Monday, May 18, 2020

Call to Order @ 9:30 am
The Board of Trustees will go directly into Executive Session

Executive Session from 9:30 am to 12:30 pm

Lunch Break

Call to Order/Reconvene Public Meeting by conference call @ 1:00 pm

Citizen Comment (5 min)
Individuals who wish to speak during Citizen Comment, please contact the Board Office at ums.trustees@maine.edu with your name and topic by 5:00 pm on Friday, May 15th. To participate in Citizen Comment during the meeting dial – 1-800-605-5167 code 743544#

The Board of Trustees provides time for citizen comment prior to the business agenda at each meeting. The Chair of the Board will establish time limits (usually three minutes per person) and determine any questions of appropriateness and relevancy. Personnel decisions, collective bargaining issues, grievances, litigation and other areas excludable from public discussion under the Maine Freedom of Access Law shall not constitute appropriate matters for such input. A person who wishes to speak during the citizen comment period should arrive prior to the meeting start time and sign up on a sheet provided, indicating name and topic of remarks.

Chair’s Report (10 min)

Chancellor’s Report (20 min)
Tab 1 - UMS Coronavirus Response and Safe Return Planning
  • Introduction of the Dean of the Law School

Vice Chancellor for Finance and Administration & Treasurer’s Report (30 min)
Tab 2 - Financial Update

Interim Vice Chancellor for Academic Affairs’ Report (40 min)
Tab 3 - Academic Affairs Update

Action Items (30 min)
Tab 4 - Acceptance of Minutes
Tab 5 - Election of Board Officers
Tab 6 - Resolution for Gregory G. Johnson
Tab 7 - Resolution for Elizabeth M. Timm
Tab 8 - Confirmation of Faculty & Student Representative to the Board of Trustees
Tab 9 - New Academic Program Proposal: B.S. in Health Administration, UMPI
Tab 10 - Tenure at Time of Hire, Law School

Consent Agenda (5 min)
April 27, 2020 Academic & Student Affairs Committee Meeting
Tab 11 - New Academic Program Proposal: B.S. in Computer Sciences, UMPI
Tab 12 - New Academic Program Proposal: B.S. in Environmental GIS, UMM

Discussion Topics
Tab 13 - Unified Accreditation Update (15 min)
Tab 14 - Change to Board Policy 310 on Tenure and Amending Academic & Student Affairs Duties and Responsibilities (15 min) - WITHDRAWN - 5/15/2020
Tab 15 - New Board Policy Proposal: UMS Academic Integrity Policy (15 min)
Tab 16 - Overview of the Climate Change Institute and Mt. Everest Expedition (30 min)
Tab 17 – GIS Mapping to Estimate Economic Impact of Flooding (10 min)
Tab 18 - Reaching R1 Status: Highlights & Updates of University of Maine Research Initiatives (15 min)
Tab 19 - Roux Institute Update (15 min)

Date of the Next Meeting: July 20, 2020 hosted by UMS, at the University of Maine

Attachments:
Financial Update
- Managed Investment Pool
- Pension Fund
- Operating Fund
- Current Fiscal Year-to-Date Forecast to Budget
VCAA KPI Update Report for May 2020
Proposed Board Policy on Academic Integrity
Proposed Changes to Board Policy 310 – Tenure & Corresponding Academic Procedures
Proposed Changes to Academic & Student Affairs Committee Duties & Responsibilities
Law School Tenure at Time of Hire - Background Information (Confidential)
Full Program Proposal – UMM BS GIS
Full Program Proposal – UMPI BS COS
Program Proposal Supplemental Document – UMPI BS HEA
Full Program Proposal – UMPI BS HEA
Unified Accreditation Authorization Resolution Approved by the Board – Jan. 27, 2020
Letter from UM Faculty Senate
Letter from UMA Faculty Senate

Reports:
- UMS Interactive Dashboard
- Agenda Calendar
- Workforce Profile
- Turnover Report
- Capital Project Status Report
  - Executive Summary
  - Capital Project Status Report
  - Capital Project Status Report – Bond Report

Presentations:
- Mt. Everest Expedition Presentation
- GIS Mapping to Estimate Economic Impacts of Flooding
- University of Maine Research Initiatives Presentation
- UM-UMS Roux Institute/Northeastern University Presentation

Tabs noted in red text are action items.
Note: Times are estimated based upon the anticipated length for presentations or discussion of a particular topic. An item may be brought up earlier or the order of items changed for effective deliberation of matters before the Board.
AGENDA ITEM SUMMARY

1. NAME OF ITEM: UMS Coronavirus (COVID-19) Response and Safe Return Planning

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: X

4. OUTCOME: BOARD POLICY:
   Enhance fiscal positioning

5. BACKGROUND:

   At the May 18, 2020 Board of Trustees meeting Vice Chancellor for Academic Affairs Robert Placido and UMS Chief General Services Officer Chip Gavin, as co-chairs of the Safe Return Committee, will provide a brief update on the COVID-19 response and safe return planning.

   https://www.maine.edu/health-advisory/

5/7/2020
AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Finance and Administration Update

2. **INITIATED BY:** Dannel P. Malloy, Chancellor

3. **BOARD INFORMATION:** X

4. **OUTCOME:**
   - Enhance fiscal positioning

5. **BACKGROUND:**

   The Vice Chancellor for Finance and Administration and Treasurer Ryan Low will provide three brief updates at the May 18, 2020 Board of Trustees meeting.

   1. **Financial Update** – Vice Chancellor Low will present the UMS Flash Reports and the current Fiscal Year-to-Date Forecast to Budget.

   2. **Budget Update** – Vice Chancellor Low will provide an update on FY20 and FY21 budget planning / COVID19 impacts.

   3. **KPI Update** – Vice Chancellor Low will update the Board on the Standard & Poors Debt Rating. This discussion will be part of a series of regular updates to the Board by the Vice Chancellors on the progress in meeting KPIs.

Attachments:
- Managed Investment Pool Flash Reports
- Pension Fund Flash Reports
- Operating Fund Flash Reports
- Current Fiscal Year-to-Date Forecast to Budget

5/7/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Vice Chancellor for Academic Affairs Update

2. INITIATED BY: Dannel Malloy, Chancellor

3. BOARD INFORMATION: X

4. OUTCOME: Relevant Academic Programming

   Enrollment

5. BACKGROUND:
The Vice Chancellor for Academic Affairs’ (VCAA) update at the May 2020 Board of Trustees meeting has three items.

   1. COVID19: Our response to the Coronavirus crisis was more than our herculean work for our own continuity of operations. Our System and Universities have risen to the challenge in ways that extend past our campus grounds. Dr. Placido has invited the team that formed to meet the needs for nursing state-wide to speak about their extraordinary efforts. The team consisted of Megan Clough - Director of Learning and Organizational Development, Erin Soucy - Dean for the Undergraduate School of Nursing at UMFK, Brenda Petersen - Associate Dean of Nursing at USM, Shannon E Gauvin - Director of Nursing at UMA, and Kelley Strout - Assistant Professor of Nursing at UM. This is just one example of the spirit, determination and hard work that all of our faculty, staff, and students have displayed. Thank you to everyone.

   2. Faculty Spotlight: Dan Demeritt and Dr. Robert Placido will present the expansion of the Faculty Spotlight concept into the Discover Maine Academic campaign. The campaign will feature a member of our faculty as part of every Board meeting, developing branded content celebrating the quality and impact of their work that can be distributed / promoted to help general interest audience and potential students get a better sense of the academic rigor and richness available at Maine's public universities. Lori Sussman, Assistant Professor of Technology and Cybersecurity, will be celebrated in May. Dan Demerit will share the video he produced highlighting Dr. Sussman.

   3. Programs for Examination (PFE): Dr. Robert Placido, Vice Chancellor of Academic Affairs, will provide a quick update on the status of the new PFE process.

   4. KPI Update: Dr. Robert Placido will update the Trustees on the status of Fall 2020 applications and Early College measures.

Attachment:
VCAA KPI Update Report for May 2020

Updated - 5/13/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Acceptance of Minutes

2. INITIATED BY: James R. Erwin, Chair

3. BOARD INFORMATION: BOARD ACTION: X

4. OUTCOME: BOARD POLICY:

5. BACKGROUND:

The following minutes will be presented to the Board of Trustees for approval at the May 18, 2020 Board meeting:

February 24, 2020 – Academic & Student Affairs Committee
February 24, 2020 – Human Resources & Labor Relations Committee
February 26, 2020 – Finance, Facilities, Technology Committee
February 27, 2020 – Investment Committee
March 16, 2020 – Board of Trustees Meeting
March 25, 2020 – Finance, Facilities, Technology Committee
April 17, 2020 – Executive Committee Meeting

The Board of Trustees website link to the minutes is: http://www.maine.edu/about-the-system/board-of-trustees/meeting-minutes/

6. TEXT OF PROPOSED RESOLUTION:

That the Board of Trustees approves the minutes as presented.

05/07/20
AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Election of Board Officers

2. **INITIATED BY:** Trustee Lisa Eames, Chair, Trustee Nominating Committee

3. **BOARD INFORMATION:**

4. **OUTCOME:**

5. **BACKGROUND:**

   The Board Chair appointed the following Trustees to the Trustee Nominating Committee: Lisa Eames, James Donnelly and Kelly Martin. The Committee will propose a slate of officers at the annual meeting in May.

6. **TEXT OF PROPOSED RESOLUTION:**

   That the Board of Trustees approves the Board of Trustees slate of officers for 2020-2021, as presented.

05/07/20
### AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Resolution for Gregory G. Johnson

2. **INITIATED BY:** James R. Erwin, Chair

3. **BOARD INFORMATION:**

   **BOARD ACTION:** X

4. **OUTCOME:**

   **BOARD POLICY:**

5. **BACKGROUND:**

   Admiral Gregory G. Johnson has served as a Trustee for the University of Maine System from May 11, 2011 to May 26, 2020. During his nine years of service he set a high standard for the level of involvement for a Board member including service on the following committees:
   - Executive Committee – for nine years
   - Academic and Student Affairs Committee – for ten years and chair for eight years
   - Audit Committee
   - Human Resources & Labor Relations Committee
   - Finance/Facilities/Technology Committee - for ten years
   - Investment Committee

   Trustee Johnson was Vice Chair of the Board from 2013 to 2016. In addition, he served as the UMS Trustee representative to the University of Maine Foundation for eight years.

   Trustee Johnson has been an outstanding mentor, colleague and friend to Trustees and staff and has exemplified commitment to the University through his unfailing commitment and presence. He completes his second and final term on the Board of Trustees on May 26, 2020.

6. **TEXT OF PROPOSED RESOLUTION**

   A resolution for Board approval will be presented at the May 18, 2020 Board of Trustees meeting.
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Resolution for Elizabeth “Betsey” M. Timm

2. INITIATED BY: James R. Erwin, Chair

3. BOARD INFORMATION: BOARD ACTION: X

4. OUTCOME: BOARD POLICY:

5. BACKGROUND:

Ms. Betsey M. Timm has served as a Trustee for the University of Maine System from October 30, 2017 to May 26, 2020. She has set a high standard for the level of involvement for a Board member including service on the following committees: Executive Committee, Academic and Student Affairs Committee, Investment Committee and Chaired the Human Resources & Labor Relations Committee for the past two years.

Ms. Timm also served on the University of Maine at Farmington Presidential Search in 2019.

Trustee Timm’s understanding of the issues, attention to both detail and big picture, and ability to effectively chair meetings were invaluable. Her corporate, financial and human resources expertise enabled her to bring a level of perspective that greatly benefitted the Human Resources and Labor Relations Committee.

6. TEXT OF PROPOSED RESOLUTION

A resolution for Board approval will be presented at the May 18, 2020 Board of Trustees meeting.

05/07/20
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Confirmation of Faculty & Student Representatives to the Board of Trustees

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION:

   BOARD ACTION: X

4. OUTCOME: BOARD POLICY:

   Policy 205 - Faculty & Student Representatives to the Board of Trustees

5. BACKGROUND:

   To create the environment for interaction among and between Faculty and Student Representatives, the Trustees and System administration, the Trustees have provided opportunities for participation in the meetings of the committees of the Board.

   One faculty member and one undergraduate student from each of the seven universities and one graduate student from the University of Southern Maine and one graduate student from the University of Maine will be appointed by the Board as non-voting representatives to the Board of Trustees and invited to participate as non-voting members on the standing committees.

   Normally, the representative is expected to complete a two year term; therefore, it is an expectation that the minimum term of service by Faculty and Student Representatives to the Board be two years. The nominations will be forwarded through the Presidents to the Chancellor for submission to the Board for Trustee approval.

   The following nominations are being recommended by the Presidents:

   Faculty Representatives:
   Harlan Onsrud, UM – appointed for a two year term - May 2020 to May 2022
   Clyde Mitchell, UMF – reappointed for a two year term – May 2020 to May 2022
   Heather Ball, UMM – reappointed for a two year term – May 2020 to May 2022
   Lisa Leduc, UMPI – reappointed for a two year term – May 2020 to May 2022

   Student Representatives:
   Salvatore Cardinale, UMA – appointed for a two year term – May 2020 to May 2022
   Kendra Bear-Perley, UMPI – appointed for a two year term – May 2020 to May 2022

   Graduate Student Representative:
   Eli Rubin, USM – appointed for a two year term – May 2020 to May 2022

6. TEXT OF PROPOSED RESOLUTION:

   That the Board of Trustees approves the appointments of the Faculty & Student Representatives to the Board of Trustees as presented.

5-7-2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: New Academic Program Proposal: B.S. in Health Administration, UMPI

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: BOARD ACTION: X

4. OUTCOME: BOARD POLICY:
Relevant Academic Programing 305.1 Program Approval, Review & Elimination Procedures

5. BACKGROUND:

The University of Maine of Presque Isle (UMPI) is seeking permission to offer a Bachelor of Science in Health Administration (HEA, B.S.) with concentrations in Community Health and Health Informatics. As described in the proposal, a comprehensive market analysis identified the fields of Healthcare Administration and Health Informatics to be in high regional demand, to offer numerous career opportunities for our students and areas residents, to be lacking in availability at postsecondary institutions in the area, and to be an appropriate addition to our university's programming as well as feasible and sustainable long term for UMPI. The program has received funding by the US Department of Education's Strengthening Institutions Program (Title III grant). The degree plan will include face-to-face classroom instruction as well as the development of online modalities (UMPI’s competency-based YourPace programming).

The proposal was reviewed at all appropriate faculty and administrative levels at UMPI was reviewed and subsequently recommended by the Chief Academic Officers Council. Dr. Robert Placido, Vice Chancellor of Academic Affairs recommended the program to the Chancellor. Chancellor Malloy signed his approval of the program on April 21, 2020.

The Trustee Committee members of the Academic and Student Affairs Committee, felt that additional information was needed in order to approve this item at the May Board meeting. Therefore, the Academic and Student Affairs Committee agreed to remove this item from the Consent Agenda and to forward it as a full action item to the May 18, 2020 Board of Trustees meeting, for additional discussion and approval of the following resolution:

6. TEXT OF PROPOSED RESOLUTION:

That the Board of Trustees accepts the recommendation of the Academic and Student Affairs Committee and authorizes creation of the Bachelor of Science in Health Administration at the University of Maine at Presque Isle.

Attachments:
Program Proposal Supplemental Document – UMPI BS HEA
Full Program Proposal – UMPI BS HEA

5/7/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Tenure at Time of Hire, Law School

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: BOARD ACTION: X

4. OUTCOME: BOARD POLICY: Policy 310

5. BACKGROUND:

The University Maine School of Law has requested that Jessica Feinberg, J.D. be awarded tenure at the rank of full Professor, effective September 1, 2020 in accordance with Board of Trustee Policy 310. Ms. Feinberg achieved the rank of full Professor in 2019 at Mercer University School of Law through a thorough and rigorous multi-year review process. She has a superb record of scholarship, teaching and service. Law School faculty have conducted their own review and support this recommendation. Her achievements clearly demonstrate that she meets the standards for tenure at the rank of full Professor at the University of Maine School of Law.

That the Academic and Student Affairs Committee forwarded this item to the May 18, 2020, Board of Trustees meeting for approval of the following resolution.

6. TEXT OF PROPOSED RESOLUTION:

That the Board of Trustees accepts the recommendation of the Academic and Student Affairs Committee and approves tenure at the rank of Professor of Law at the University of Maine School of Law to Ms. Jessica Feinberg with tenure to be effective at the time of hiring.

Attachment:
Law School Tenure at Time of Hire - Background Information (Confidential)

5/7/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: New Academic Program Proposal: B.S. in Computer Science, UMPI

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: 
   BOARD ACTION: X

4. OUTCOME: 
   Relevant Academic Programing
   BOARD POLICY: 
   305.1 Program Approval, Review & Elimination Procedures

5. BACKGROUND:

   The University of Maine of Presque Isle (UMPI) is seeking permission to offer a Bachelor of Science in Computer Science (COS, B.S.). As described in the included proposal, proposed Computer Science program will not only serve the demand for computer science professionals but also provide support for the many computer applications in business, healthcare, mathematics, data analytics, education, sciences, and new and social media. UMPI successfully received a 5-year federal Department of Education grant to fund the development of a Computer Science, Bachelor in Science program with concentrations in Software Development and Information & Data Management. The major will be offered both in a live modality and UMPI’s competency-based YourPace programming.

   The proposal was reviewed at all appropriate faculty and administrative levels at UMPI was reviewed and subsequently recommended by the Chief Academic Officers Council. Dr. Robert Placido, Vice Chancellor of Academic Affairs recommended the program to the Chancellor. Chancellor Malloy signed his approval of the program on April 21, 2020.

   The Academic and Student Affairs Committee agreed to forward the following resolution to the Consent Agenda for approval at the Board of Trustees meeting on May 18, 2020.

6. TEXT OF PROPOSED RESOLUTION:

   That the Board of Trustees accepts the recommendation of the Academic and Student Affairs Committee and authorizes the creation of the Bachelor of Science in Computer Science at the University of Maine at Presque Isle.

Attachment:
Full Program Proposal – UMPI BS COS
AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** New Academic Program Proposal: B.S. in Environmental GIS, UMM

2. **INITIATED BY:** Dannel P. Malloy, Chancellor

3. **BOARD INFORMATION:**

   **BOARD ACTION:** X

4. **OUTCOME:** Relevant Academic Programming

   **BOARD POLICY:** 305.1 Program Approval, Review & Elimination Procedures

5. **BACKGROUND:**

   The University of Maine at Machias (UMM) to offer a B.S. Environmental Geographic Information Science (BSGIS). The attached material includes a letter of support from President Ferrini-Mundy, Interim Provost Gilbert, and Head of Campus and Vice President of Academic Affairs Qualls, as well as the full program proposal. The importance of GIS has become evident during the COVID19 crisis, as leaders across the country make decisions on the basis of the GIS Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. There are currently 2,153 GIS jobs available in New England, and this demand is expected to grow by 10% nationally.

