
| M2 | Weather Incident | Weather Incident – snow, ice storm, flooding, etc. that would close the university for an extended period of time | 13 | 25 |
| M1 | Natural Disaster | Natural Disaster (e.g., hurricane, tornado, earthquake, etc.) | 15 | 21 |
| O2 | Incidents in Key Academic Building | Explosion, fire or other large scale occurrence in key academic building. | 15 | 25 |
| F3 | Resource Reallocation | Inability to adequately fund or reallocate resources to core or “high- priority” academic programs | 15 | 16 |
| F2 | Extramural Funding from Federal Agencies | Extramural funding from federal agencies - flat or declining federal research funding coupled with increased competition for grants | 18 | 6 |

| Code | Risk Theme | Risk | Rank A | Rank B |
|------|---|---|--------|--------|
| O3 | Curriculum Setting / Program Offering | The University's existing administrative systems impede the campus' ability to offer flexible, innovative curricular/programmatic options in a timely fashion. Programmatic offerings that fall beyond the realms of traditional formats are difficult to implement for logistical reasons. | 18 | 17 |
| O6 | Laboratory Accident | Laboratory accident that results in serious injury or fatality (explosion, fire, chemical/bio/radiation exposure, etc.) | 20 | 24 |
| H4 | Sexual Harassment, Discrimination and Retaliation | Climate of sexual harassment, discrimination and retaliation in the workplace | 21 | 21 |
| C4 | Academic Honesty and Integrity | Violation of academic honesty and integrity policies | 22 | 25 |
| F4 | Fraud | Fraud- deliberate misuse or misapplication of university's resources or assets | 22 | 15 |
| M4 | Mass Casualty Event | Mass casualty event from an active shooter or terrorist attack | 24 | 25 |
| H3 | Succession Planning | Failure in succession planning- This deficit in institution memory coupled with a lack of documented procedures and records, creates inefficiencies and loss of institutional momentum. | 24 | 14 |
| C2 | CPSR failure | CPSR failure – The CPSR is a federal audit of our purchasing system. Receipt of federal grants and contracts would be jeopardized if we were to fail. | 26 | 25 |
| I2 | Cyber-Attack | Cyber-attack resulting in data loss or equipment malfunction. | 27 | 25 |
| O9 | Minors on Campus | Personal or physical injury to minors on campus resulting from inadequate controls (background checks, clear policies and procedures, etc.) | 27 | 19 |
| H8 | Culture of “Risk Aversion” | Culture of “risk aversion” that prevents the university from taking on bold initiatives and tackling tough internal challenges. | 29 | 8 |
| M7 | Loss of Power | Loss of Power for an extended period of time | 30 | 25 |
| C1 | Accreditation | Loss of accreditation or membership in prestigious academic associations (e.g., Middle States Commission of Higher Education, American Association of Universities) | 31 | 20 |
| A11 | Competition | Competition - Universities around the world will “catch up” with American universities students who choose to study outside the U.S. | 32 | 25 |

Appendix 7 Heat Map from PricewaterhouseCoopers (PwC)



Appendix 8 Risk Register from Education Advisory Board

Attached is a risk register produced by Education Advisory Board listing institutional risks for higher education. Highlighted risks are the ones similar to what included in our Risk Profile.

| RISK CATEGORY | INSTITUTIONAL RISKS |
|-------------------------------------|---|
| Academic Quality | <ul style="list-style-type: none"> ▪ Inability to offer courses that meet students' demands ▪ Inability to ensure online education programs meet institutional academic standards ▪ Inability to recruit or retain sufficient faculty to meet desired student to faculty ratios ▪ Failure to maintain sufficient academic quality standards needed for accreditation ▪ Inability to maintain desired levels of teaching quality ▪ Inability to adequately fund or reallocate resources to core or "high-priority" academic programs |
| Admissions & Enrollment | <ul style="list-style-type: none"> ▪ Inability to offer competitive financial aid packages ▪ Inability to offer competitive tuition rates ▪ Inability to maintain existing levels of student access ▪ Inability to enroll a diverse student body ▪ Inability to meet application targets ▪ Inability to meet enrollment/yield targets ▪ Inability to maintain affordability due to increasing student fees |
| Administrative Service | <ul style="list-style-type: none"> ▪ Inability to meet desired levels of administrative service quality |
| Athletics | <ul style="list-style-type: none"> ▪ Failure to comply with NCAA regulations including athletic recruiting guidelines ▪ Failure to comply with Title IX regulations ▪ Inability to adequately protect student- athlete health and safety |
| Contracts | <ul style="list-style-type: none"> ▪ Inability to anticipate and prevent legal issues associated with external collaborations ▪ Inability to anticipate and prevent undue institutional liability or risk exposure from third-party contracts |
| Endowment/ Development | <ul style="list-style-type: none"> ▪ Insufficient oversight of internal or external investment managers ▪ Inability to absorb significant loss in endowment or investment value |
| Facilities & Maintenance | <ul style="list-style-type: none"> ▪ Inability to ensure staff and student safety due to deteriorating buildings ▪ Inability to stem energy cost increases (either due to demand or supply factors) ▪ Inability to meet presidential sustainability targets ▪ Inability to provide sufficient space to meet teaching, research, and administrative needs ▪ Inability to expand campus facilities footprint due to municipal constraints |