   The proposed B.S. Environmental Geographic Information Science was reviewed and recommended by the Chief Academic Officers Council (CAOC) on April 16, 2020. Dr. Robert Placido, Vice Chancellor of Academic Affairs recommended the program to the Chancellor. Chancellor Malloy signed his approval of the program on April 21, 2020.

   The Academic and Student Affairs Committee agreed to forward the following resolution to the Consent Agenda for approval at the Board of Trustees meeting on May 18, 2020.

6. **TEXT OF PROPOSED RESOLUTION:**

   That the Board of Trustees accepts the recommendation of the Academic and Student Affairs Committee and authorizes the creation of the Bachelor of Science in Environmental GIS at the University of Maine at Machias.

Attachment:
*Full Program Proposal – UMM BS GIS*

5/7/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Unified Accreditation Update

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: X

4. OUTCOME:
   Increase Enrollment
   Improve Student Success and Completion
   Relevant Academic Programming
   Enhance Fiscal Positioning
   Support Maine through Research and Economic Development

5. BACKGROUND:

   Chief of Staff and General Counsel James Thelen will provide an update on UMS’s work on preparing the necessary substantive change application to the New England Commission of Higher Education to transition to unified accreditation and related matters.

Attachment:
Unified Accreditation Authorization Resolution Approved by the Board – Jan. 27, 2020

5/7/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Change to Board Policy 310 on Tenure, and Amending Academic & Student Affairs Duties and Responsibilities

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: X BOARD ACTION:

4. OUTCOME: BOARD POLICY: 310 and Academic & Student Affairs Committee Duties and Responsibilities

5. BACKGROUND:

Board Policy 310 on Tenure and the accompanying administrative procedures first came into effect in 1970, and were revised in 1990. The Vice Chancellor for Academic Affairs and the General Counsel and Chief of Staff to the Chancellor recommend specific changes to update the policy to better reflect the expectations of operating under unified accreditation. These include:

- Specifying Board authority to approve tenure-track faculty lines;
- Adjusting guidelines and numbers;
- Aligning language with unified accreditation to remove ambiguity; and
- Amending the Academic & Student Affairs Committee oversight responsibilities to reflect the above.

Attachments:
- Proposed Changes to Board Policy 310 – Tenure & Corresponding Academic Procedures
- Proposed Changes to Academic & Student Affairs Committee Duties & Responsibilities
- Letter from UM Faculty Senate
- Letter from UMA Faculty Senate

Withdrawn - 5/15/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: New Board Policy Proposal: UMS Academic Integrity

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: BOARD ACTION:

4. OUTCOME: BOARD POLICY:
   New policy proposal
   UMS Academic Integrity Policy

5. BACKGROUND:
The UMS has had a System-wide Student Conduct Code since 1972; however, there has not been a similar approach to academic integrity, the policies for which remain varied and at the campus level. The proposed UMS Academic Integrity Policy is an intended counterpart to the Student Conduct Code, and will provide necessary fairness, transparency, and uniformity for students, faculty, and staff in the context of unified accreditation.

In 2018, the office of the Vice Chancellor for Academic Affairs convened a workgroup made up of representatives from each campus drawn from faculty, student affairs, and other relevant departments, to review existing campus Academic Integrity Policies and craft a new policy for System-wide implementation. The proposed policy was shared in draft form multiple times with all campuses, their Chief Academic Officers, and their Presidents. The policy was accordingly revised based on their collective feedback. It has also been vetted through the UMS General Counsel’s Office to address any compliance and due process concerns.

The first reading of this proposed new Board Policy was presented at the ASA Committee meeting. It is being presented at the May Board meeting as an information item, with the intent for the ASA Committee to accept at the June whatever meeting and forward to the Board for approval at the July BOT meeting. Office of the Vice Chancellor for Academic Affairs recommends that the new policy on Academic Integrity be implemented for September 1, 2020.

Attachment:
Proposed Board Policy on Academic Integrity

5/7/2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Overview of Climate Change Institute and Mt. Everest Expedition

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: BOARD ACTION:

4. OUTCOME: BOARD POLICY:

5. BACKGROUND:
Dr. Paul Andrew Mayewski, Director of the Climate Change Institute (CCI) and Distinguished University of Maine Professor, will provide an overview of CCI’s research. CCI is a University of Maine Signature Program and a classic example of the University of Maine’s research theme “Global Impact and Local Relevance”. CCI is one of the oldest multidisciplinary research units in the world with a legacy of scientific contributions that are recognized nationally and internationally to have contributed significantly to the understanding of past, present and future climate change. The presentation will focus on CCI’s global reach with specific applications to the understanding of the impacts of climate change on Maine today and CCI’s Climate Futures initiative dedicated to improving predictions for future climate change (physical, chemical, biological and social) in Maine and worldwide.

In May 2019 an international team of scientists, climbers and storytellers, led by the National Geographic Society and Tribhuvan University, and supported in partnership with Rolex, conducted a scientific expedition to Mount Everest, believed to be the most comprehensive single scientific expedition to the mountain in history.

The multidisciplinary team installed the two highest weather stations in the world (at 8,430 meters and 7,945 meters), collected the highest-ever ice core (at 8,020 meters), conducted comprehensive biodiversity surveys at multiple elevations, completed the highest elevation helicopter-based lidar scan, expanded the elevation records for high-dwelling species and documented the history of the mountain’s glaciers.

Six University of Maine scientists participated and Paul Mayewski, Director of UMaine Climate Change Institute was expedition leader and lead scientist for the project. Dr. Mayewski, who was participating in his fourth Everest excursion, is used to extremes. The world-renowned climate scientist and explorer has led nearly 60 climate science treks around the globe, including many in Antarctica. With team members from eight countries, including 17 Nepali researchers, the expedition team conducted trailblazing research in five areas of science that are critical to understanding environmental changes and their impacts: biology, glaciology, meteorology, geology, and mapping.

The Everest expedition is part of National Geographic’s newly established Life at the Extremes program, and is the first in a series of Perpetual Planet Extreme Expeditions that are supported by a renewed and expanded partnership between National Geographic and Rolex.

For more information: National Geographic’s Perpetual Planet Extreme Expedition to Everest.

AGENDA ITEM SUMMARY

1. NAME OF ITEM: GIS Mapping to Estimate Economic Impact of Flooding

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: X BOARD ACTION:

4. OUTCOME: BOARD POLICY:

5. BACKGROUND:

Dr. Tora Johnson, the students and faculty with the UMM Geographic Information Systems Laboratory at the University of Maine at Machias have been working with the Town of Machias over the last several years on a plan to protect the downtown from rising seas and storm surges.

The team’s work includes efforts to map vulnerabilities, map and estimate economic impacts of possible flood scenarios, and plan interventions. On April 9-10, 2020, one of those scenarios came true when a spring tide combined with a storm surge to flood the upper Machias Bay, including downtown Machias. This presentation will outline this student and faculty work with the Machias community and our plans for future work.

Presentation:
GIS Mapping to Estimate Economic Impacts of Flooding
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Reaching R1 Status: Highlights and Updates on University of Maine Research Initiatives

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: X BOARD ACTION:

4. OUTCOME: BOARD POLICY:
Primary Outcomes:
- Increase enrollment
- Enhance fiscal positioning
- Support Maine through research and economic development
Secondary Outcomes:
- Relevant academic programming
- University workforce engagement

5. BACKGROUND:
University of Maine President Joan Ferrini-Mundy will discuss the role of the public research university and the necessity of coalescing research emphases, research human capital and infrastructure in areas that matter for Maine and beyond, drawing on examples from the COVID-19 pandemic.

She will discuss initiatives underway and planned to sustain, strategically grow, and document the University’s research enterprise. These initiatives are critical to having state, national, and international impact and to obtaining the quality indicator of reaching the Carnegie Research 1 designation. Attaining the R1 designation will open new opportunities to build capacity and research performance, and instructional distinction at the University of Maine, for the state and beyond.

Presentation:
University of Maine Research Initiatives Presentation

5-7-2020
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Roux Institute Update

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: X

4. OUTCOME: Increase Enrollment
   Improve Student Success and Completion
   Relevant Academic Programming

5. BACKGROUND:

   Chancellor Malloy, UM President Joan Ferrini-Mundy and USM President Glenn Cummings will provide an update on the University of Maine and University of Southern Maine’s interactions with Northeastern University regarding the Roux Institute and related matters.

Presentation:
UM-USM Roux Institute/Northeastern University Presentation

5-7-2020
## University of Maine System Managed Investment Pool

### TOTAL PLAN PERFORMANCE

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<th>% of Portfolio</th>
<th>Policy %</th>
<th>1 Mo (%)</th>
<th>3 Mo (%)</th>
<th>Fiscal YTD (%)</th>
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## University of Maine System Managed Investment Pool

### TOTAL PLAN PERFORMANCE

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<th>Fund</th>
<th>Market Value ($)</th>
<th>% of Portfolio</th>
<th>Policy %</th>
<th>1 Mo (%)</th>
<th>3 Mo (%)</th>
<th>Fiscal YTD (%)</th>
<th>1 Yr (%)</th>
<th>3 Yrs (%)</th>
<th>5 Yrs (%)</th>
<th>7 Yrs (%)</th>
<th>10 Yrs (%)</th>
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Notes:
- Fiscal YTD begins 7/1
- Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&P 500, 10% BC High Yield, 10% JPM EMBI+
- Returns are net of manager fees
- Landmark market value is estimated as of 3/31/2020.
- Cash account includes $434 currently being held in the TCW account.

March 31, 2020
Information Disclaimer

• Past performance is no guarantee of future results.

• All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.

• NEPC’s source for portfolio pricing, calculation of accruals, and transaction information is the plan’s custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

• Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.

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Reporting Methodology

• The client’s custodian bank is NEPC’s preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.

• Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.

• For managers funded in the middle of a month, the “since inception” return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.

• This report may contain forward-looking statements that are based on NEPC’s estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.
### University of Maine System Pension Plan

#### TOTAL PLAN PERFORMANCE

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<th>Market Value ($)</th>
<th>% of Portfolio</th>
<th>Policy %</th>
<th>1 Mo (%)</th>
<th>3 Mo (%)</th>
<th>Fiscal YTD (%)</th>
<th>1 Yr (%)</th>
<th>2 Yrs (%)</th>
<th>3 Yrs (%)</th>
<th>5 Yrs (%)</th>
<th>7 Yrs (%)</th>
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March 31, 2020
University of Maine System Pension Plan

TOTAL PLAN PERFORMANCE

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<th></th>
<th>Market Value ($)</th>
<th>% of Portfolio</th>
<th>Policy %</th>
<th>1 Mo (%)</th>
<th>3 Mo (%)</th>
<th>Fiscal YTD (%)</th>
<th>1 Yr (%)</th>
<th>2 Yrs (%)</th>
<th>3 Yrs (%)</th>
<th>5 Yrs (%)</th>
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Notes:
- Fiscal YTD begins 7/1
- Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&P 500, 10% BC High Yield, 10% JPM EMBI+
- Returns are net of manager fees
**Information Disclaimer**

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC’s source for portfolio pricing, calculation of accruals, and transaction information is the plan’s custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
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- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

**Reporting Methodology**

- The client’s custodian bank is NEPC’s preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the “since inception” return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC’s estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.
### University of Maine System Operating Fund

#### TOTAL PLAN PERFORMANCE

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<th>Fund Composite</th>
<th>Market Value ($)</th>
<th>% of Portfolio</th>
<th>Policy %</th>
<th>1 Mo (%)</th>
<th>3 Mo (%)</th>
<th>Fiscal YTD (%)</th>
<th>1 Yr (%)</th>
<th>3 Yrs (%)</th>
<th>5 Yrs (%)</th>
<th>7 Yrs (%)</th>
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<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Blended Index</td>
<td></td>
<td></td>
<td></td>
<td>-4.2</td>
<td>-2.9</td>
<td>0.1</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
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<tr>
<td>Vanguard Total World Stock Index</td>
<td>23,718,891</td>
<td>8.5</td>
<td>9.5</td>
<td>-14.6</td>
<td>-22.3</td>
<td>-15.3</td>
<td>-12.3</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>FTSE Global All Cap Index</td>
<td></td>
<td></td>
<td></td>
<td>-14.2</td>
<td>-22.2</td>
<td>-15.1</td>
<td>-12.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**Notes:**
- Returns are net of manager fees.
- The inception date for the allocation index is 07/01/2009.
- Fiscal YTD begins 7/1.
- Blended Index: 40% BC Aggregate / 30% BC U.S. TIPS 1-10YR / 10% S&P 500 / 10% BC High Yield / 10% JPM EMBI+
- Composite excludes external loans.
- Blackrock SIO changed its share class in May 2018 to BSIKX.

**March 31, 2020**
Information Disclaimer

• Past performance is no guarantee of future results.

• All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.

• NEPC’s source for portfolio pricing, calculation of accruals, and transaction information is the plan’s custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

• Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.

• This report is provided as a management aid for the client’s internal use only. Information contained in this report does not constitute a recommendation by NEPC.

• This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Reporting Methodology

• The client’s custodian bank is NEPC’s preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.

• Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.

• For managers funded in the middle of a month, the “since inception” return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.

• This report may contain forward-looking statements that are based on NEPC’s estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.
### UNIVERSITY OF MAINE SYSTEM
#### 3rd Period Forecast

#### E & G and AUXILIARY

<table>
<thead>
<tr>
<th>Institution</th>
<th>Budget</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>Variance (Inst)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMAINE $</td>
<td>-</td>
<td>$3,437,382</td>
<td>$3,241,462</td>
<td>$12,743,187</td>
<td>$3,801,847</td>
</tr>
<tr>
<td>UMM (494,277)</td>
<td>(333,910)</td>
<td>(283,311)</td>
<td>(616,441)</td>
<td>(122,164)</td>
<td>242,811</td>
</tr>
<tr>
<td>UMA (1,418,183)</td>
<td>(962,477)</td>
<td>(496,135)</td>
<td>27,823</td>
<td>1,446,006</td>
<td>708,723</td>
</tr>
<tr>
<td>UMF $1 (1,991,692)</td>
<td>(1,984,449)</td>
<td>(3,855,261)</td>
<td>(1,863,569)</td>
<td>1,184,151</td>
<td></td>
</tr>
<tr>
<td>UMFK -</td>
<td>-</td>
<td>437,778</td>
<td>437,778</td>
<td>344,113</td>
<td></td>
</tr>
<tr>
<td>UMPI</td>
<td>47,761</td>
<td>47,761</td>
<td>(172,939)</td>
<td>(705,143)</td>
<td>(752,904)</td>
</tr>
<tr>
<td>USM - Excluding Law</td>
<td>60,399</td>
<td>(2,583,232)</td>
<td>(3,791,052)</td>
<td>(3,851,451)</td>
<td>2,347,454</td>
</tr>
<tr>
<td>Law $1 (925,000)</td>
<td>(1,047,371)</td>
<td>(993,549)</td>
<td>(745,338)</td>
<td>179,662</td>
<td>37,261</td>
</tr>
<tr>
<td>Campus Total (4,720,992)</td>
<td>(10,078,622)</td>
<td>(9,755,077)</td>
<td>(21,990,821)</td>
<td>(17,269,829)</td>
<td>9,001,999</td>
</tr>
<tr>
<td>Governance -</td>
<td>-</td>
<td>-</td>
<td>280,000</td>
<td>280,000</td>
<td></td>
</tr>
<tr>
<td>University Services -</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee Benefit Pool -</td>
<td>$500,000</td>
<td>$500,000</td>
<td>$500,000</td>
<td>$500,000</td>
<td></td>
</tr>
<tr>
<td>TOTAL (4,720,992)</td>
<td>(10,578,622)</td>
<td>(10,255,077)</td>
<td>(22,210,821)</td>
<td>(17,489,829)</td>
<td></td>
</tr>
</tbody>
</table>

1. Approved Budget Stabilization Fund transfers at year end up to $500,000 for UMF; $797,454 for Law ($500,000 from FY20 plus $297,454 from FY19); Law may also receive up to $425,000 funding from USM & UMS

| Unrestricted Investment Income | $3,371,771 | $1,444,668 | $4,066,870 | $710,386 | $2,661,385 |

*Investment income for the 3rd forecast period is based on April results with 81% reporting and does not include any projection for future gains or losses.*
Number of Applications by Days Leading to the Start of the Fall Semester

Source: UMS Institutional Research: Justin Young & Robert Zuercher
Source: UMS Institutional Research: Justin Young & Robert Zuercher
Number of Matriculated Students by Days Leading to the Start of the Fall Semester

Source: UMS Institutional Research: Justin Young & Robert Zuercher
# Spring 2020 Course data
(as of April 30, 2020)

<table>
<thead>
<tr>
<th></th>
<th>UM</th>
<th>UMA</th>
<th>UMF</th>
<th>UMFK</th>
<th>UMM</th>
<th>UMPI</th>
<th>USM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Course Registrations</strong></td>
<td>252</td>
<td>516</td>
<td>32</td>
<td>602</td>
<td>170</td>
<td>544</td>
<td>441</td>
<td>2,557</td>
</tr>
<tr>
<td><strong>Course Withdrawals (#)</strong></td>
<td>13</td>
<td>17</td>
<td>2</td>
<td>36</td>
<td>14</td>
<td>14</td>
<td>16</td>
<td>112*</td>
</tr>
<tr>
<td><strong>Course Withdrawals (%)</strong></td>
<td>5.20%</td>
<td>3.30%</td>
<td>6.30%</td>
<td>6.00%</td>
<td>8.20%</td>
<td>2.60%</td>
<td>3.60%</td>
<td>4.40%</td>
</tr>
</tbody>
</table>

*11 students specifically identified the COVID-19 pandemic as the reason for withdrawal in the online portal.

*Source: UMS Institutional Research: Justin Young & Robert Zuercher*
Early College Growth
(As of April 29, 2020)

UMS Early College Students
Headcount (Unduplicated)

*System-wide initiative with support from State Appropriation began in Spring, 2018

Source: UMS Institutional Research: Justin Young & Robert Zuercher
University of Maine System Academic Integrity Policy Effective as of September 1, 2020

Academic integrity violations strike at the heart of the educational mission of the University of Maine System. The academic community of the University of Maine System recognizes that adherence to high principles of academic integrity is vital to the academic function of the University. Academic integrity is based upon honesty. All students of the University are expected to be honest in their academic endeavors. All academic work should be performed in a manner that will provide an honest reflection of the knowledge and abilities of each student. All members of the academic community should regard any breach of academic honesty as a serious offense.

In accordance with the System’s mission, campuses within the System have increased cooperative programs with each other to provide better access to courses and programs for students. Students are taking University courses while still in high school, the number of non-traditional students is increasing as is enrollment in on-line and asynchronous courses, and students are increasingly taking courses from multiple campuses during the same semester. All of these factors represent positive change because they represent increased educational opportunity for all students. These factors also require that the University of Maine System adopt this System Academic Integrity Policy to set forth specific and uniform standards of academic integrity that will apply to all courses on all campuses within the System.

Each University campus may adopt procedures for carrying out the provisions of this Policy within the guidelines set forth by this Policy as described below, as long as those campus procedures are consistent with this Policy. Professional schools, such as the School of Law, having a professional code of ethics may adopt additional procedural provisions to be applicable to their own students, as long as they are consistent with this Policy and all procedural requirements of this Policy are met.

Responsibilities:

While the institution offering the course has jurisdiction in matters of academic integrity, the entire academic community shares the responsibility for establishing and maintaining standards of academic integrity. Those in charge of academic tasks have an obligation to make known the standards and expectations of acceptable academic conduct in all academic contexts (e.g. classrooms, online, research, laboratories, clinicals, internships, etc.). Each student has an obligation to know and understand those standards and expectations. While the academic community recognizes that the responsibility for learning and personal conduct is an individual matter, all students, faculty, and staff are expected to help to maintain academic integrity at the University by refusing to participate in, or tolerate, any academic dishonesty.

Violations:

Academic integrity means not lying, cheating, or stealing. To cheat on an examination, to steal words or ideas of another, or to falsify the results of one’s research corrupts the essential process by which knowledge is advanced. Cheating, plagiarism, fabrication of data, giving or receiving unauthorized help
on examinations, and other acts of academic dishonesty are contrary to the academic purposes for
which the University exists.

Violations of academic integrity include any actions that attempt to promote or enhance the academic
standing of any student by dishonest means. Academic integrity means that one’s work is the product of
one’s own effort, and that one neither receives nor gives unauthorized assistance in any assignment.
Because advanced academic work depends on the sharing of information and ideas, academic integrity
at the college level includes rigorous adherence to the conventions for acknowledging one’s use of the
words and ideas of other people.

Put plainly: academic honesty is very important. It is dishonest to cheat on exams, to copy term papers
or to submit papers written by another person, to fabricate experimental results, or to copy parts of
books, articles, or websites into your own papers without putting the copied material in quotation marks
and clearly indicating its source.

Types of Academic Integrity Violations

The following is a listing of most, but not necessarily all, actions that are violations of academic integrity:

I. Plagiarism

Plagiarism is the submission of another’s work as one’s own, without adequate attribution. Plagiarism is
academic theft. Examples include, but are not limited to:

a. Submitting as one’s own work an examination, paper, homework assignment, or other project
(laboratory report, artistic work, computer program, etc.) that was created entirely or partially
by someone else, including works purchased from a vendor.

b. Failure to use quotation marks to signal that one is using another person's precise words.
Even brief phrases must be enclosed in quotation marks.

c. Creating an academically dishonest paraphrase. When paraphrasing (presenting another
person's ideas or information in one's own words), one must find truly one's own way of
expressing the original meaning. Simply inserting synonyms into the source's sentence
structures is plagiarism.

d. Failure to identify the source of quotations and paraphrases. Of course one must cite the
source of quotations; one must also cite the source of ideas and information that is not common
knowledge even when paraphrased (presented in one's own words). Sources include
unpublished as well as published items -- for example, books, articles, material on the Internet,
television programs, instructors' lectures, and people, including other students, friends, and
relatives.
e. Failure to identify the source of the elements of a nonverbal work (for example, a painting, dance, musical composition, or mathematical proof) that are derived from the work of others.

II. Cheating

Cheating is the act or attempted act of deception by which a student seeks to misrepresent that he/she has mastered information on an academic exercise that he/she has not mastered. Cheating is also the use or attempted use of unauthorized assistance in an examination, paper, homework assignment, or other project. Examples include, but are not limited to:

a. Copying answers from another student’s examination.

b. Communicating in any way with another student or a third party during an examination without the permission of the instructor.

c. Using unauthorized materials or devices (including notes, textbooks, calculators, and communication devices) during an examination without the permission of the instructor.

d. Obtaining and/or reading a copy of an examination before its administration without the permission of the instructor.

e. Collaborating with other students or third parties on a take-home examination, paper, homework assignment, or other project without the permission of the instructor.

f. Duplicate work: submitting a paper or other project in more than one course without the permission of the instructors. Students are expected to produce original work for each course. A student should not submit identical or substantially similar papers or projects in two different courses (in the same or different semesters) unless both instructors have given their permission.

III. Fabrication

Fabrication is the use of invented information or the falsification of research or other findings in an academic exercise. Examples include, but are not limited to:

a. Fabrication of a citation: inventing a citation for a research paper or other project.

b. Alteration of an assignment: changing a graded examination, paper, homework assignment, or other project and re-submitting it to the instructor to claim an error in grading.

c. Changing findings, excluding valid data that doesn’t support one’s thesis, or engaging in other similar activities.

IV. Contributing to academic dishonesty

Contributing to academic dishonesty is assisting another student’s academic dishonesty. Examples include, but are not limited to:
a. Writing a paper or other project for another student.

b. Allowing another student to copy from one's examination, paper, homework assignment, or other project.

c. Assisting another student on a take-home examination, paper, homework assignment, or other project if one knows such assistance is not authorized by the instructor.

V. Other forms of dishonest academic conduct

Other forms of dishonest academic conduct include any actions by which one seeks an unfair academic advantage over others. Examples include, but are not limited to:

a. Destroying or altering the academic work of another student.

b. Lying about or otherwise misrepresenting the work of another student.

c. Selling or giving away all or part of an unadministered test including answers to an unadministered test.

d. Bribing any other person to obtain an unadministered test or any information about the test.

e. Entering a building or office for the purpose of obtaining an unadministered test.

f. Continuing to work on an examination or project after the time specified for the student has elapsed.

g. Entering a building or office for the purpose of changing a grade in a grade book, on a test, or on other work for which a grade is given.

h. Changing, altering, or being an accessory to the changing and/or altering of a grade in a grade book, on a test, a “change of grade” form, an electronic record, or other official academic record of the University that relates to grades.

Procedures:

Alleged violations of the Academic Integrity Policy are to be administered through the procedures below as soon as they have been detected. These procedures are designed to create a fair and consistent system for dealing with alleged violations. Students are strongly encouraged to respond to violations of academic integrity that they witness by reporting the violation to the instructor of the course in which it occurred.
While their case is pending or after they have been found in violation of the Academic Integrity Policy, students may not withdraw from the course in which the alleged or established violation occurred.

1. If a faculty member (including an instructor or graduate teaching assistant) has information that a violation of academic integrity may have occurred during an academic term, the faculty member will inform the student in private (either in person or in writing) of the information the faculty member has, the specific incident and the aspect of academic integrity that is alleged to have been violated. The student shall be provided with the opportunity to explain the circumstances and the action. The allegation may be dropped by the faculty member if an explanation by the student is accepted as being adequate.

2. If, after hearing the student’s explanation, the faculty member chooses to continue the complaint, the faculty member will complete an Academic Integrity Violation Form within ten business days in order to document the violation and any informal resolution or any academic sanction(s) imposed by the instructor. This action includes notifying the Student Conduct Officer and the appropriate academic administrator. The Academic Integrity Violation Form can be found on the University of Maine System website, at the following URL:

3. The faculty member will provide the student with a copy of the completed Academic Integrity Violation Form in person or via email.

4. Upon receipt of the Academic Integrity Violation Form, the student has ten business days to:
   
   a. Admit to the violation of the Academic Integrity Policy by signing the appropriate line on the form. If this option is chosen, or if the student does not return the form, the academic sanctions imposed by the instructor automatically apply. The academic administrator will supply a copy of the form to the Student Conduct Officer.

   b. Contest the faculty member’s finding regarding the violation of the Academic Integrity Policy and/or the appropriateness of the imposed sanction(s) by signing the appropriate line on the form and submitting a letter requesting review to the Dean of the College or designated academic administrator. The letter (no more than two pages in length) requesting review shall state the violation(s) and/or sanction(s) to be reviewed and a detailed rationale for the request for review.

Sanctions:

A student who admits to being responsible or who is found to be responsible for a violation of academic integrity will be subject to appropriate academic sanctions. Academic sanctions will be determined in accordance with the procedures outlined below. The exact academic sanction will depend on the particular circumstances of each individual case. Academic sanctions imposed under this policy are completely separate and independent from any disciplinary action, which may be taken against the student under the University of Maine System Student Conduct Code. A student may receive both an academic sanction and a disciplinary sanction for the same act of academic dishonesty. A disciplinary
sanction may only be imposed upon the student in accordance with the University of Maine System
Student Conduct Code.

Repeated violations or those deemed sufficiently serious may be referred directly to the Student
Conduct Officer for appropriate action under the Student Conduct Code. Whether an allegation of
academic misconduct is “sufficiently serious” will be determined by the College Dean or designated
academic administrator in consultation with the Chief Student Affairs Officer.

The following is a list of possible academic sanctions that may be imposed upon students for violations
of academic integrity. This list shall not be taken to be exhaustive and may be modified or enlarged to
meet particular circumstances in any given situation. A combination of two or more of these academic
sanctions may be imposed when justified by the type of violation.

1. The faculty member can impose appropriate grade penalties up to and including F or zero grades on
an assignment, exam or paper, and/or in one or more courses. Faculty members may be permitted to
exercise discretion in prescribing lesser penalties or additional academic tasks appropriate to allow the
student to complete a course and thereby receive a grade representing demonstrated knowledge of the
course.

2. The faculty member, the Dean, or other appropriate academic administrator may impose other
academic actions as may be appropriate (e.g. referral to the academic program for consideration of
continuance in that program).

Further Procedures:

1. If a student contests the faculty member’s finding, a hearing will be scheduled before the Dean of the
College or, in the absence of a Dean of the College, another academic administrator designated by the
Chief Academic Officer or their designee.

   a. Within seven business days of receipt of the letter requesting review, the Dean of the College
      or designated academic administrator will notify the student and faculty member of the date,
      place, and time of the hearing.

   b. Prior to the hearing, the Dean of the College or designated academic administrator will review
      the Academic Integrity Violation Form, information provided by the faculty member, and written
      and verbal statements provided by the student, the faculty member, and any witnesses. At the
      hearing, the student may ask questions of the faculty member or other witnesses through the
      dean or designated academic administrator.

   c. The reporting faculty member will attend the hearing, and can ask questions of the student or
      other witnesses through the dean or designated academic administrator.

   d. Students may bring a support person with them to the hearing, but the support person shall
      not be permitted to speak during the hearing except quietly to the student.
e. The Dean of the College or designated academic administrator will make a determination regarding the request for review within two weeks of the hearing. The outcome of the review may result in a higher sanction, lower sanction, the same sanction, or no sanction at all being imposed. The Dean or designated academic administrator will notify the student and faculty member in writing of their final decision and provide a copy to the Student Conduct Officer.

2. The student or faculty member may each request a review of the Dean’s or designated academic administrator’s decision by submitting a letter (no more than two pages) requesting review of their decision to the Dean or designated academic administrator no later than two weeks after receipt of the Dean’s or designated academic administrator’s decision. The letter shall state the violation(s) and/or sanction(s) to be reviewed and a detailed rationale for the request for review. If either party requests a review, the other party shall be provided with a copy of the request for review letter. The review of the Dean’s or designated academic administrator’s decision shall be a paper review and shall be conducted by an Academic Appeals Committee or the Chief Academic Officer (CAO). If a Committee is appointed, it must have an odd number of members and include at least one student and two faculty members. The Committee or CAO will consider all written information provided by the faculty member, all written information provided by the student and any witnesses and the Dean’s or designated academic administrator’s written decision. The Committee (by a simple majority) or CAO will then make a determination regarding the request for review within two weeks of receiving the request. The outcome of the review may result in a higher sanction, lower sanction, the same sanction, or no sanction at all being imposed. The decision of the Committee or CAO will be the final decision, and is not subject to review. The Committee or CAO will notify the student, the faculty member and the Dean or designated academic administrator in writing of their final decision and provide a copy to the Student Conduct Officer.

3. Minor Violations: Faculty members may feel that certain violations, based either upon the nature of the violation or its circumstance, warrant an informal warning rather than formal action. As with formal violations, the instructor must discuss the alleged violation with the student either in person or in writing. If the instructor finds there was a minor violation, the instructor may give the student an informal warning or require the student to redo the assignment. A Violations Form should still be completed by the instructor with the infraction and sanction documented. The instructor will provide the student and the Student Conduct Officer with a copy of the form.

After two minor violation reports from any institution in the UMS, the Student Conduct Officer(s) will consult with Academic Deans or other relevant academic administrators and reporting faculty members to determine if a more serious academic sanction should be imposed under this policy and whether a formal student conduct charge under the Student Conduct Code should be filed against the student.

4. Repeated academic violations or those deemed to be of sufficient severity by the faculty member or Dean of the College (or other appropriate academic administrator) may be considered disciplinary in nature and may be referred directly to the Student Conduct Officer for formal action under the Student Conduct Code. The faculty member may proceed with the academic integrity process under this policy at the same time as an action under the Conduct Code is proceeding. Sanctions under the Conduct Code may include, but are not limited to, ineligibility for all future academic honors and awards, departmental
and university awards, and graduation honors in addition to the appropriate academic sanctions. Sanctions for violation of the Student Conduct Code may be found in section IV. of the Student Conduct Code which may be found at the following URL:


The maximum sanction imposed under the Conduct Code will be dismissal from the university and, for students whose violation is determined after graduation, revocation of the degree. Disciplinary action taken under the Student Conduct Code is independent of and may be taken in addition to an academic sanction imposed under this Policy.

**Resources and Related Policies and Forms:**

Academic Integrity Violation Form

University of Maine System Student Conduct Code

**Date Issued:** September 1, 2020
Draft Proposed Changes to Board Policy 310 - Tenure

Effective: 6/7/70
Last Revised: 7/9/90, 4/XX/20

Procedures for Awarding Granting Tenure

The decision to grant or not to grant tenure rests solely with the Board of Trustees. Nothing in these guidelines, or in the criteria developed under these guidelines, or in the approval of the criteria, shall limit or restrict that discretionary authority of the Board.

The Board exercises its authority to grant tenure in two primary ways: by approving the filling of any tenure-track faculty line, and by considering the grant of tenure for faculty who have completed their probationary periods with a recommendation from their respective university that they be granted tenure.

Draft Proposed Changes to Administrative Procedures for Granting Tenure

Guidelines:

1. University Presidents seeking either new or replacement tenure lines must request approval to fill the lines from the Academic and Student Affairs Committee of the Board. The ASA Committee will review such requests in a timely fashion and forward its recommendations to the Board of Trustees for which tenured faculty lines should be filled.

2. Each new appointee should receive a letter of appointment that includes, as a minimum, such data as:
   a. academic rank and/or title of position;
   b. general duties to be performed;
   c. beginning and ending dates of appointment;
   d. type of appointment – probationary, temporary;
   e. indication of amount, if any, or prior service to be counted toward probationary period;
   f. salary.

3. The specific assignment of prior credit will be part of the letter received at the time of initial appointment. The time credited as probationary years with regard to service at other institutions of higher education, whether units of universities in the University of Maine System or not, shall not exceed three years.

4. A probationary appointment shall not exceed six consecutive academic years in a full-time position on a single campus university. A leave of absence, sabbatical, or teacher improvement assignment shall not constitute a break in continuous service, nor shall it be included in the six-year period without prior written agreement between the faculty member and the President at the time of the request.
5. Individuals on probationary appointments shall normally complete the full term, i.e., the sixth year, before the Board *awards* considers granting tenure.

6. At the time of initial appointment, exceptionally qualified individuals may be *awarded granted* tenure at the rank of full professor, with the approval of the appointment by the Trustees. In other cases, as the *institutions universities* deem appropriate, full professors may receive an initial appointment without tenure but, with Trustee approval at the time of their appointment, may be given the opportunity to apply for tenure during the second year of their appointment.

7. Tenure shall not be awarded ordinarily below the associate professor level or its equivalent.

8. Each *institution university* shall develop its criteria for promotion and tenure, and, once developed, a statement of such criteria shall be forwarded to the Chancellor and the Trustees for review and approval and thereafter be made available by the *campus university* administration to all faculty members in the *institution university*. These criteria shall include reference to teaching, public service, research, and scholarship activities as are appropriate to the *University System* and *institution university* missions. Criteria may vary among units or departments, but shall be in accord with the overall *campus university* criteria.

9. Student input is a desirable and meaningful part of faculty evaluation, and the contribution students make to the evaluative process is essential to the improvement of instruction. Student evaluations are to be secured on a regular, systematic, and equitable basis and made part of the official record.

10. Evidence should be obtained from outside the *institution university* and from outside the University of Maine System, as appropriate, regarding the scholarship and research of candidates for tenure.

11. Tenured and non-tenured faculty, as well as nontenured faculty, shall be reviewed on an annual basis. Each *institution university* shall develop its own criteria for faculty evaluation, and, once developed, a statement of such criteria shall be forwarded to the Chancellor and the Trustees for review and approval and thereafter be made available by the *campus university* administration to all faculty members in the *institution university*.

12. The tenure guidelines provide the policy framework for the process to be followed at each *institution university*. Where exceptions are sought, it is necessary that the *campus university* present its request in detail, including the rationale for the exception, to the Chancellor and the Board of Trustees.

13. Tenure may be transferable among the *institutions universities* of the University of Maine System at the discretion of the Board of Trustees, consistent with the tenure policies of the *institution university* to which transfer is sought.
14. Senior administrators shall not be awarded tenure as part of their administration contracts. However, the Trustees will consider, on an exceptional basis, a nomination to tenure for an academic dean, when presented under these conditions:

   ± a. the nominee will have been accepted by an appropriate academic department and accorded faculty rank, at the time of appointment as academic dean;

   ± b. the nomination will have been duly evaluated through the campus university tenure processes.

15. A chief academic officer or other university employee in a position at the level of vice president may be considered for tenure to be effective upon assuming a full-time faculty appointment after completion of service in the administrative position. The employee must have been accepted by an appropriate academic department and accorded faculty rank at the time of appointment to the administrative position. Evaluation for tenure will occur under the university’s tenure process at the time of initial appointment, or, with approval of the President, during the final year of service in the administrative position. The final decision regarding the award grant of tenure is made by the Board of Trustees. If tenure is granted, it will not be effective until the date the employee assumes the full-time faculty position and the term in the administrative position ends.