| RISK CATEGORY | INSTITUTIONAL RISKS |
|---------------------------------|--|
| Financial & Economic | <ul style="list-style-type: none"> ▪ Inability to detect or prevent conflicts of interest in financial transactions, agreements, or gifts to senior administrators ▪ Occupational fraud; deliberate misuse or misapplication of university’s resources or assets ▪ Inability to fund new strategic initiatives due to legacy budgeting model ▪ Inability to cope with unexpected revenue shortfall / budget reductions ▪ Failure of online degree programs to meet financial targets ▪ Inability to manage/absorb rising health care costs ▪ Inability to adequately fund all desired programs due to fund diffusion across multiple objectives ▪ Declining institutional financial flexibility due to reduction in financial reserves ▪ Inability to meet liquidity targets against market fluctuations ▪ Failure to control growth in debt burden ▪ Inability to meet debt covenant requirements ▪ Inability to ensure accuracy or completeness of external financial reporting ▪ Inability to fund progress on deferred maintenance queue ▪ Inability to manage or react to fluctuations in currency exchange rates |
| Human Resources | <ul style="list-style-type: none"> ▪ Failure to prevent significant lawsuits and claims relating to professional liability, discrimination, or equal opportunity non-compliance ▪ Inability to recruit and retain top faculty, staff and senior administrators ▪ Inability to meet targets in staff and faculty diversity ▪ Inability to offer a competitive benefits package ▪ Inability to retain faculty and staff due to employee dissatisfaction ▪ Failure to secure favorable collective bargaining outcomes |
| Information Technology | <ul style="list-style-type: none"> ▪ Inability to prevent unauthorized modification of data ▪ Failure to recover from system loss or extended downtime in a timely manner ▪ Inability to ensure physical infrastructure security ▪ Inability to maintain or replace obsolete systems/technology in timely manner ▪ Inability to grow it resources and data center capacity to meet campus needs ▪ Inability to provide accurate and timely updates of core information systems to administrative areas ▪ Inability to deliver satisfactory user support ▪ Failure to comply with information security and privacy regulations ▪ Inability to complete mission-critical it projects in a timely manner |

| RISK CATEGORY | INSTITUTIONAL RISKS |
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| Public Safety & Hazard | <ul style="list-style-type: none"> ▪ Failure to implement and test adequate emergency preparedness measures and post-event contingency plans ▪ Inability to ensure safety of faculty and students working and volunteering off- campus ▪ Inability to ensure safety of faculty and students working, studying, and volunteering overseas ▪ Failure to prevent significant lawsuits and claims relating to workers' compensation ▪ Excessive force by campus policy that may result in severe injury and/or death |
| Research and Grants | <ul style="list-style-type: none"> ▪ Inability to detect or prevent major breaches in research integrity and ethics ▪ Inability to detect or prevent conflicts of interest stemming from third-party contracts ▪ Failure to comply with applicable human/animal subject regulations ▪ Inability to prevent intellectual property infringement ▪ Export control violations |
| Student Life | <ul style="list-style-type: none"> ▪ Inability to ensure that student mental health challenges are adequately addressed ▪ Inability to recruit or retain students due to student dissatisfaction with campus experience ▪ Failure to adequately serve and promote student groups |
| Student Success | <ul style="list-style-type: none"> ▪ Inability to meet retention targets ▪ Inability to retain/graduate students due to lack of early warning systems ▪ Inability to retain/graduate students due to inadequate academic/advising support |

Appendix 9 Preliminary Risk Description

A Risk Response Recommendation would be created for each top risks, based on the overall risk assessment result. At this time, some top risks were chosen by the groups for further discussion, and preliminary risk descriptions are attached in following pages as a result of discussion.