See: Policy Manual Section 310: Tenure
University of Maine
System Board of Trustees

Academic and Student Affairs Committee
Duties and Responsibilities

Committee established: 1993
Approved by the Board of Trustees: 5/23/2011; 9/23/2013

The Academic and Student Affairs Committee shall have oversight of the following:
- curricular aspects of the University of Maine System (System), including the articulation of the academic mission of the System, the quality of the faculty, the quality of the academic program including but not limited to program delivery, degree completion, etc, and activities that support the academic mission of the System;
- all activities related to all populations of students including student recruitment, retention, student success, and all other activities and initiatives

Committee Authority

Academic Affairs:
- Bylaws – Section 3
- Board of Trustee Policy Manual
  - Section 213 – Honorary Degrees
  - Section 300 – Academic Affairs
  - Section 600 – Human Subject Review
  - Section 1000 – Review of Non-Academic Programs

Student Affairs:
- Bylaws – Section 3
- Board of Trustee Policy Manual
  - Section 500 – Student Affairs

The primary duties and responsibilities of the Committee shall be to:

Academic Affairs:

Have oversight of the shaping and reviewing of policies affecting the overall curricular program.
1. Review and make recommendations to the Board on the approval, suspension or elimination of degree programs at the universities.
2. Have oversight of the academic support programs, including faculty and academic staff development.
3. Make recommendations to the Board of Trustees with respect to promotion and awarding granting of tenure, including the approval of proposed tenure-track faculty lines requested by the Presidents of the universities.
4. Review of periodic reports from the campuses reflecting on philosophy, organization, conduct, and funding of their athletic programs.
5. The Committee is responsible for sending the following agenda items to the Board of Trustees for review or approval:
   a. Creation or Elimination of an Academic Program
   b. University Mission Statements
c. Awarding of Academic Degrees
d. Organization and Establishment of Major Units
e. Named Chairs and Professorships and University Professorships
f. Tenure
g. Academic Calendar
h. Diversity Plans
i. Honorary Degree Nominations

Student Affairs:

1. At least every three years ensure to conduct a review of the UMS Student Conduct Code and recommend for approval.
2. The Committee also reviews other student codes, behaviors, or ethics (i.e., student athletes).
3. The Committee is responsible for sending the following agenda items to the Board of Trustees for review or approval
   a. Recruitment and Admissions Updates
   b. Discussions Regarding Student Success
   c. Retention Strategies
   d. Financial Aid Discussions
   e. UMS Student Conduct Code
   f. Enrollment Reports
4. All Committee actions shall be reported to the Board for approval.

Membership of the Committee

The Academic and Student Affairs Committee shall be made up of at least three voting members of the Board of Trustees. Typically, the Chair and Vice-Chair of the Board and the Chancellor shall be ex-officio members, but the Chancellor shall have no vote. Faculty and Student Representatives to the Board may be members of the Academic and Student Affairs Committee, but have no vote.

Meetings

Meetings of the Committee ordinarily shall be called by the Committee Chair, but may be called by the Chair of the Board or a majority of the Committee.

Staff to the Committee

The Academic and Student Affairs Committee shall be staffed by the Vice Chancellor for Academic Affairs and the Chief Student Affairs Officer.
## Executive Summary

The University of Maine at Machias (UMM) is seeking permission to offer a Bachelor of Science in Environmental Geographic Information Systems (BS in EGIS). As described in the included proposal, the proposed program will meet growing demand for geographic information systems (GIS) professionals in Maine and beyond, offering students a structured program core and three concentrations, providing a broad background knowledge and skills in the field and options for specialization. Students may complete the program core, Community Applications and Spatial Data Science concentrations mostly on campus or entirely online. Courses in the Ecological Applications concentration involve field and laboratory, so that concentration will not be accessible entirely online. The program involves multiple courses from other UMS campuses and builds on close collaborations through the Maine Geospatial Institute.

<table>
<thead>
<tr>
<th>Academic Year (Fall)</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected new university enrollment due to this program</td>
<td>5</td>
<td>19 (+14)</td>
<td>36 (+17)</td>
<td>56 (+30)</td>
</tr>
<tr>
<td>UMM GIS courses already provide valuable instruction to over 100 students per year at UMM, UM and other UMS campuses. The new program will offer an additional pathway for those wishing to pursue GIS, and it is stackable with existing certificates, including a new early college GIS certificate. The new program will also include a new online course, GIS 102 Our Digital Earth, an earth systems science course that meets general education requirements and will be available to students at any UMS campus.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated revenue beyond tuition and fees, if any</td>
<td>$2000</td>
<td>$3000</td>
<td>$4000</td>
<td>$5000</td>
</tr>
<tr>
<td>The UMM GIS Service Center has a long history of engaging students in service projects through contracts, grants and partnerships. This revenue generates, on average $4,000 per year to support GIS courses and student internships, and we expect this to continue and expand with an expanded program.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New FTE faculty and/or staff necessary for the degree program</td>
<td>+0.1</td>
<td>+0.1</td>
<td>+1.1</td>
<td>+1.1</td>
</tr>
<tr>
<td>Total new employee salary and benefits</td>
<td>$4000</td>
<td>$4000</td>
<td>$82500</td>
<td>$82500</td>
</tr>
<tr>
<td>Total other expenses (supplies, renovations, etc.)</td>
<td>$4000</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
</tr>
</tbody>
</table>
If new tuition, fees, and other revenue generated by this program will not fully offset the expenses necessary to deliver the program, provide a brief justification for adding the program and explain how the expenses of the program will be covered.

Startup costs and new adjunct faculty will be entirely offset in the first year by revenue generated by students in other majors who take GIS courses at UMM. Costs are also kept to a minimum because many courses will be cross listed with offerings from other UMS campuses through our partnership with the Maine Geospatial Institute, and some instruction will be provided by a graduate teaching assistant covered by the UMaine Graduate School. We expect that as enrollment increases in year 3 we will need to hire one new tenure track faculty.
Date: April 17, 2020

To: Dannel Malloy, Chancellor
University of Maine System (UMS)

From: Dr. Robert Placido, VCAA

The University of Maine

Regarding: UMM Academic Program Proposal: B.S. Environmental GIS

Please find the attached program proposal from the University of Maine at Machias (UMM) to offer a B.S. Environmental Geographic Information Science (BSGIS). The attached material includes a letter of support from Head of Campus and Vice President of Academic Affairs Daniel Quals, as well as the full program proposal. The importance of GIS has become evident during the COVID19 crisis, as leaders across the country make decisions on the basis of the GIS Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. There are currently 2,153 GIS jobs available in New England, and this demand is expected to grow by 10% nationally.

The proposed B.S. Environmental Geographic Information Science was reviewed and recommended by the Chief Academic Officers Council (CAOC) on April 16, 2020. I am pleased to also recommend this program for your approval.

<table>
<thead>
<tr>
<th>I approve</th>
<th>I do not approve for the reasons listed below</th>
<th>Additional information needed for a decision</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
<td>Approval of UMM BSGIS</td>
</tr>
</tbody>
</table>

Chancellor Dannel Malloy

Date: 4.22.20
April 21, 2020

Dr. Robert Placido, Vice Chancellor of Academic Affairs
University of Maine System
259 Estabrooke Hall
Orono, ME 04469

Dear Dr. Placido:

We write to request your consideration of a new academic program proposal from the University of Maine at Machias. The proposed Bachelor of Science degree in Environmental Geographic Information Science, to be housed in the Environmental and Biological Sciences Division at the University of Maine at Machias. This program relies heavily on UMM’s existing GIS certificates and the UMS Maine Geospatial Institute. For example, the Spatial Data Science concentration will benefit from the University of Maine at Augusta’s expertise in this area. This program is also our attempt to revise the Environmental Studies program due to being consistently identified as a program for examination.

The proposal has been reviewed and approved by the Division of Environmental and Biological Sciences, the Program Review and Evaluation Committee (PREC) and the UMM faculty assembly. We hereby submit the proposal for review and approval by you, the University of Maine System chief academic officers, the Chancellor and the Board of Trustees.

We thank you for any consideration and will be glad to address any questions or concerns you may have.

Dr. Faye Gilbert
Interim Provost, University of Maine

Dr. Joan Ferrini-Mundy
President, University of Maine
Dr. Robert Placido  
Vice Chancellor of Academic Affairs  
University of Maine System  
Office of the Vice Chancellor of Academic Affairs  
15 Estabrooke Drive, 259 Estabrooke Hall  
Orono, ME 04469  

April 10, 2020

Dear Vice Chancellor Placido,

Please find attached a proposal for a new degree program, B.S. in Environmental Geographic Information Science, to be housed in the Environmental and Biological Sciences Division at the University of Maine at Machias. The proposal has been reviewed and approved by the Division of Environmental and Biological Sciences, the Program Review and Evaluation Committee (PREC) and the UMM faculty assembly. We hereby submit the proposal for review and approval by you, the University of Maine System chief academic officers, the Chancellor and the Board of Trustees.

Signed:

_______________________________________________
Dr. Tora Johnson  
Chair, UMM Division of Environmental and Biological Sciences

_______________________________________________
Dr. Daniel Qualls  
UMM Head of Campus and Vice President of Academic Affairs
UNIVERSITY OF MAINE SYSTEM NEW PROGRAM PROPOSAL

I. Full program title: B.S. in Environmental Geographic Information Science

II. Program objectives

a. Narrative description of program rationale

With National Science Foundation support (NSF CCIL1 Award #0126639) in collaboration with other UMS partners, the University of Maine at Machias established a geographic information systems (GIS) laboratory and ran its first GIS courses in 2002. Another NSF grant awarded in 2007 (NSF ATE Award #0802417) supported an expansion of the laboratory and allowed UMM to begin offering certificate and minor programs to meet growing, well-documented workforce demand. The GIS concentration became a popular option for students enrolled in the Environmental Studies program. UMM’s GIS courses and programs have since grown to serve more than 100 students per year using highly innovative pedagogical approaches and pioneering online and blended instructional methods. Our courses now provide introductory and advanced instruction to undergraduates across the system and offer incumbent workers important training opportunities. Students in UMM GIS courses conduct service projects that have significant impact on communities in the Downeast Region and across the state (see Appendix A for examples of such projects and awards earned by the program and its faculty).

Conversely, the Environmental Studies at UMM program has seen declining enrollment. For several years it has been on the UMS list of programs for evaluation because of the small number of matriculated and graduating students. Investigation into other Environmental Studies programs across the northeastern US and the job prospects for those graduates revealed 136 competing programs, most of which have minimal enrollment, indicating a saturated market. In 2018, these institutions produced far more graduates than available entry-level jobs in the field (see table below). Clearly UMM is at a competitive disadvantage to recruit students, and graduates of the UMM program will face stiff competition in securing jobs in their field. It should be noted that in a recent survey conducted for this program review 40% of UMM alumni reported being employed full- or part-time in the field; many of those employed cited GIS training received at UMM as a key reason they were successful in finding employment. A program review of the Environmental Studies program this year pointed to the need to reinvest in an area with better job prospects for graduates and less competition for admissions.

Among the environmental-related fields that UMM has the expertise to support with projected job growth, geographic information systems (GIS) specialists is an area of great potential. The field of geographic information systems has been categorized by the US Department of Labor as a high-growth industry, and there are few competing institutions with four-year GIS programs in the northeastern US (see “program need” below). The UMM GIS program currently enjoys robust enrollment. Based on this information the Environmental and Biological Sciences Division is proposing to suspend the Environmental Studies degree and create a B.S. in Environmental GIS (EGIS) with three concentrations. The new program would be part of a shift at UMM toward workforce oriented education aimed at high-growth careers needed in Maine, and it would build on strong existing collaborations among UMS geospatial faculty through the Maine Geospatial Institute (MGI).
b. **The relationship between the proposed program and the Maine Geospatial Institute**

Building a four-year program that leverages faculty expertise and capacity on all UMS campuses was among the mid-term goals established by MGI when it was formed two years ago. Each campus has unique faculty specializations and areas of focus, so a program that integrated all of them would provide a comprehensive program with diverse curriculum options. The need for UMM to shift its curriculum to increase enrollment and better serve the workforce provided the opportunity to pilot such a model.

While MGI itself has no intention of administering the program, it provides a forum to facilitate collaboration, and we anticipate greater integration among programs as we continue to pursue shared goals and the system continues to remove barriers to collaboration. Even though there are GIS courses, minors and/or certificate programs at all seven UMS campuses, no UMS campus alone has the capacity to offer a four-year GIS program. However, the collaboration among the seven member campuses of the Maine Geospatial Institute has made it possible to build a program collaboratively, and such collaborations are an explicit goal set by the Chancellor’s office and the Board of Trustees.

The MGI executive committee supported and provided feedback for the development of this proposal and is committed to facilitating collaboration in support of the program over the long term.

The proposed EGIS program at UMM will leverage this collaboration and incorporate courses from other UMS campuses to enhance our capacity to offer a comprehensive program and provide exciting and robust learning opportunities for students. The following are MGI-supported collaborative elements of the proposed program:

- UMA has a strong data science program and faculty who are knowledgeable in spatial information science, so UMA data science courses are required in the core of the proposed program, form the backbone of the Spatial Data Science concentration, and provide electives to broaden options for students in the major.
- UMF will offer online instruction for two courses that will be key to the Community Applications concentration.
- Geography and GIS field courses at USM and UMF will be available as electives for UMM EGIS students.
- Exemplary EGIS students will be able to apply to the UM Spatial Information Engineering, Spatial Informatics, and (proposed) Data Science Engineering 4+1 programs in their junior year, allowing them to take a five-course sequence of graduate courses that count as electives in their program before transferring to UM to complete a master’s degree in one year after graduation.
- A group of faculty from USM, UM, UMPI and UMFK are developing course work in operating and collecting data using drones designed to be available to students across the system, and this will be incorporated into the proposed program when it is implemented.
- The UM Graduate School has committed to providing a two-year graduate teaching assistantship to help support GIS instruction at UMM beginning in the fall of 2020.

c. **General program goals**

The proposed EGIS program is structured with a program core and three concentrations. The program core provides all students with broad background knowledge. The concentrations point students
towards more specific career paths with the field of environmental GIS. The program is aligned with the US Department of Labor Geospatial Technology Competency Model and informed by the GeoTech Center for Excellence model courses and programs.

The Ecological Applications concentration prepares students for careers or graduate study in the biological and ecological sciences and conservation. Potential employers are state and federal agencies, tribes, resource extraction industries, and non-profit organizations. Because of the nature of the training required, this concentration is not available as an all-online program.

The Community Applications concentration prepares students for careers or graduate study in planning, land conservation, community resilience and sustainability. This concentration is available in a fully online format.

The Spatial Data Science concentration prepares students for careers or graduate studies in spatial data science, GIS application development, and geomatics.

d. Specific student learning outcomes or behavioral objectives

Upon completion of the Environmental GIS program core and the UMM General Education requirements, students will:

- demonstrate geographic, environmental and spatial awareness of the human and natural world through geospatial inquiry and hypothesis-driven analysis
- demonstrate proficiency in the use of GIS applications through:
  - the application of GIS analysis to geospatial problems and/or research questions
  - creating GIS tools and cartographic visualizations that are fit-for-purpose
  - troubleshooting problems
- demonstrate proficiency in multiple modes of communication with professional, management, and lay audiences, including:
  - written and verbal communication
  - graphic and cartographic design
  - data visualization
- be able to create or acquire data using appropriate technologies and applying best practices for processing, documentation, quality control and critical assessment
- be able to evaluate the qualitative and quantitative uncertainty and limitations of data
- demonstrate proficiency with database management, data modeling, and query
- demonstrate basic proficiency in GIS application development using at least one widely used programming language
- execute a project applying geospatial technology to a specific problem of the natural or human world in collaboration with a community partner through a capstone project
- be able to critically evaluate and creatively solve problems relating to geospatial questions and environmental issues

Upon completion of the Ecological Applications concentration student will:

- demonstrate an understanding of biological and ecological concepts
  - apply knowledge of ecological systems to evaluate data used in GIS projects and the maps produced
• demonstrate knowledge of a particular group of organisms and the ability to use that group as a model for understanding other groups
• demonstrate proficiency in the use of advanced GIS tools and applications to ask and answer questions about ecological systems

Upon completion of the Community Applications concentration student will:
• demonstrate proficiency in common applications of geospatial technology for communities, such as land use planning, land records, environmental decision making, stormwater and utility management, etc.
• demonstrate an understanding of socioeconomic, cultural and geographic factors affecting community resilience
• demonstrate an understanding of local and regional community governance and management practices

Upon completion of the Spatial Data Science concentration student will:
• demonstrate basic proficiency with standard query language (SQL)
• demonstrate proficiency in differential calculus
• demonstrate proficiency in spatio-temporal information analysis

Program Competency Domains:
• Geographic, environmental and spatial awareness and inquiry
• GIS applications
• Data visualization, graphic and cartographic design
• Data acquisition, processing, documentation, and quality control
• Computer information science and database management
• Basic application development using at least one widely used programming language
• Communication
• Project management
• Problem solving and critical thinking

III. Evidence of program need:

A 2011 study of Maine’s geospatial workforce needs by Colgan, Johnson, Valentine and Bampton documented a growing need for geospatial professionals in Maine, and an aging workforce. The majority of the geospatial workforce at the time was working in environmentally-related jobs requiring baccalaureate or master’s degrees, and about a third were nearing retirement. This study also showed a growing need for data science and database management expertise in Maine’s geospatial workforce, as well as a demand for online education opportunities in the field. The retirements predicted in the 2011 study have begun, and employers are now seeking well-trained workers with updated skills to fill the vacated positions. Anecdotally, we have heard that many employers are hiring qualified professionals from out of state because of a lack of graduates here in Maine.

The US Department of Labor classifies geographic information systems science and technology as a “bright outlook” field. In 2018 there were 2,153 job openings and just 1,594 graduates in New England, according to Burning Glass. In addition, demand in the field is expected to increase by 9% from 2016 to 2026. There are only 10 institutions in the northeast offering four-year degrees in GIS, and none in Maine.
According to the Department of Labor’s O*Net database, employment in the field is expected to grow by 10% nationally and by 4% in Maine between 2016 and 2026. So, there is a growing demand for workers in this field even beyond Maine.

A recent study of GIS jobs in the US found that bachelor’s degrees in GIS were the most desired degrees for technicians and analysts in the field. However, Maine currently does not currently have a four-year degree program in GIS.