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| <p>Risk</p> | <p>H2 - Inability to recruit and retain top faculty, staff and senior administrators</p> <p>The process for hiring exempt employees is too lengthy. Many top tier candidates are lost in the process as they find other employment before the search process is complete; Limited budget for faculty and staff retention; for faculty/researchers, adequate/updated facilities may also be a deterrent. Some risk event examples are:</p> <ul style="list-style-type: none"> - Pay - Lengthy hiring process - What affects top faculty - Reputation of institution - Facilities and campus environment |
| <p>Risk Owner(s)</p> | <ul style="list-style-type: none"> • Provost (for faculty); • Human Resources (for staff) - HR owns the process and the VP level is ultimately responsible for insuring the system. |
| <p>Current Controls</p> | <ul style="list-style-type: none"> • Faculty – Tenure process • Staff <ul style="list-style-type: none"> - Diversity efforts - PRD rankings - Search Committee • HR policies and procedures |
| <p>Response Strategies</p> | <ul style="list-style-type: none"> • Utilize advertising strategies • Query current researchers • Streamline hiring process • Open opportunity to expand and grow upward mobility <ul style="list-style-type: none"> - 360 feedback - Eliminate barriers for reclassification and internal hire - Encourage that when you hire someone on campus you should be able to look at HR record • Faculty: achievements/training for managers |
| <p>Monitoring</p> | <ul style="list-style-type: none"> • Budget and salaries – better guidance on distributing on merit versus time • Retention: provide incentives such as parking, resources • Disseminate information across university: if a group has perfected the hiring process and has a means of conducting an effective search within the HR guidelines, communicate the process to other groups |

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| <p>Risk</p> | <p>H1 - Stagnated salaries and pay disparity with new hires leading to poor morale and retention problems</p> <p>Salary compression resulting from offering competitive market salaries to newly hired faculty and staff while internal experienced faculty and staff salaries fall behind, creating significant inequities, poor morale and poor retention of skilled and valuable employees. Some risk event examples are:</p> <ul style="list-style-type: none"> – Lack of consistency in organizational structure – New hires are coming in with higher salaries than those who have been with the university on top of no COLA or merit for years – Title and pay disparity – reorganization of units, colleges merge together <ul style="list-style-type: none"> – pay and responsibilities are different while titles are the same – BOR policies need to be updated – UM is last amongst our peers to pay faculty – Discretion is often used as a shield for real discrimination |
| <p>Risk Owner(s)</p> | <ul style="list-style-type: none"> • Human Resources/Departments (for staff) • Academic Affairs – (for faculty) |
| <p>Current Controls</p> | <ul style="list-style-type: none"> • HR review: new positions, salary reclassification and salary adjustments get reviewed against BOR policies • Salaries validated against the market; Market forces dictate faculty salary • PRD System • Faculty salary ranges do exist within the colleges and require approval within Academic Affairs. Those salaries that go beyond the range require approval from the Provost. |
| <p>Response Strategies</p> | <ul style="list-style-type: none"> • Improving transparency – having more information helps morale. Being able to understand pay bands/salary range; making sure staff employees know where they fall and how to move in the system; clarity on how the system works. Establish merit committees with criteria disclosed, within departments for faculty. • PRD System re-evaluated as a tool • Recalibrate existing salaries when hiring new people; Increase flexibility with new hires and recalibrate the salaries of current employees. • Move money strategically; reallocate merit to correct disparities. • Increased flexibilities with bonuses. Find creative ways to give monies to entice faculty (e.g., upgrade labs, provide a research assistant, etc.) • Succession planning |
| <p>Monitoring</p> | <ul style="list-style-type: none"> • For staff – monitor with peers – review unit by unit and department by department to see if there is salary compression |