Select geospatial professionals in Maine and beyond were consulted in the development of this proposed program. In addition to providing valuable input, they all expressed support for the idea and/or the need for such a program. The following are excerpts from some of their comments:

“This thanks for sharing this. I read through the curriculum and it strikes me as quite complete – I think any student who completes this course work would be very prepared for a job in environmental GIS.”
- Erik Martin, Spatial Ecologist, The Nature Conservancy

“This looks like a great proposal, and I think that moving in this direction is a good move for students and for the program.”
- Jeremy Gabrielson, Senior Conservation and Community Planner, Maine Coast Heritage Trust, and former UMM GIS student

“I think this is something the University needs and would be very complimentary to the [Maine Geospatial Institute]. I like the approach and the cross campus tie-ins to make it easier for students to pursue regardless of where they are enrolled.”
- Joe Young, Maine GeoLibrary Board and retired director of the Maine Office of GIS

“I think this is great. The ability to concentrate in geospatial science is excellent. Of course I am looking at it from my perspective as a software company but increasing the GIS technical skill set is huge.”
- Patrick Cunningham, President & CEO, Blue Marble Geographics

“Overall, I think it’s a great idea! I like the contrast in the three different concentrations. Although I work for a wildlife agency, I find the Spatial Data Science concentration to be the most closely related to my type of work and the skills I am pursuing in my current position…. To answer your big question, yes, I think that students coming out of this program as it is currently proposed would be prepared for the geospatial workforce.”
- Michael Lachance Conservation Data Specialist at MassWildlife and UMM Graduate in ES with GIS Concentration

“I think this program sounds very interesting. What I repeatedly hear from academic institutions looking at updating their curricula and also from companies hiring new graduates is that there is a major demand for skills in basic programming/scripting (python, javascript, etc.) and also in databases and enterprise level database management. It looks like both of these are highlighted in this plan.”
- Katrina Schweikert, Product Manager, Blue Marble Geographics
“[This] could be something that will turn heads throughout academia and beyond. I say ‘bravo’ and I wish you all success with this!”
- Joseph J. Kerski, Education Manager, Esri, Inc.

IV. **Program Overview.** The opening paragraph will indicate the holistic nature of the program design in narrative form with attention to such items as listed below but not limited to these:

Environmental GIS is, by nature, an interdisciplinary field, so the proposed program core incorporates coursework in geospatial technology, data acquisition, environmental studies, geographic inquiry, computer and data science, programming, and design. Each course in the program is included to address skills, knowledge and competencies outlined in the [US Department of Labor Geospatial Technology Competency Model](#) and emerging workforce needs as identified by the US Department of Labor and workforce research. Courses incorporate hands-on, applied projects that not only reinforce course skills and competencies, they also teach soft skills required for career success such as critical thinking, project management, oral and written professional communication, ethics, initiative, etc.

The program concentrations prepare students for specific sectors of the geospatial workforce, providing both specialized knowledge and advanced technical skills:

**Ecological Applications concentration** (18 to 20 cr) includes a thorough foundation in biological and ecological sciences and the GIS tools and practices used in natural science fields. Because this pathway includes multiple field courses, it is not available in an online-only format.

**Community Applications concentration** (18 cr) combines coursework in community studies and related social sciences with tools and practices used in community and regional planning, government, and land records management. This pathway is available in both on-campus and online formats.

**Spatial Data Science concentration** (17 to 18 cr) incorporates quantitative analysis and programming skills necessary for work in application development and research or conservation analytics. This pathway is available in both on-campus and online formats.

a. **Outline of required and/or elective courses**

**Program Core (55 - 57 cr)**

*Note: Program includes 19 to 20 credits in gen ed core.*

**First Year Seminar**
(Select one; waived for transfers with 15 or more credits)

- FYS 101 - Science Bridge (1)
- ENV 102S - Atlantic Salmon Conservation Projects (2)
- BIO 114 - Careers in Fisheries & Wildlife Biology (2)
- GIS 1XX - Intro to Geospatial Careers (online) (1)

**Environment & GIS**

- ENV 112 – Environmental Issues (3)*
- ENV 213 – Environmental Ethics and Values (3)*
- Scientific Inquiry (4)*
(Select one)

- BIO 117 – This is Life!
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELA 113</td>
<td>Natural Environments</td>
<td>3</td>
</tr>
<tr>
<td>GIS 1XX</td>
<td>Our Digital Earth</td>
<td>3</td>
</tr>
<tr>
<td>GIS 204</td>
<td>Intro to GPS (change to Intro to Satellite Positioning &amp; Navigation Systems)</td>
<td>2</td>
</tr>
<tr>
<td>GIS 300</td>
<td>Geographic Information Systems I</td>
<td>4</td>
</tr>
<tr>
<td>GIS 400</td>
<td>Geographic Information Systems II</td>
<td>4</td>
</tr>
<tr>
<td>GIS 420</td>
<td>Remote Sensing and Image Analysis</td>
<td>4</td>
</tr>
<tr>
<td>GIS 428</td>
<td>Web-Based Maps, Applications &amp; Services</td>
<td>3</td>
</tr>
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**Geography**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GEO 101</td>
<td>Introduction to Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEO Elective</td>
<td>Choose one GEO course 200 level or above</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: These can be taken through UMM, USM, UMF, or UM. USM and UMF frequently offer geography field courses that make heavy use of GIS & GPS and would make attractive electives. Also, this requirement may be met by UM graduate courses in Spatial Information Engineering, Spatial Informatics, and (proposed) Data Science Engineering 4+1 programs

**Computer & Data Science**

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<td>CIS 150</td>
<td>Introduction to Data Science (UMA)</td>
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<tr>
<td>CIS 255</td>
<td>Database Design (UMA)</td>
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</tr>
<tr>
<td>GIS 2XX</td>
<td>Python Scripting for GIS (UMA)</td>
<td>3</td>
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</table>

**Design & Communication**

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</thead>
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<td>ART 101</td>
<td>2D Fundamentals of Art</td>
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<tr>
<td>ART 106</td>
<td>Art Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ART 213</td>
<td>Graphic Design I</td>
<td>3</td>
</tr>
<tr>
<td>ENV 224</td>
<td>Scientific Writing and Presentation</td>
<td>2 or 3</td>
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**GIS Capstone**

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</thead>
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<tr>
<td>GIS 424</td>
<td>Advanced Projects in GIS</td>
<td>4</td>
</tr>
<tr>
<td>GIS 426</td>
<td>Community Applications in GIS</td>
<td>4</td>
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</table>

**CONCENTRATIONS (choose one)**

**Ecological Applications Concentration**

(No ONLINE PATHWAY)

<table>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
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<td>Animal Life (BIO 117 is a prereq)</td>
<td>2</td>
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<tr>
<td>BIO 119</td>
<td>Plant Life (BIO 117 is a prereq)</td>
<td>2</td>
</tr>
<tr>
<td>BIO 245</td>
<td>General Ecology</td>
<td>4</td>
</tr>
<tr>
<td>MAT 215</td>
<td>Applied Statistics</td>
<td>4*</td>
</tr>
<tr>
<td>GIS 431</td>
<td>Introduction to Geostatistics</td>
<td>4</td>
</tr>
</tbody>
</table>

Choose one:
BIO 227 - Invertebrate Zoology 4
ENV 103 - Oceanography 4
BIO 212 - Ornithology 4
BIO 216 - Mammalogy 4
BIO 223 - Marine Mammals & Pelagic Birds 4
BIO 229 – Plant Systematics 4
BIO 313 - Ichthyology 4
BIO 333 – Plant Ecology 4
BIO 235 - Introduction to Fisheries & Wildlife Management 3
REM 412 - Interpretation of Natural & Cultural Resources (Jr standing) 3

Choose one:
GIS 312 - Municipal Applications of GIS (UMM) 3
CIS 449 - R (UMA) 3
CIS 355 - Sensors (UMA)
GEO 340 - Digital Mapping (USM) 4
GEO 445 - Drone Mapping (USM) 3
Other GEO or GIS course, as approved by division 3 or 4
Options, including field courses, available through UM, UMF & USM. Also, this requirement may be met by UM graduate courses in Spatial Information Engineering, Spatial Informatics, and (proposed) Data Science Engineering 4+1 programs

Community Applications Concentration 18 cr
(ON-CAMPUS & ONLINE PATHWAYS)

CMY 101 - Introduction to Community Studies 3
GIS 312 - Municipal Applications of GIS (UMM) 3
MAT 113 - Introduction to Statistics 3*
OR
MAT 124 - Statistics for Social Sciences 3*
GEO 343 Community Planning (UMF) 3
OR
GEO 340 Sustainable Land Use (UMF) 3

Choose one:
GIS 429 - Geographic Information Systems Internship (UMM) 3
CIS 352 - Data Visualization (UMA) 3
GEO 445 - Drone Mapping (USM) 3
Other GEO or GIS course, as approved by division 3 or 4
Options, including field courses, available through UM, UMF & USM. Also, this requirement may be met by UM graduate courses in Spatial Information Engineering, Spatial Informatics, and (proposed) Data Science Engineering 4+1 programs

Choose one:
SOC 101 – Introduction to Sociology*
SOC 301 - Rural Sociology 3
ANT 212 - Environmental Anthropology 3
BUS 111 - Introduction to Business & Entrepreneurship 3
ECO 223 - Environmental Economics 3
MAN 301 - Management 3
POS 305 - Environmental Policy 3
REM 412 - Interpretation of Natural & Cultural Resources (Jr standing) 3

**Spatial Data Science Concentration**

*(ON-CAMPUS & ONLINE PATHWAYS)*

CIS 218 - Introduction to SQL (UMA) 3
MAT 126 - Calculus I 4*
GIS 431 - Introduction to Geostatistics (UMM) 4
CIS 353 - Human Computer Interaction/User Design (UMA) 3

Choose one:
- CIS 352 - Data Visualization (UMA) 3
- MAT 127 - Calculus II 4
- CIS 461 - Spatio-Temporal Information Science (UMA) 3
- CIS 355 - Sensors (UMA) 3
- CIS 449 - R (UMA) 3
- Other CIS, GEO or GIS course, as approved by division 3 or 4. Also, this requirement may be met by UM graduate courses in Spatial Information Engineering, Spatial Informatics, and (proposed) Data Science Engineering 4+1 programs

**NOTES ON RELATIONSHIP BETWEEN THIS PROGRAM AND THE GENERAL EDUCATION REQUIREMENTS**

This curriculum includes a number of courses that also meet general education requirements. These are denoted by an * in the course list. As a result, the number of credits required by the program are reduced by 19-20 credits depending on the math course selected. The Community Applications also requires SOC 101 Introduction to Sociology as a prerequisite to SOC 301 Rural Sociology. SOC 101 also meets a general requirement in Social Contexts & Institutions.

To meet the Quantitative Literacy requirement of the UMM Gen Ed:

Select one:
- MAT 103M Algebraic Models in Our World (Community Applications concentration) 3 or 4
- MAT 111M College Algebra (Ecological Applications or Data Sci concentration) 3 or 4
- Or establish equivalence by:
  - Score at least 530 on SAT MSS exam or at least 21 on ACT math exam. (no credit is awarded, but the requirement is satisfied)
  - Score 50 or better on CLEP College Mathematics or College Algebra exam taken after 7/1/2001 or 500 or better on the same exam taken before that date

The Gen Ed requirement for a second math course is met within each concentration
b. Development of new courses and/or what they may displace

The proposed program will require only two new courses: GIS 102 - Our Digital Earth and GIS 101 – Intro to Geospatial Careers. Both courses will be available on-line and the Our Digital Earth course will be designed to fulfill the Scientific Inquiry requirement in the UMM General Education curriculum. These new courses have already been approved and added to the UMM catalog. The Ecological Applications concentration and the Community Applications concentration both rely predominantly on courses that are already required in other programs at UMM. This should reduce the need to run small classes since the requirements across programs should bolster enrollments rather than introduce competition. The proposed program core and concentrations will rely on UMA, USM and UMF to supply additional courses in areas where UMM lacks expertise and/or capacity. Availability of the courses is already assured through the Maine Geospatial Institute that includes all seven UMS campuses.

c. Research activity and experiential learning opportunities for students

A hallmark of the existing GIS programs at UMM is experiential learning and undergraduate research opportunities (see examples in Appendix A). These will continue and expand with the new program. Each UMM GIS course includes real-world, applied projects, often connected to faculty research initiatives. The UMM GIS Service Center employs interns over the summer and during the academic year, and EGIS students will have the option of earning internship credit as a GIS elective. The capstone courses in the program, GIS 424 Advanced Projects in GIS and GIS 426 Community Applications in GIS, are centered on in-depth, professional-level projects for faculty research initiatives and/or community partners.

d. Impact of program on existing programs

The proposed program will replace UMM’s Environmental Studies program, requiring some shifts in faculty loads and some additional adjunct faculty to cover courses (this is addressed in greater detail below).

As outlined above, the structure of the program relies on incorporating courses from other UMS campuses, leveraging the support and coordination offered by MGI. If we reach our admissions targets, the result will be a net increase in enrollment in GIS courses offered by all of the partnered institutions.

Currently, there is no four-year GIS program in the UMS. USM offers a geography program with a GIS concentration, and we have worked to minimize potential competition between the programs by emphasizing data science and focusing on environmental applications in the proposed EGIS program.

e. A statement on the extent to which the program would be appropriate for online and hybrid delivery

The core of the proposed EGIS program is accessible in an entirely online format. Two of the three concentrations, Community Applications and Spatial Data Science, can be completed entirely online. Because the Ecological Applications concentration requires field courses, it is currently not possible to complete that pathway online. However, it will be possible for students in the Ecological Applications concentration to complete their third and fourth year courses entirely online if they finish the field courses by the end of their second year.
f. **Ways the program could lend itself to the delivery of micro-credentials, stackable pathways, and specific skill sets and competencies**

The UMM just adopted an early college GIS certificate and already has an undergraduate certificate program that will be stackable with the proposed EGIS program. Also, EGIS students who meet the minimum qualifications may apply to the UM Spatial Information Engineering, Spatial Informatics, and (proposed) Data Science Engineering 4+1 programs in their junior year. If accepted, they may take a five-course sequence of graduate courses that count as electives in their program before transferring to UM to complete a master’s degree in one year after graduation.

The proposed EGIS program learning objectives and course requirements are aligned with the US Department of Labor Geospatial Technology Competency Model and the National GeoTech Center for Excellence model courses.

A near-term goal of the MGI Curriculum Committee is the development of workforce education initiatives. These would be short, credit-bearing educational programs leading to micro-credentials that may be stackable to meet EGIS program requirements.

V. **Program resources**
   a. **Personnel.**
      i. **Vita of existing faculty:**

Current faculty include (vitae are included in Appendix B):

- Dr. Tora Johnson, Associate Professor of GIS, UMM: Dr. Johnson coordinates the UMM GIS program and teaches GIS courses.

- Dr. Matthew Dube, Assistant Professor of Computer Information Systems, UMA: Dr. Dube will teach most of the data science courses in the proposed program, cross listed with UMA.

- Robert Bistrais, Adjunct Professor of GIS, UMM and UMA/ Senior Programmer-Analyst, Maine Office of GIS: Mr. Bistrais teaches web GIS, introductory GIS, and programming courses.

- Judy Colby-George, Adjunct Professor of GIS/ Principal, Spatial Alternatives: Ms. Colby-George teaches municipal applications of GIS.

   ii. **Specific effect on existing programs of faculty assignments to new program, with a description of necessary faculty workload adjustments.**

The number of new courses in the proposed program is limited because it incorporates numerous courses from other campuses. So, no additional faculty hires will be required in the near term. An existing full-time GIS faculty member will teach 12 credits per semester, however, as she is currently serving as division chair some of this load will shift to adjuncts or graduate assistants. Additional course offerings will be supported by new adjuncts (one will be required beginning in the fall of 2020), and UMaine has committed to providing funding for a graduate teaching assistant for at least two years. With the suspension of the ES program, the Environmental Issues and Actions sequence (ENV 114/214/314/414)
will be eliminated. This will require reassignment of one faculty member who will take on an additional chemistry course instead.

Some Environmental Studies courses will be repurposed for the EGIS program, taught by existing faculty. These include ENV 224 Scientific Writing & Presentation, ENV 112 Environmental Issues, and ENV 213 Environmental Ethics and Values. Two of these courses, ENV 112 and ENV 213 satisfy general education core requirements, but ENV 224 is a dedicated course in the EGIS major. Other courses required in the EGIS program are multipurpose, serving multiple majors at UMM.

It is important to note that GIS courses also serve the UMM certificate and minor programs, as well as many students in other majors at UMM, UM and other UMS campuses. Enrollment in GIS 300 alone has been ~80 students per year. So, we run both at least two sections--campus and online--of GIS 300 and 400 concurrently each semester to meet this demand.

In the long term, as enrollment ramps up in the EGIS program, and if demand on the UMM introductory curriculum continues to grow at the current rate, a new faculty hire may be necessary to support the program.

Course rotations for GIS faculty are listed below:

<table>
<thead>
<tr>
<th>GIS FT Faculty w/ Graduate Assistant</th>
<th>Even Falls</th>
<th>Credits</th>
<th>Odd Springs</th>
<th>Credits</th>
<th>Odd Falls</th>
<th>Credits</th>
<th>Even Springs</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS 101</td>
<td>GIS 101</td>
<td>1</td>
<td>GIS 101</td>
<td>1</td>
<td>GIS 101</td>
<td>1</td>
<td></td>
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<tr>
<td>GIS 300 2+ sections</td>
<td>GIS 300</td>
<td>4</td>
<td>GIS 300 2+ sections</td>
<td>4</td>
<td>GIS 300 2+ sections</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIS 400 2+ sections</td>
<td>GIS 400</td>
<td>4</td>
<td>GIS 400 2+ sections</td>
<td>4</td>
<td>GIS 400 1 section</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIS 420</td>
<td>GIS 204</td>
<td>4</td>
<td>GIS 204</td>
<td>1</td>
<td>GIS 431</td>
<td>4</td>
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<tr>
<td></td>
<td>GIS Capstone</td>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>GIS Adjuncts</th>
<th>Even Falls</th>
<th>Credits</th>
<th>Odd Springs</th>
<th>Credits</th>
<th>Odd Falls</th>
<th>Credits</th>
<th>Even Springs</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS 102</td>
<td>GIS 102</td>
<td>4</td>
<td>GIS 102</td>
<td>4</td>
<td>GIS 102</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIS 428</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td>GIS 312</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Current library acquisitions available for new programs

UMM’s Merrill Library has extensive resources to support the proposed program. They employ two professional librarians, a library specialist, and a host of student clerks available for reference support, both in person and online. The library’s collection includes more than 61,000 physical items and more than 400,000 electronic items, with access to relevant GIS, data science and geography materials. They
provide access to URSUS and MaineCat for interlibrary services, provide access to 191 electronic databases, more than 300,000 electronic books, and over 57,000 journals containing millions of articles. In addition, the Merrill Library and the UMM GIS Laboratory have large map and atlas collections, including many local items, that provide valuable materials for use in classes and research projects.

c. New equipment necessary for new program and plan for its acquisition and implementation

The UMM GIS Laboratory is fully equipped to support the program with:
• 12 new workstations with dual monitors and dedicated graphics processors
• Software licenses for ArcGIS, Global Mapper, Trimble Pathfinder Office, and Microsoft Office
• Diverse GPS and GNSS receivers and accessories for field data collection
• Video conferencing capability with 360° camera and microphone
• LCD projector and screen
• 42” HP map plotter
• Large format printer

d. Additional space requirements, if any, including renovations

No additional space or renovations will be required to support the program.

e. Extent of cooperation with other programs, both on the initiating campus and other campuses.

Cooperation with other campuses will be crucial to the proposed EGIS program. Many students from across the system already enroll in UMM’s GIS courses, so coordination has already begun via the MGI executive and curriculum committees. MGI will continue to facilitate coordination. MGI maintains a database of planned course offerings, and faculty confer on scheduling of courses. Some UMA data science courses have already been adopted for cross listing to support the new program, and UMM and UMA have a long-standing record of sharing courses and collaborating. The program has been designed to align with the course rotations of shared courses. Additional courses will be cross listed as the program is implemented.

VI. Total financial consideration

The five-year budget for the program is in the table below. Estimated enrollments were developed in consultation with UMM Dean of Enrollment Management Marnie Kaler. Enrollment estimates for fall 2020 are modest given the short time frame for recruiting students into the new major with no out-of-state students expected to enroll. Marketing and admissions staff will work with program faculty to develop a marketing plan and materials in the summer and fall of 2020, and incorporate the program.

The budget is based on an average of 15 credits per year per student in the major at UMM (six of which meet both major and general education requirements) and an average of five credits per year in the major at other UMS campuses (these are not included in the budget). The budget as presented assumes a 3%
increase in tuition rates per year, a ~90% retention per year, and a four-year program completion for all graduates. The UM Graduate School has committed funding for a graduate teaching assistantship for two years, and the budget includes UMM support for an increasing share of the cost of the graduate assistant in years 3 through 5. Startup costs include curriculum development for the summer of 2020 for the GIS 102 Our Digital Earth course that will serve both EGIS majors and approximately half of all UMM students matriculated in other online majors.

It is crucial to note that current GIS courses taught by existing faculty and adjuncts already serve a large number of students in certificates, minors, and other majors at UMM, UM and other UMS campuses. In AY 2019-2020, GIS courses accounted for 393 credit hours, garnering over $100,000 in tuition revenue. Therefore, the budget includes a modest estimate of $90,000 in service course revenue for each year.
<table>
<thead>
<tr>
<th>Enrollment &amp; Revenue Projections</th>
<th>AY 20-21 Majors</th>
<th>AY 21-22 Majors</th>
<th>AY 22-23 Majors</th>
<th>AY 23-24 Majors</th>
<th>AY 24-25 Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-state</td>
<td>5</td>
<td>5</td>
<td>12</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Credits in Mjr/ Student</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>In-state tuition</td>
<td>$239</td>
<td>$246</td>
<td>$254</td>
<td>$261</td>
<td>$269</td>
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<tr>
<td>Total in-state tuition</td>
<td>$17,925</td>
<td>$60,927</td>
<td>$113,529</td>
<td>$175,755</td>
<td>$235,554</td>
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<tr>
<td>Out-of-state</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Credits in Mjr/ Student</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>OOS tuition</td>
<td>$475</td>
<td>$489</td>
<td>$504</td>
<td>$519</td>
<td>$535</td>
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<tr>
<td>Total OOS tuition</td>
<td>$0</td>
<td>$14,678</td>
<td>$43,842</td>
<td>$87,355</td>
<td>$145,132</td>
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<tr>
<td>Total EGIS Enrollment</td>
<td>5</td>
<td>19</td>
<td>36</td>
<td>56</td>
<td>76</td>
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<td>Service Course Tuition</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
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<tr>
<td>Total Tuition Revenue</td>
<td>$107,925</td>
<td>$165,605</td>
<td>$247,371</td>
<td>$353,111</td>
<td>$470,687</td>
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<tr>
<td>Total 5 year Revenue</td>
<td>$1,344,698</td>
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<table>
<thead>
<tr>
<th>Cost Projections</th>
<th>AY 20-21</th>
<th>AY 21-22</th>
<th>AY 22-23</th>
<th>AY 23-24</th>
<th>AY 24-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Startup Costs</td>
<td>$1,000</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>FT Tenured Faculty (salary &amp; benefits)</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
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<tr>
<td>FT Tenure Track Faculty (new hire)</td>
<td></td>
<td>$78,500</td>
<td>$78,500</td>
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<td>Adjunct Instructors for Electives</td>
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<td>Graduate Assistant</td>
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<td>$10,000</td>
<td>$15,000</td>
<td>$20,000</td>
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<td>Adjunct Instructor for Our Digital Earth</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$4,000</td>
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<tr>
<td>Student Assistants</td>
<td>$1,000</td>
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<td>$2,000</td>
<td>$2,000</td>
<td>$2,000</td>
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<tr>
<td>Equipment</td>
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<td>$500</td>
<td>$1,000</td>
<td>$2,000</td>
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<td>Software licenses</td>
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<td>$2,000</td>
<td>$2,000</td>
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<tr>
<td>Marketing materials</td>
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<td>$500</td>
<td>$500</td>
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<td>$500</td>
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<tr>
<td>Total Costs</td>
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<td>$105,000</td>
<td>$196,000</td>
<td>$201,000</td>
<td>$207,000</td>
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<tr>
<td>Total 5 Year Cost</td>
<td>$815,300</td>
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<table>
<thead>
<tr>
<th>Net Budget</th>
<th>AY 20-21</th>
<th>AY 21-22</th>
<th>AY 22-23</th>
<th>AY 23-24</th>
<th>AY 24-25</th>
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<tbody>
<tr>
<td>Annual Net</td>
<td>$1,625</td>
<td>$60,605</td>
<td>$51,371</td>
<td>$152,111</td>
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<td>5 Year Net</td>
<td>$529,398</td>
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</table>
Five Year Program Budget
  VII. Program assessment and evaluation

It is current practice for UMM’s existing GIS courses and programs to conduct inventories of course and program content at least biannually to ensure they align with workforce needs outlined in the US Department of Labor Geospatial Technology Competency Model (GTCM) and emerging workforce needs compiled by the US Department of Labor. A GTCM inventory of GIS I and II courses is also performed periodically by collaborating faculty in MGI. These practices will continue for courses in the EGIS program.

Program faculty will convene an external advisory committee annually to review the program, discuss emerging workforce needs, and recommend program revisions.

Periodic program assessment and revision (as needed) is required by the university. EGIS program assessment will include surveys and interviews of current students and alumni, assessment of curriculum and student capstone projects via standardized rubrics, review by external reviewers, and compilation of student evaluation of courses. UMM, as a regional campus of the University of Maine is accredited by the New England Commission of Higher Education (NECHE) which imposes further data collection and assessment requirements (https://www.nche.org/resources/standards-for-accreditation/). The program will become part of the Programs for Examination annual process upon completion of its third full year to allow for capturing a three-year average of metrics for review.
APPENDIX A

Some Examples of Applied Projects Conducted by UMM GIS Students

Johnson, T., Rory Morgan, Katherine Pontbriand and McKenna Roden. (2019) Evaluating the Effectiveness of Shellfish Legal Notices. A report to the Maine Department of Marine Resources. [Link]

Washington County Council of Governments; Baker Designs, Inc.; Town of Machias; and University of Maine at Machias GIS Laboratory. 2018. Machias Waterfront Resilience Study. Retrieved February 24, 2019, from [Link]


Awards for UMM GIS Projects and Faculty

- Maine Campus Compact Donald Harward Faculty Award to Dr. Tora Johnson for Service Learning Excellence, 2016
- Maine State Legislature Legislative Sentiment to Dr. Tora Johnson in Recognition of Service to Downeast Maine, 2015
- National Geospatial Technology Center of Excellence Lifetime Achievement Award to Dr. Tora Johnson, 2015
- Maine Association of Planners Project of the Year, 2014, for GroWashington-Aroostook Climate Resilience Project
- Northern New England Chapter of the American Planning Assoc. Project of the Year, with Judy East, 2014, for GroWashington-Aroostook Climate Resilience Project
Appendix B - Faculty CVs

Dr. Tora Johnson, PhD Curriculum Vitae

EDUCATION
PhD in Forest Resources focusing on human dimensions of natural resource management, 2015.
MPhil in Human Ecology, College of the Atlantic, 2003
BS in Biology, University of Oregon, 1988

AWARDS
- University of Maine Pen Award for volunteer work with the 4-H Program involving college
  student interns in youth activities, 2017
- Maine Campus Compact Donald Harward Faculty Award for Service Learning Excellence, 2016
- Maine State Legislature Legislative Sentiment in Recognition of Service to Downeast Maine,
  2015
- National Geospatial Technology Center of Excellence Lifetime Achievement Award, 2015
- Maine Association of Planners Project of the Year with Judy East, 2014
- Northern New England Chapter of the American Planning Assoc. Project of the Year, with Judy
  East, 2014
- Barnes and Noble Discover Great New Writers list for fall, 2005
- Center for Applied Human Ecology Award, College of the Atlantic, 2003
- University of Oregon Institute of Marine Biology Alumni Award, 1987

COMMITTEES
- Maine Geospatial Institute, Executive Committee, 2018 to present
- Maine GIS User Group, Board of Directors, 2016 to present
- Downeast Salmon Federation, Board of Directors, 2016 to present
- Maine Academy of Modern Music, Board of Directors, 2014 to present
- Downeast Research and Education Network, Steering Committee, 2012 to present
- Downeast Coastal Conservancy, Advisory Board, 2014 to present
- National Geospatial Technology Center for Excellence, National Visiting Committee, 2010 to
  2013
- EPA New England Climate Leaders Champion Working Groups: Adaptation for Municipal
  Government and Climate Communication, 2013 to 2015
- Maine GeoLibrary Board Education and Training Task Force, Chair 2010-2012; Member
  2012-2013

WORK EXPERIENCE
Chair, Division of Environmental & Biological Sciences, University of Maine at Machias, July 2019
  – Present
Tenured Associate Professor & Director of Geographic Information Systems (GIS), University of
  Maine at Machias, September 2017 – Present
Associate Professor & Director of Geographic Information Systems (GIS), University of Maine at
  Machias, September 2016 – September 2017
Assistant Professor; September 2015 – August 2016
Instructor; September 2011 – August 2015
Lecturer; January 2007 – August 2011
Adjunct; September 2004 - December 2004 and January 2006 - December 2006
Courses Taught: GIS Applications I and II, Remote Sensing and Image Analysis, Introduction to

Additional responsibilities: Lead STEM education initiatives for underserved students; oversee service learning projects with community partners; advise students; collaborate with academic partners on statewide projects; perform laboratory upgrades and maintenance; assist development of articulation agreements; coordinate and teach summer camp and outreach activities for youth; plan curriculum; write and administer grants; build and maintain program websites.

GIS and Community Development Consultant/ Writer/ Educator, May 1995- present
Selected clients:
- Spoleto Festival USA, Charleston, SC: By invitation, multidisciplinary collaboration on a project addressing challenges of development among African-American Lowcountry communities, 2004- 2008;
- Lehigh County Conservation District, PA: Train staff in GIS applications, create a database management system and install software, provide technical support, February 2006- 2008;
- School of the Art Institute of Chicago, IL: Provide technical support and training to faculty for new geographic information systems curriculum in community-based art courses, March 2005;

Adjunct Faculty/ Curriculum Design Consultant: Marine Advanced Technology Education (MATE) Center, Monterey Peninsula College, Monterey, CA
November 2005- December 2008
Course Taught: Ocean Careers
Additional responsibilities: Write, design, and teach an online course on ocean careers linked with MATE Center websites, databases, partners and other resources. The course package is still in use in Monterey and other marine programs across the nation.

Adjunct Faculty: College of the Atlantic, Bar Harbor, ME
January 2001- June 2002 (part time) and September 2002- June 2005 (full time, grant-funded)
Courses Taught: Geographic Information Systems 1; GIS for Arts, Science and Humanities; Piloting and Navigation; Applied Pre-calculus; Geostatistics Graduate Tutorial, Biology 1 and 2; Food Systems; advanced projects and independent studies in GIS and marine studies for undergraduates and a small number of graduate students.
Additional responsibilities: Develop and implement new geographic information systems, navigation, and mathematics hands-on service learning curriculum; advise graduate students and senior undergraduates on thesis projects and independent studies in GIS, marine studies, and community studies; evaluate GIS laboratory programs and recommend changes and upgrades; work with GIS laboratory director and Center for Applied Human Ecology staff to implement recommendations and oversee laboratory expansion.
Special Project: Re-imagining a Carolina Landscape: Intensive, advanced course on people and place, including a study trip to South Carolina to work with students from the School of the Art Institute of Chicago in an on-going community development project. Course culminated in a gallery exhibition of student work in winter 2005.

Adjunct Faculty, Cape Cod Museum of Natural History & Framingham State University, Brewster, MA
January- June 2006
By invitation, develop and teach a graduate level seminar course on conflict, resolution and solutions in marine environmental issues and among maritime communities.

**Adjunct Professor of Environmental Technology:** Cape Cod Community College, Barnstable, MA  
September 1998- August 2002  
Courses Taught: Introduction to Environmental Science; Physical Oceanography & Coastal Structures; Introduction to Water: Concepts & Technology; Geographic Information Systems, Survey of Environmental Technology.

**Adjunct Professor of Environmental Science:** Massachusetts Maritime Academy, Buzzards Bay, MA  
September- December 2000  
Course Taught: Wastewater Treatment Laboratory.

**Shipboard Education Coordinator:** Schooner Ernestina, New Bedford, MA  
May- September 1995 & March - June 1996  
Job Description: Develop and implement shipboard education programs for children and adults; supervise education staff and volunteers; serve as a deck officer.

**Program Associate:** The Catskill Center for Conservation and Development, Arkville, NY  
February 1994- May 1995  
Job Description: Develop and implement Streamwatch curriculum in area schools; write grants for and coordinate Kid’s Watershed Summit project; conduct outreach and education on aquatics and water quality; coordinate the writing of regional proposal for United Nations Biosphere Reserve Status; lobby state and local legislators regarding local environmental issues.

**Education Specialist:** Hudson River Sloop Clearwater, Poughkeepsie, NY  
March 1992- December 1993  
Job Description: Develop and implement shipboard education programs for children and adults; coordinate education staff and volunteers; write grants; serve as deck officer.  
Special project: Kid’s Clean Water Petition: Participation-in-government program for children.

**Director, Shipboard Coastal Ecology Program:** Voyager Cruises, Mystic, CT  
March 1990- October 1991  
Job Description: Develop and implement shipboard education programs for children and adults; write and administer grants; hire and supervise education interns; serve as deck officer.

**Commercial Fisherman/ Deckhand:** F/V Peppermint John, Ketchikan, AK  
July- September 1991

**Marine Science Assistant:** Williams College-Mystic Seaport Maritime Studies Program, Mystic, CT  
September 1989-June 1990

**Graduate Teaching Fellow in Invertebrate Zoology:** Oregon Institute of Marine Biology, Charleston, OR  
June- August 1989 & June- August 1990

**RESEARCH EXPERIENCE**

"Role of Dignity in Rural Natural Resource Governance," dissertation research at University of Maine; 2011-2015

“Shoreland Zoning Model and Maps,” developed a GIS model to generate shoreland zoning maps for more than forty Washington County towns. Worked with town officials, through regional planning agency, to revise and refine the maps and help towns comply with new state laws and retain local control over their zoning; 2009 – present.

“Geospatial Technology Education for Rural Regions,” documenting the challenges and opportunities for providing geospatial technology education to serve a rural workforce within Maine and nationally. Conducting workforce assessment, convening and contributing to roundtable discussions, and compiling and disseminating resources and research, and building a national community of rural geospatial educators, 2007 – present.

“Downeast (Maine) Coast Scenic Inventory and Assessment,” A collaboration among Washington County (Maine) Council of Govts., Hancock County Planning Commission and Univ. of Maine at Machias, conducted with funding from the Maine State Planning Office. Worked with regional planning agencies and a corps of volunteers to map, assess and document scenic resources in Washington and Hancock Counties, culminating in a website and report with maps, photos and documentation for use in land use planning, promoting tourism, and other important activities; 2009.

“Downeast (Maine) Regional Strategic Conservation Plan,” Through partnerships with three local land trusts, Maine Coast Heritage Trust, The Nature Conservancy, and the Washington County Council of Governments, students and faculty worked directly with clients to develop a list of priorities then gathered data, created and revised GIS computer models, and provided maps to the land trusts showing areas with high conservation values as defined by the land trust's strategic plans; 2007/2008.

“Quoddy Regional Land Trust Strategic Planning Models,” Through a grant from the Maine Coast Protection Initiative, students and faculty used advanced computer modeling techniques to map areas of high conservation priority. This served as a pilot for the regional strategic planning effort; 2007.


of the Atlantic, Bar Harbor, ME; March 2001- June 2005.


“Effects of oyster culture on the benthic infauna of a National Estuarine Research Reserve (South Slough).” Assistant to Dr. Gregory Ruiz: Oregon Institute of Marine Biology, Charleston, OR; February- June 1989.

PUBLICATIONS AND REPORTS


Evans, Keith S., Kevin Athearn, Xuan Chen, Kathleen P. Bell, & Tora Johnson. Measuring the impact of pollution closures on commercial shellfish harvest: the case of soft-shell clams in Machias Bay, Maine. Ocean and Coastal Management (2016). http://dx.doi.org/10.1016/j.ocecoaman.2016.06.005


**SELECTED INVITED PRESENTATIONS**


"Economic Value of Conserved Lands: Downeast & Acadia Region." Invited presentation to the Governor's Land Conservation Task Force, 2018
“Storm Surge and Sea Level Rise Threats to Downeast Maine Communities.” Invited presentation to a workshop for Wabanaki environmental and administrative professionals, 2016.


“Mapping Washington County's Food System.” with Laura Teisl and Lisa Ravis, keynote presentation to the Washington County Food Summit, 2014.


“Collaboration Among Institutions to Bring Geospatial Technology to an Underserved Rural Region.” Invited presentation to the American Geophysical Union, 2012


“Supporting Technical Education Programs at Small and Rural Community Colleges.” Invited to coordinate a workshop at the NSF Advanced Technological Education Principal Investigators Conference, 2010


ATE National Principal Investigators Conference, part of the workshop: Keep the Ball Rolling—Sustaining Projects through Dissemination. “Starting and Sustaining an ATE Project in Small, Rural and/or Inexperienced Institutions,” 2009

Community for Rural Education Stewardship and Technology, NSF Funded Program of University of Maine at Machias and Island Institute at Darling Marine Center, Boothbay Harbor, ME. “Human Ecology and GIS in Maritime Communities.” July 28, 2006.

Gloucester Maritime Heritage Center, MA. “Entanglements: The Intertwined Fates of Whales and Fishermen.” December 1, 2005


Tufts University Cummings School of Veterinary Medicine, lecture sponsored by Wildlife, Aquatics, Zoos and Exotics. “Entanglements: The Intertwined Fates of Whales and Fishermen.” April 6, 2005.