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| <p>Risk</p> | <p>F1 - Significant cut in State’s contribution to budget due to State budget shortfalls and/or change of State leadership</p> <p>The continuing budget cuts distributed to the campus units prevents development and/or even maintenance of our current regular activities. Some risk event examples are:</p> <ul style="list-style-type: none"> – Losing donor’s dollars that are tied to contingency of capital project funding and follow through – Academic departments must give up faculty lines every year when budget cuts come in |
| <p>Risk Owner(s)</p> | <ul style="list-style-type: none"> • President (primary) • VPA&F • Provost and Deans (allocate resources and manage budget) |
| <p>Current Controls</p> | <ul style="list-style-type: none"> • Outreach to legislators • Provide strategic reallocation of dollars to start small pilots in order to be able to apply for extramural funding • Budget process – strategize about our cost structure • Transparency |
| <p>Response Strategies</p> | <ul style="list-style-type: none"> • For those senior administrators with fiduciary responsibility (from the President to Dept. Chairs) – share best practices and provide training on finance and how to do budgeting • When there is adequate funding – create contingencies • Leverage new technology to reduce operating costs |
| <p>Monitoring</p> | <ul style="list-style-type: none"> • When there’s a decrease in budget, we try to show legislators how it negatively impacts our programming • Financial reserves (fund balance) shared |

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| <p>Risk</p> | <p>A4 - Lack of faculty, staff and infrastructure to support growing student population</p> <p>The University does want to recruit more top students but does not want to necessarily increase enrollment. UM cannot grow more without funding and will not grow without funding. It’s better to keep a steady state on student enrollment. Some risk event examples are:</p> <ul style="list-style-type: none"> – Need better projections on enrollments – Not enough faculty to open enough course sections to meet demand – Lack of adequate advising staff due to understaffing – Lack of technology to meet demands for new ways of teaching – Lack of adequate classroom/lab facilities to meet demand – Lack of adequate housing to increase student enrollment – If more students, then funding is needed to increase UM police jurisdiction in City of College Park. |
| <p>Risk Owner(s)</p> | <ul style="list-style-type: none"> • Provost (primary), VPA&F, VPSA, and other VPs |
| <p>Current Controls</p> | <ul style="list-style-type: none"> • Admissions, IRPA (Institutional Research Planning & Assessment): key factors for statistical projections • Facilities Council: where adequate space is assessed • Finance Committee |
| <p>Response Strategies</p> | <ul style="list-style-type: none"> • Online courses to provide access without needing bricks and mortar – blended culture creases an engaged community • Better enrollment projections • More money |
| <p>Monitoring</p> | <ul style="list-style-type: none"> • Facilities Council: facility oversight • Enrollment Management Group: how many students will apply, how many we accept – projections • Finance Committee – use money wisely • Office of the Provost – oversight program quality with increasing student population • New General Education requirement |

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| <p>Risk</p> | <p>I1 - Information Technology security breaches leading to disclosure of confidential information</p> <p>Information Technology vulnerability is high for protecting confidential information that could include social security numbers, human subjects data, research data, etc. Some risk event examples are:</p> <ul style="list-style-type: none"> - Stealing of research – espionage - Drop in enrollment in technology-related programs (happened at George Mason) - Vulnerability to human research data - Impact on getting grant money |
| <p>Risk Owner(s)</p> | <ul style="list-style-type: none"> • VP- IT • VP- Research |
| <p>Current Controls</p> | <ul style="list-style-type: none"> • At the core, UM business systems are secure; controls weaken the further you get from the core • Technology controls are in place • Departmental controls vary based on programs; not everyone has a departmental IT person • Funding agencies determine requirements on information security necessary to get funding dollars • USM produces a set of guidelines though there is not enough manpower to conduct an IT audit at the departmental level |
| <p>Response Strategies</p> | <ul style="list-style-type: none"> • At campus level, policy that directs how research data is held and/or clear guidelines and procedures • Bottom to top approach to identify needs so IT can build what is needed • Training • Some level of auditing |
| <p>Monitoring</p> | <ul style="list-style-type: none"> • Auditing – but tool that exists doesn’t work • Measure against what standards are out there, per funding agency requirements • Standardize approach to research – make system easy to use • New faculty/new grants – meet with IT to discuss what they need • Centralization of storage, and education of faculty on why they need to use the system |