SELECTED PRESENTED PAPERS AND POSTERS

Johnson, T. "Dignity as an underpinning of responsibility in environmental governance." Paper presented to the Annual Meeting of the American Association of Geographers, 2019

Johnson, T., Andrew Howland and David Cisneros. "How much risk is too much? Geographic and economic analysis to support local decisions about flood resilience in a Downeast Community." Paper presented to the Maine Sustainability and Water Conference, 2019


ART EXHIBITS AND INSTALLATIONS


SYNERGISTIC ACTIVITIES

External Advisor, “Opening Pathways to Employment through Nontraditional Geospatial Applications in Technical Education (OPEN-GATE).” Project funded by the National Science Foundations Advanced Technological Education Program, NSF #1601552, Robyn Lane, PI. 2016 to present.

Coordinator, Annual Maine GIS Educators Conference, 2007 to present.

Collaborator, with Maine Geographic Alliance, summer GIS institutes for K12 teachers in Maine, 2008 to present


Panelist for Proposal Review, National Science Foundation, 2010 through 2018.

GRANTS

Co-Principal Investigator with Kristina Cammen (principal), Lauren Ross, Gayle Zydlewski, Jessica Jansujwicz, and Gabriella Marafano. Track 3: The Western Passage student research collaborative: Considering physical, biological, and social dynamics of a tidally energetic system in Eastern Maine, $30,000. University of Maine Research Reinvestment Fund Student Awards Competition, Track 3. Awarded. 2019 – 2020

Co-Principal Investigator with Cynthia Loftin (principal), Anthony Guay and Mary Kate Beard-Tisdale. An interdisciplinary approach to building data literacy in wildlife survey technologies, $145,000.
University of Maine Research Reinvestment Fund Student Awards Competition, Track 4. Awarded. 2019 – 2021

Co-Principal Investigator with A. Thomas (principal), W. Balch, D. Townsend & H. Xue: Multi- and hyperspectral bio-optical identification and tracking of Gulf of Maine water masses and harmful algal bloom habitat, $750,000. NASA EPSCoR Research Competition. Awarded. 2016 – 2019

Collaborator: Machias Waterfront Resilience and Renewal, $45,094. Maine Coastal Communities Grant Program. Awarded. 2017 – 2018

Principal Investigator: Machias Bay Initiative, $4,000. Supported evaluation of shellfish closure maps and notices. Maine Coastal Program. Awarded. 2016 – 2018


GRAMS, continued

Co-Principal Investigator with Mindy Crandall (principal) and Adam Daignault: The Value of Conservation Lands in Downeast Maine: A research collaboration of the University of Maine (UM), the University of Maine – Machias (UMM), and the Downeast Research and Education Network (DEREN), $27,822. Supported shared master's student UM/ UMM. University of Maine Research Reinvestment Fund Student Awards Competition. 2017 – 2018


Supplemental Award, 2009: $24,980: Mac Laboratory for Univ. of Maine at Machias Education Program

Supplemental Award, 2010: $48,000: Laptop Program for Teachers Terrified of Technology and Supporting New GIS Courses for Eastern Maine Community College

Co-Principal Investigator with M. Bampton (principal) and J. Szakas: Creating and Implementing a Concept Inventory-Based Diagnostic Tool to Improve Undergraduate GIS Education. NSF CCLI

SKILLS

- Geographic Information Systems, including advanced geoprocessing, raster analysis, satellite image analysis, modeling, field data collection, spatial statistics, and project management
- Qualitative and quantitative human studies research methods
- Facilitative leadership and conflict resolution
- Writing for grants and public education
- GIS software and hardware maintenance and upgrade, including large format printing
- GIS server administration and web-based mapping and basic application development
- Database management and maintenance, including a wide variety of geographic data formats
- Advanced coastal piloting and navigation, ship handling, sailing and marlinspike seamanship
- Mathematics instruction to college precalculus level
- Cartographic design for multiple media
- Basic web design and web mastering
- Proficient in Spanish
Matthew P. Dube - Curriculum Vitae

Note: Dr. Dube is a UMA faculty member who will teach most data science courses in the proposed program.

Assistant Professor of Computer Information Systems, University of Maine at Augusta
113 Art Building, Augusta, ME 04330
matthew.dube@maine.edu
http://www.uma.edu/directory/staff/matthew-p-dube

EDUCATION

The University of Maine
Ph.D., Spatial Information Science and Engineering
May 2016
Thesis: Algebraic Refinements of Direction Relations through Topological Augmentation
Advisor: Max J. Egenhofer

The University of Maine
Graduate IGERT Certificate in Sensor Science, Engineering, and Informatics
May 2011
Supervisor: Dr. Kate Beard

The University of Maine
M.S., Spatial Information Science and Engineering
May 2009
Thesis: An Embedding Graph for 9-Intersection Topological Spatial Relations
Advisor: Max J. Egenhofer

The University of Maine
BA in Mathematics and Statistics
August 2007
Focus on Mathematical Statistics

EMPLOYMENT

Assistant Professor of Computer Information Systems
University of Maine at Augusta College of Professional Studies, Augusta, ME
August 2016 - Present
- Develop courses from scratch in Database Design, Database Management, Data Science, Data Visualization, Data Mining, R, SQL, Algorithms and Data Structures, Visual Basic, Microsoft Office, Java, Software Engineering, Interdisciplinary Studies, and Geography
- Construct a new data science baccalaureate degree for the University of Maine System
- Conduct research in spatial data science, equine data science, and electoral data science
- Participate in the Maine Geospatial Institute and Emergency Management Committee
- Serve on the research and scholarship faculty committee
● Serve and chair the assessment faculty committee and the curriculum committee
● Serve on the civic engagement steering committee
● Serve on the intercollegiate and honors council
● Serve on the faculty senate as Secretary
● Served on three faculty hiring committees (Cybersecurity, Communications, Computer Information Systems)

Mathematics Instructor, Presentation Skills Instructor, Research Mentor

*Upward Bound Math-Science Program, Orono, ME*
June 2011 – Present
● Developed from scratch six-week intensive curricula for calculus, pre-calculus, statistics, geometry, and presentation skills courses
● Developed aspirations courses in data visualization (2018) and sensors (2019)
● Authored instruction manuals for calculus, pre-calculus, and statistics
● Mentored 3-5 students per program year through collegiate research experiences
● Trained fellow co-workers in statistical methodology to assist their research mentees, including experimental design, proper statistical test diagnosis, and statistical interpretation

Teaching and Research Assistant

*University of Maine School of Computing and Information Science, Orono, ME*
May 2008 – May 2016
● Instructed service courses in Microsoft Excel
● Lectured for classes in engineering databases, discrete structures, information systems, experimental design, and spatial reasoning
● Graded assignments ranging from conceptual schema design, coding, to SQL
● Developed real-world application lab assignments for concepts covered in courses
● Mentored research for junior graduate students
● Responded to student questions and needs for further clarification

Teaching Assistant

*University of Maine Department of Mathematics and Statistics, Orono, ME*
January 2014 – May 2014
● Provided recitation material for three Calculus II sections
● Provided homework guidance for struggling students
● Developed examples of concepts applied in real world phenomena

IGERT Fellow

*University of Maine Sensor Science, Engineering, and Informatics IGERT, Orono, ME*
September 2009 – May 2011
● Developed client-motivated sensor solutions for indoor navigation in low-vision environments
● Participated in interdisciplinary coursework in sensor technologies
● Facilitated laboratory course for following cohort
● Advised following cohort through their client project: formaldehyde monitoring system

Assistant Training/Security Coordinator

*University of Maine Office of Student Records*
September 2007 – May 2009
- Developed and delivered training materials for system-wide implementation of MaineStreet academic management software
- Instituted standing SQL queries for academic personnel needs
- Developed out-of-system solutions for administrative staff needs in academic management
- Debugged and experimented with role combinations and modules within the new system

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**INSTRUCTED COURSES (INCLUDING AS TA)**

*University of Maine at Augusta (Assistant Professor)*

**Summer 2020 (Scheduled)**

CIS 355 – Introduction to Sensors (Online)
CIS 449 – R Programming and Package Development (Online)
SSC 389 – Redistricting and the U.S. Census (Online)

**Spring 2020**

CIS 218 – Introduction to SQL (Online) Enrolled: 23
CIS 255 – Database Design (Live/Online) Enrolled: 42
CIS 352 – Data Visualization (Online) Enrolled: 17
CIS 354 – Algorithms and Data Structures (Online) Enrolled: 9

**Fall 2019**

BUA/CIS 450 – Data Mining (Live/Online) Enrolled: 10
CIS 100 – Introduction to Computer Applications (Live) Enrolled: 20
CIS 150 – Introduction to Data Science (Online) Enrolled: 10
CIS 212 – Introduction to Visual Basic (Online) Enrolled: 20
CIS 218 – Introduction to SQL (Online) Enrolled: 1 (Directed Study)
CIS 255 – Database Design (Live/Online) Enrolled: 35
CIS 410 – Software Engineering (Online) Enrolled: 1 (Directed Study)
GEO 101 – Introduction to Geography (Live/Online) Enrolled: 20

**Summer 2019**

CIS 355 – Introduction to Sensation and Measurement Theory (Online) Enrolled: 11
CIS 449 – R Programming and Package Development (Online): Enrolled: 12

**Spring 2019**

CIS 100 – Introduction to Computer Applications (Live) Enrolled: 24
CIS 212 – Introduction to Visual Basic (Online) Enrolled: 2 (Directed Study)
CIS 218 – Introduction to SQL (Online) Enrolled: 26
CIS 255 – Database Design (Live/Online) Enrolled: 24
CIS 312 – Advanced Visual Basic (Online) Enrolled: 1 (Directed Study)
CIS 352 – Data Visualization (Online) Enrolled: 9
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<th>Course Code</th>
<th>Course Title</th>
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<td>CIS 353</td>
<td>Human Computer Interaction and User Design</td>
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<td>CIS 353</td>
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<td>CIS 380/480</td>
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<td>CIS 352</td>
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</table>
CIS 100 – Introduction to Computer Applications (Live) Enrolled: 22
CIS 212 – Introduction to Visual Basic (Online) Enrolled: 16
CIS 350 – Database Management (Live/Online) Enrolled: 28

University of Maine (Adjunct Professor, Teaching Assistant)

Summer 2020 (Scheduled)
GEO 100 – World Geography (Instructor of Record)

Fall 2019
BMS 625 – Computational Biology (Instructor of Record) Enrolled: 18

Summer 2019
COS 120 – Introduction to Computer Programming (Instructor of Record) Enrolled: 11

Summer 2018
COS 198 – Data Visualization (Instructor of Record) Enrolled: 18

Spring 2016
COS 213 – Advanced Excel Spreadsheet Design (Instructor of Record) Enrolled: 98

Fall 2015
COS 213 – Advanced Excel Spreadsheet Design (Instructor of Record) Enrolled: 93
COS 250 – Discrete Structures (TA) (Dr. Torsten Hahmann)

Spring 2014
MAT 127 – Calculus II (TA) (Paula Drewniay)
SIE 554 – Spatial Reasoning (TA) (Dr. Max Egenhofer)

Summer 2013
POS 498 – Mathematics of Redistricting (TA) (Dr. Richard Powell)

Fall 2013
SIE 550 – Engineering Databases and Information Systems (TA) (Dr. Max Egenhofer)

Spring 2013
SIE 554 – Spatial Reasoning (TA) (Dr. Max Egenhofer)

Fall 2012
SIE 550 – Engineering Databases and Information Systems (TA) (Dr. Max Egenhofer)

Spring 2012
SIE 554 – Spatial Reasoning (TA) (Dr. Max Egenhofer)

Fall 2011
SIE 550 – Engineering Databases and Information Systems (TA) (Dr. Max Egenhofer)

Spring 2011
<table>
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<td>ECO 493</td>
<td>Calculus for Economics (TA) (Dr. George Criner)</td>
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<tr>
<td>INT 598</td>
<td>Sensor Testbed (Advisor) (Dr. Kate Beard)</td>
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<tr>
<td>SIE 554</td>
<td>Spatial Reasoning (TA) (Dr. Max Egenhofer)</td>
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**Fall 2010**
- INT 598 – Sensor Foundations (Lab Instructor) (Dr. Kate Beard)
- SIE 550 – Engineering Databases and Information Systems (TA) (Dr. Max Egenhofer)

**Spring 2010**
- BUA 490 – Leadership for the Future (TA) (Dr. Scott Anchors)
- SIE 554 – Spatial Reasoning (TA) (Dr. Max Egenhofer)

**Fall 2009**
- SIE 550 – Engineering Databases and Information Systems (TA) (Dr. Max Egenhofer)

**Spring 2009**
- SIE 554 – Spatial Reasoning (TA) (Dr. Max Egenhofer)

**Fall 2008**
- SIE 550 – Engineering Databases and Information Systems (TA) (Dr. Max Egenhofer)

**Upward Bound Math-Science**
- Computer Programming - 2019
- Data Visualization – 2018
- Garden Elective – 2018
- Geometry – 2014
- Pre-Calculus – 2011

**PUBLICATIONS**

**Journal Articles**


Book Chapters


Fully Referred Conference Proceedings


Abstract-Referred Conference Presentations


RESEARCH SUPERVISED

University of Maine

University of Maine Doctoral Dissertation Committee Member – Colin Bosma (Ph.D. Clinical Psychology) (January 2019 – present)

Determining an Expected House Majority Using Pattern Analysis1* – Jesse Clark (Honors Thesis Co-Advisor, 2015-2016) – Massachusetts Institute of Technology Ph.D. Program in Political Science


Upward Bound Math-Science

Predicting the Redistricting of 2020 and 2030 – Garrett Caruso (2019) – attending the University of Maine for B.S. Computer Science

The Correlation between the Period of Sound Waves and Galvanic Skin Response (GSR) Readings – William Curtis (2019) – Senior at Mattanawcook Academy

A Study on the Behaviors Exhibited by the Composition Operator in Context of Topological-Spatial Relations between Lines and Regions – Cody Norris (2019) – attending the University of Maine for B.S. Computer Science


The Impact of a Horse's Age and Sex on Start Lag Intervals – Lauren Underhill (2018) – attending the University of Maine at Augusta for B.S. Veterinary Technology

Confirming the Efficacy of Even Swing through the Use of Election Data – Kyle Watson (2018) – attending Princeton University for B.S. Engineering


Relative Strength of Shape, Size, Color, Saturation, and Motion as Visual Preattentive Attributes in

1* Accepted to Northeast Political Science Association Conference
2** Submitted to journal

38
Adolescents – Jarek Munson (2017) – attended Nokomis Regional High
The Effect of Age and Breeding History on Thoroughbred Foaling
Lauren Underhill (2017) – attending the University of Maine at Augusta for B.S. Veterinary Technology
Perception of Rotational Motion: The Influence of Control and Goal on Angular Accuracy – Cody Hall
(2016) – attended Husson University for B.S. Entertainment Production
Perception Bias in Interpersonal Relationships based on Personality Types – Krystina Martinez (2016) –
attended Nokomis Regional High
The Impact of Social Heterogeneity on Workplace Performance – Maryan Mukhtar (2016) – attending
Southern Maine Community College
A Graph Theory and Statistics Approach to Gerrymander Identification – Garrett Rudge (2016) – attended
the University of Maine for B.A. Mathematics and Statistics
Veterinary College for DVM
B.S. in Computer Science
Determining Effectiveness of a National Election Prediction Model – Maryan Mukhtar (2015) – attending
Southern Maine Community College
attended Nokomis Regional High
Raster Relations for Connected Regions – Noah Simpson (2015) – attended the University of Maine for
Pre-Engineering
Determining Topological Relations between Digital 3D Objects – Jordan Barrett (2014) – attending
University of Nebraska for Ph.D. in Mathematics
University for B.A. Political Science
Discrimination of Equally Tempered Tones and Chords – Beverley Guay (2014) – attended College of the
Atlantic for B.S. Environmental Science
Raster Relations Revisited: Expanding Spatial Possibilities through Constraint Relaxation – Noah Simpson
(2014) – attended the University of Maine for Pre-Engineering
Solving Hydroelectricity’s Fish Problem – Marianna Angelo, Breanna Batchelder, Jonathan Haddad, Austin
Nantkes, Joshua Wheeler, and Caleb Wursten (2013) – attending/attended the University of Maine (B.S.
Mechanical Engineering), Colby College (B.S. Computer Science), Husson University (B.S. Physical Therapy), Babson
College (B.S. Business and Entrepreneurship)
Identifying Viable Symbols within 3D Qualitative Direction Partitions – Jordan Barrett (2013) – attending
University of Nebraska for Ph.D. in Mathematics
Merit of the Judging/Perceiving Pole – Courtney Burris (2013) – attending University of Buffalo for Ph.D.
Industrial Systems Engineering
Identifying Languages based on Conditional Probability and Frequency Distribution – Mia Campbell (2013)
– attended Bangor High School
Detectability Levels of the Human Ear: Using a Range of Frequencies, Octaves, and Tones – Beverley
Guay (2013) – attended College of the Atlantic for B.S. Environmental Science
Biocapacity: The Earth’s Natural Countdown – Odom Lim (2013) – attended Massachusetts College of Pharmacy
and Health Sciences for Pharm. D.

••••• Accepted to International Symposium on Equine Reproduction (ISER)
••••••• Accepted to Journal of Computer Languages
•••••••••• Accepted to International Conference on Spatial Information Theory (COSIT)
Exploring the Methods of Differential Calculus through the Brachistichrone Problem – Courtney Burris (2012) – attending University of Buffalo for Ph.D. Industrial Systems Engineering

Of Ecology and Climate Change: Past, Present, and Future – Jordan Barrett, Stephanie Decker, Dustin Ewer, Patrick Nason, and Labiba Shaheed (2012) – attended or attending the University of Maine (B.S. Clinical Lab Sciences, B.S. Social Work), University of Massachusetts-Lowell (B.S. Biology), University of Nebraska (Ph.D. Mathematics)

The Gerrymandered States of America: An Attempt to Reverse the Election of 2008 in Favor of the Minority Candidate – Odom Lim (2012) – attended Massachusetts College of Pharmacy and Health Sciences for Pharm. D.