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| <p>Risk</p> | <p>O15 - Inadequate funding to keep pace with facility maintenance renewal leading to increased failure of building systems and poor visual appearance and functionality</p> <p>There are buildings on campus that have not been upgraded since the 1970’s. HVAC systems in some buildings are inefficient and at times unreliable. In many facilities, the mechanical infrastructure supporting the facility has exceeded its life expectancy. Superficially allocating resources to the visible (painting walls, flowers, furnishings, etc.) does not provide a core strong infrastructure backbone. Failure to adequately upgrade facilities also increases the risk of loss of research and equipment. Some risk event examples are:</p> <ul style="list-style-type: none"> – UM loses top faculty, researchers and grad students (high school students say the chemistry labs in the high schools are better) – Can’t do state-of-the-art research in 1950’s infrastructure with steam radiators and still be able to control for temperature and humidity |
| <p>Risk Owner(s)</p> | <ul style="list-style-type: none"> • Provost (primary) • Associate VP-Facilities Management |
| <p>Current Controls</p> | <ul style="list-style-type: none"> • On-going tracking of deferred maintenance and deferred maintenance log • Respond to high priority issues tactfully rather than strategically • Collaborative funding – departments having the money to maintain facilities versus Facilities Management decisions based on need and resources |
| <p>Response Strategies</p> | <ul style="list-style-type: none"> • Identify priorities on basis of resource allocation and hold management accountable • Preventative Maintenance • Do less but do it well • Need some level of ownership at local level – have departments be more accountable and establish a mechanism to support them |
| <p>Monitoring</p> | <ul style="list-style-type: none"> • Deferred maintenance list • Inspections, backlogs, communications, prioritizing resources |

Appendix 10 Glossary

Enterprise Risk Management (ERM): Enterprise Risk Management is an integrated process designed to assess and manage the risks that threaten an organization’s ability to achieve its strategic objectives.

Framework: A framework is a real or conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful.

- Enterprise Risk Management Framework – The ERM Framework set by the Board of Regents and/or the Executive Leadership, defines essential components, suggests a common language, and provides clear direction and guidance for enterprise risk management
- Essential ERM Framework Elements include:
 - Clear strategies and objectives
 - Risk identification
 - Risk assessment
 - Risk response
 - Risk communication & monitoring

Risk Appetite: Risk Appetite is an organization’s tolerance for risk. The broad amount of risk a college or university is willing to accept in pursuit of its mission or vision. The measurement of risk appetite may be evaluated qualitatively or quantitatively.

Risk Tolerance: Risk Tolerance is the acceptable level of risk relative to the achievement of an objective.

Risk Assessment: Risk Assessment is determining the impact of an identified risk on the institution.

Risk Assessment Activities:

- Risk identification—the qualitative determination of significant risks that can potentially impact the institution’s achievement of its financial and/or strategic objectives. This is often done through structured interviews of key personnel by internal or external experts.
- Risk prioritization—the ranking of risks on a scale, such as frequency and/or severity (See Risk Mapping).

Impact/Significance/Severity: Impact is the result or effect of an event. The impact of an event can be positive or negative relative to the university’s strategic objectives. There can be a range of possible impacts associated with any single event.

Likelihood: Likelihood is the possibility that a given event will occur.

Velocity: Velocity is the speed at which the risk will materialize or how quickly risk events will impact the organization.

Risk Rankings: Risk Rankings are the factors affecting the risks faced by the organization.

Risk Mapping: Risk mapping is the visual representation of risks which have been identified through a risk assessment exercise in a way that easily allows priority ranking of them. This representation often takes the form of a two-dimensional grid with probability or likelihood on one axis and impact or severity on the other axis. The risks that fall in the high probability/high impact quadrant are given priority risk management attention.

Risk Response: Risk Response is management selection of risk avoidance, acceptance, reduction, or sharing risk, and then developing a set of actions to align risks with the institution's risk appetite and tolerances.

- **Risk Acceptance/Risk Retention:** Risk Acceptance is taking the risk in order to pursue an opportunity. It involves making an informed decision to retain the risk.
- **Risk Avoidance:** Risk Avoidance means avoiding the risk by deciding not to start or continue with the activity that gives rise to the risk
- **Risk Reduction:** Risk Reduction involves implementing new controls to change the likelihood or the consequence.
- **Risk Transfer:** Risk Transfer is sharing the risk with another party or parties through contracts and risk financing or insurance.

Risk Owner: A risk owner is the individual or unit who will take the lead in developing and executing a mitigation activity plan. Additionally, the risk owner is also responsible for communication progress to senior management.

Risk Profile: A Risk Profile represents the entire portfolio of risks that constitute the enterprise.

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