An Algorithm for Determining Convexity within an Arbitrary Network**** – Brian Lopez-Cornier (2011) – attended University of Massachusetts-Boston for B.S. Computer Forensics

Using Taylor Series to Approximate an Indefinite Integral (Anti-derivative) - Chhing Tiv (2011) – attended University of Massachusetts-Amherst for B.S. Psychology

FUNDING

“BS Data Science Degree” – UMS Collaborative Program Support Fund (Curriculum Author) - $177,177 (2018)

“How do Adult Students Relate their Academic Studies with their Work Experiences and Career Aspirations” – Presidential Research Innovation Grant, University of Maine at Augusta (Co-Investigator) - $10,570 (2017)

COLLEGIATE SERVICE

Campus Service

University of Maine at Augusta Policy Scholars Joint Advisor (October 2018 – present)
University of Maine at Augusta Faculty Senate (October 2017 – present; Secretary June 2018 – present)
University of Maine at Augusta Curriculum Committee Member (September 2019 – present, Chair)
University of Maine at Augusta Intercollegiate Honors Council Member (February 2017 – present)
University of Maine at Augusta Data Science Hiring Committee Member (2018-2019 AY)
University of Maine at Augusta Communications Hiring Committee Member (2018-2019 AY)
University of Maine at Augusta Cybersecurity Hiring Committee Member (2017-2018 AY)
University of Maine at Augusta Assessment Committee Member (September 2017 – May 2019; Chair June 2018 – May 2019)
University of Maine at Augusta Advocating Wicked Scholarship in Maine Committee Member (August 2016 – May 2018)

Scholarly Service

Treasurer of Maine Geospatial Institute – 2019 - present
Travel Coordinator for the 2011 Conference on Spatial Information Theory – 2011

**** Accepted to International Conference on Geographic Information Science (GIScience)

Student Organizations

Chapter Counselor, Maine Alpha Chapter of Sigma Phi Epsilon – 2013 – present
Sigma Phi Epsilon Carlson Leadership Academy Faculty, Northeast Region – 2012 - 2014
Balanced Man Steward, Maine Alpha Chapter of Sigma Phi Epsilon – 2009 – 2013
Vice President of Alumni Relations, Maine Alpha Alumni and Volunteer Corporation – 2007 – 2009

CONFERENCES ATTENDED

MELMAC 202 – Orono, ME (February 2020)
CUE.NEXT: Envisioning the Future of Undergraduate Computer Science Education – Denver, CO (January 2020)
Census and Electoral Geospatial Data – Boston, MA (November 2019)
American Elections Symposium – Manchester, NH (March 2019)
Maine Education Opportunity Association Annual Conference – Orono, ME (January 2019)
International Symposium on Equine Reproduction XII – Cambridge, UK (July 2018)
Maine Education Opportunity Association Annual Conference – Orono, ME (January 2018)
The International Emergency Management Society USA Meeting – Orono, ME (June 2017)
Midwest Political Science Association – Chicago, IL (April 2017)
Maine Education Opportunity Association Annual Conference – Orono, ME (January 2017)
International Conference on Spatial Information Theory – Santa Fe, NM (October 2015)
Advancing Geographic Information Science: The Past and Next Twenty Years – Bar Harbor, ME (June 2015)
ACM SIGSPATIAL – Dallas, TX (November 2014)
International Conference on Spatial Information Theory – Scarborough, UK (September 2013)
Geographic Information Science – Columbus, OH (September 2012)
International Conference on Spatial Information Theory – Belfast, ME (October 2011)
ACM SIGSPATIAL – Seattle, WA (November 2009)
Quality of Context – Stuttgart, Germany (June 2009)

INVITED LECTURES

The Role of Computer Science in Solving Governmental Issues Surrounding Redistricting – Bowdoin College (October 2018)
The State of Affairs in Federal and State Redistricting Processes – WERU Community Radio (March 2018)
A Data Scientist’s View on Sensation and Perception – The University of Maine (October 2017)
Data and the Quest for Truth – The University of Maine at Augusta Convocation Faculty Address (September 2017)
Data Science in an Emergency Management Setting – The International Emergency Management Society USA Meeting (June 2017)
Swiss Canton Regions: Defining an Object Model for Complex Spatial Objects – The University of Maine (February 2017)
A Data Scientist’s View on Sensation and Perception – The University of Maine (October 2016)
60 in 60: Life Lessons from Mathematics – Computer Science Education Week, The University of Maine (December 2011)

AWARDS AND HONORS

Research, Teaching, and Academic Awards

Distinguished Scholar Award – September 2019, presented by the administration of the University of Maine at Augusta
Faculty Member of the Month – September 2015, presented by the sisters of the Maine Alpha Chapter of Pi Beta Phi Sorority
Vespucii Initiative Top Mock Research Grant Proposal – July 2015, Vespucii Initiative, Bar Harbor, Maine
Advancing Geographic Information Science: The Past and Next Twenty Years Junior Scholar – July, 2015, Vespucii Initiative, Bar Harbor, Maine
Michael J. Eckardt Doctoral Dissertation Fellowship – August 2014 – August 2015, University of Maine, Orono, Maine
NSF Travel Scholarship for ACM SIGSPATIAL – November 2014, Dallas, Texas
COST Young Researchers Forum – Moving Objects and Knowledge Representation, August 2011, University of Ghent, Ghent, Belgium
NSF Integrated Graduate Education and Research Trainee – September 2009 – May 2011, University of Maine, Orono, Maine
Top Graduate Award – May 2009, Department of Spatial Information Science and Engineering, University of Maine, Orono, Maine

Mentoring and Service Honors

Michael Morin Award for Fraternity Advisor of the Year – 2019, University of Maine, Orono, Maine
University of Maine at Augusta Faculty Gardener of the Year – 2018, University of Maine at Augusta, Augusta, Maine
University of Maine at Augusta Faculty Gardener of the Year – 2017, University of Maine at Augusta, Augusta, Maine
Distinguished Volunteer Award – 2016, Sigma Phi Epsilon Fraternity, Richmond, Virginia
Michael Morin Award for Fraternity Advisor of the Year – 2015, University of Maine, Orono, Maine
Michael Morin Award for Fraternity Advisor of the Year – 2014, University of Maine, Orono, Maine
All Maine Women Honor Society Distinguished Mentor Award (Kate McKown) – April 2014, University of Maine, Orono, Maine
Nominee for the Dean Lucy Award – April 2009, University of Maine, Orono, Maine

MEMBERSHIPS
Professional

ACM
ACM Special Interest Group in Spatial Information Science and GIS
IEEE
Maine Geospatial Institute
Midwest Political Science Association

Honor Societies

Golden Key International Honor Society
Order of Omega
Pi Mu Epsilon National Honorary Mathematics Society – Maine Alpha Chapter
Phi Beta Kappa Society – Delta of Maine
Judy Colby-George - Resume

Note: Ms. Colby-George is a UMM adjunct faculty member who teaches online GIS courses related to community planning and land use.

Career Summary:
2001 – Present Principal, Spatial Alternatives, Yarmouth, Maine
Principal of geographic information systems consulting firm specializing in planning and environmental applications.
1991-2001 Geo-Systems, Yarmouth, Maine
GIS analyst for a small geographic information systems consulting firm.

Education:
M.S., Land Resources, University of Wisconsin-Madison, 1996
Degree program focusing on GIS and Coastal Planning
Master’s Thesis: Developing an Integrated Marine GIS for the State of Maine
B.S., Geography, University of Wisconsin-Madison, 1989

General Professional Experience:
- Twelve years experience in the GIS field ranging from creating and updating GIS datasets, development of customized interfaces, and providing detailed analysis to solve client problems.
- Six years of experience created customized training to meet client needs.
- Ten years of experience working with municipalities using GIS data to enhance decision making.
- Extensive experience preparing maps for public presentation.
- Extensive experience customizing ArcView to meet client needs and add functionality.
- Use of CommunityViz software to assist municipalities in visualization and analyzing different growth strategies.
- Development of needs assessments to guide the implementation of GIS technology.
- Broad knowledge of GIS and related technologies for application to planning and environmental issues.

Software Expertise:
- ArcGIS
- ArcView/Avenue Programming
- Spatial Analyst
- 3D Analyst
- CommunityViz
- ArcInfo
- ArcCad
- AutoCAD
- Access
- Visual Basic

Professional Organization Memberships:
- Maine GIS Users Group
- URISA

Project Experience:
**Town of Falmouth**
Participation in community master planning process. Used CommunityViz software and other GIS tools to assist a citizen advisory panel in decision making about a variety of development options.

**Town of Scarborough**
Developed a build out analysis for Scarborough. Using current zoning and the parcel data to look at available land for development and determine the potential new lots which could be created under current zoning. Developed tax mapping program to produce tax maps from ArcView.

**Town of Yarmouth**
Developed a build out analysis for the town, similar in scope to that done in Scarborough. Developed customized interfaces for Public Works to input and access data about work orders, manholes, and sewer lines. Developed zoning coverage and other data sets for the town. Work with town staff to create a number of maps used in public presentations.

**Harding ESE, Portland, Maine**
Developed customized software applications allowing a variety of users to access chemical data results and to query the data spatially. This system has been implemented for a number of projects and used to provide analysis and mapping for a number of reports. Responsible for creating a large variety of maps for reports and client presentation.
Robert S. Bistrais, MA, GISP - Resume

Note: Mr. Bistrais is a UMM and UMA adjunct faculty member who teaches online GIS courses related to online GIS applications and programming.

Professional Experience
Provide all aspects of GIS support for state agencies and other parties. Responsibilities include GIS programming, creating and administering web services, supporting enterprise GIS environment, GIS support for Emergency Management, application development, cartographic design and production, and customer service. Primary technologies include ArcGIS Desktop, QGIS Desktop, ArcGIS Online, and ArcGIS Server.

Adjunct Professor, University of Maine at Augusta, 8/2010-present
Introduction to Geographic Information Systems: 300-level class introducing students to theoretical and practical GIS concepts using ArcGIS and QGIS software. Includes traditional classroom and delayed viewing sections. Responsibilities include preparing lesson plans and material, conducting lectures, preparing and grading assignments, mentoring students, and ensuring compliance with University policies and procedures.

Adjunct Professor, University of Maine at Machias, 1/2014-present
Web-Based Maps, Application and Services: 400-level class on web mapping and GIS. Class is conducted entirely online, using live video conference and delayed viewing technologies. Topics include server, client, mobile, and cloud concepts using major proprietary and open source solutions. Responsibilities include preparing lesson plans and material, conducting lectures, preparing and grading assignments, mentoring students, and ensuring compliance with University policies and procedures.

Provided all GIS services for a 20-town regional commission, using PC Arc-Info, Arcview, and Idrisi platforms. Prepared maps for town and regional plans. Digitized land use data for the region. Derived land cover layer from LANDSAT imagery. Prepared transportation plans. Collaborated on projects with County Forester’s office, USDA/NRCS district office, US Forest Service, local non-profit conservation groups. Mentored graduate students from University of Vermont and Middlebury College. Served as ACRPC’S representative at all GIS-related functions, including NEARC and VT Arc User’s Group as well as statewide committees.

Professional Certifications
Remote Pilot-Small Unmanned Aircraft Systems
Geographic Information Systems Professional (GISP)
GeoServer certified
**Education**

**Master of Arts, Geography, University of Vermont, Burlington, VT, 1996**
Attended on Fellowship while employed as Graduate Teaching Assistant

**Bachelor of Science, Professional Liberal Studies, Dowling College, Oakdale, NY, 1988**
Minored in Aeronautics

**Associate in Applied Science, Mechanical Technology, Suffolk County Community College, Selden, NY, 1985**

**Continuing Education**
Variety of IT and Geospatial subjects from various accredited institutions

**Skills and Experience**

<table>
<thead>
<tr>
<th>ArcGIS Desktop</th>
<th>Quantum GIS (QGIS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArcGIS Enterprise, Server, Online</td>
<td>GeoServer/OpenGeoSuite</td>
</tr>
<tr>
<td>Collector for ArcGIS</td>
<td>UMN MapServer/MapScript</td>
</tr>
<tr>
<td>PostGIS/PostgreSQL</td>
<td>Google Maps/Google Earth</td>
</tr>
<tr>
<td>Web Development</td>
<td>Java</td>
</tr>
<tr>
<td>HTML/JavaScript/CSS</td>
<td>GDAL/OGR</td>
</tr>
<tr>
<td>PHP</td>
<td>SQL</td>
</tr>
<tr>
<td>Python</td>
<td>LMS: Blackboard, Moodle</td>
</tr>
<tr>
<td>Survey123</td>
<td>KoboToolbox</td>
</tr>
</tbody>
</table>
**Executive Summary**

The University of Maine of Presque Isle (UMPI) is seeking permission to offer a Bachelor of Science in Computer Science (COS, B.S.). As described in the included proposal, proposed Computer Science program will not only serve the demand for computer science professionals but also provide support for the many computer applications in business, healthcare, mathematics, data analytics, education, sciences, and new and social media. UMPI successfully received a 5-year federal Department of Education grant to fund the development of a Computer Science, Bachelor in Science program with concentrations in Software Development and Information & Data Management. The major will be offered both in a live modality and UMPI’s competency-based YourPace programming.

<table>
<thead>
<tr>
<th>Academic Year (Fall)</th>
<th>2020</th>
<th>2021 (+15)</th>
<th>2022 (+15)</th>
<th>2023 (+15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected new university enrollment due to this program</td>
<td>5</td>
<td>20</td>
<td>35</td>
<td>50</td>
</tr>
<tr>
<td>With the support of this grant we will phase in the hiring of two ‘curriculum development specialist’ who will become tenure-track faculty in computer science, develop a new computer lab, and develop 17 new courses with both live and distance modalities. This program will serve a variety of existing majors on campus as well including Business, Mathematics, Biology, Environmental Science, Education, and Professional Communication and Journalism. This program will attract new students to UMPI and produce graduates in computer science to serve local, regional, and national demand in computer science and related disciplines. Further, by supporting existing programs on campus this program will support computer applications essential to many career areas. Note: YourPace CBE enrollment not currently reflected in these projections.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Estimated revenue beyond tuition and fees, if any | |
| Briefly describe source of this other revenue | We do not have other gift or philanthropic support at this time. As the program is built, we expect there could be public-private partnerships to support hardware, software, cloud or other resources where our students could benefit along with a local or regional business. |

| New FTE faculty and/or staff necessary for the degree program | +1 | +1 | - | - |
| Total new employee salary and benefits | 91,380 | 185,045 | 189,671 | 194,412 |
| Total other expenses (supplies, renovations, etc.) | 9500 | 9613 | 16728 | 16846 |

If new tuition, fees, and other revenue generated by this program will not fully offset the expenses necessary to deliver the program, provide a brief justification for adding the program and explain how the expenses of the program will be covered.

Projected revenue will exceed costs at over a 2:1 ratio (see below).
<table>
<thead>
<tr>
<th>Source</th>
<th>Total FY21</th>
<th>Total FY22</th>
<th>Total FY23</th>
<th>Total FY24</th>
<th>Total FY25</th>
</tr>
</thead>
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<tr>
<td><strong>Projected Enrollment</strong></td>
<td>5</td>
<td>20</td>
<td>35</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>In-state</td>
<td>5</td>
<td>17</td>
<td>29</td>
<td>41</td>
<td>48</td>
</tr>
<tr>
<td>Out-state</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td><strong>Tuition</strong></td>
<td><strong>$36,750</strong></td>
<td><strong>$161,130</strong></td>
<td><strong>$285,510</strong></td>
<td><strong>$409,890</strong></td>
<td><strong>$497,520</strong></td>
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<tr>
<td>In-state</td>
<td><strong>$36,750</strong></td>
<td><strong>$124,950</strong></td>
<td><strong>$213,150</strong></td>
<td><strong>$301,350</strong></td>
<td><strong>$352,800</strong></td>
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<tr>
<td>Out-state</td>
<td><strong>$0</strong></td>
<td><strong>$36,180</strong></td>
<td><strong>$72,360</strong></td>
<td><strong>$108,540</strong></td>
<td><strong>$144,720</strong></td>
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<tr>
<td><strong>Grants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title III Salary Support</td>
<td><strong>$101,965</strong></td>
<td><strong>$167,260</strong></td>
<td><strong>$146,788</strong></td>
<td><strong>$151,191</strong></td>
<td><strong>$0</strong></td>
</tr>
<tr>
<td><strong>Fees</strong></td>
<td><strong>$4,650</strong></td>
<td><strong>$18,600</strong></td>
<td><strong>$32,550</strong></td>
<td><strong>$46,500</strong></td>
<td><strong>$55,800</strong></td>
</tr>
<tr>
<td><strong>Gifts</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
</tr>
<tr>
<td>Total Revenue</td>
<td><strong>$143,365</strong></td>
<td><strong>$346,990</strong></td>
<td><strong>$464,848</strong></td>
<td><strong>$607,581</strong></td>
<td><strong>$553,320</strong></td>
</tr>
<tr>
<td>Net Revenue (Expense)</td>
<td><strong>$42,485</strong></td>
<td><strong>$152,333</strong></td>
<td><strong>$258,450</strong></td>
<td><strong>$396,323</strong></td>
<td><strong>$337,080</strong></td>
</tr>
</tbody>
</table>
Date: April 17, 2020
To: Dannel Malloy, Chancellor
   University of Maine System (UMS)
From: Dr. Robert Placido, VCAA

Regarding: UMPI Academic Program Proposal: B.S. Computer Science

Please find the attached program proposal from the University of Maine at Presque Isle (UMPI) to offer a B.S. in Computer Science (BSCS). The attached material includes a letter of support from President Ray Rice, as well as the full program proposal. This is a Competency Base Education (CBE) program with the potential to be a collaborative program with University of Maine at Fort Kent (UMFK).

The proposed CBE B.S. in Computer Science was reviewed and recommended by the Chief Academic Officers Council (CAOC) on April 16, 2020. I am pleased to also recommend this program for your approval.

<table>
<thead>
<tr>
<th>I approve</th>
<th>I do not approve for the reasons listed below</th>
<th>Additional information needed for a decision</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Approval of UMPI BSCS</td>
</tr>
</tbody>
</table>

Chancellor Dannel Malloy

Date

227
University of Maine System
Academic Program Proposal

Computer Science, B.S.

University of Maine at Presque Isle
Presque Isle, ME

Office of Academic Affairs

14 April 2020

Link: Table of Contents
Transmittal Letter of Support

181 Main Street
Presque Isle, ME 04769-2888 USA
www.umpi.edu
VOICE 207 768-9525
FAX 207 768-9552

14 April 2020

Dr. Robert Placido, Vice Chancellor of Academic Affairs
University of Maine System
259 Estabrooke Hall
Orono, ME 04469

Dear Dr. Placido:

We write to request your consideration of a new academic program proposal from the University of Maine at Presque Isle. The proposed Bachelor of Science degree in Computer Science program will have considerable value for the University and community. Given that we have received a 5-year U.S. Department of Education Title III grant, we have considerable support to establish the program. This program is important not only for its own merit as a major but also in the many supports it can provide other academic disciplines with extensive computer applications. The local and regional community and economy has considerable need for graduates with these skill sets. Finally, we see opportunities for collaboration with other UMS campuses and a great opportunity to bolster distance (especially CBE) teaching and learning.

We thank you for any consideration and will be glad to address any questions you may have.

Sincerely,

Ray Rice, Ph.D.
President and Provost

Jason Johnston, Ph.D. / Barbara Blackstone, M.S.
College Dean

Jason Towers, M.B.A.

Lorne Gibson, Ed.D., Ph.D.

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Board of Trustees Meeting - May 2020 - Attachments

Exec. Dir. Enrollment Management  Exec. Dir. Academic Development & Compliance

Carolyn Dorsey, M.S.A.
Exec. Dir. CBE Programs
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I. PROGRAM TITLE

Computer Science, Bachelor of Science

II. PROGRAM OBJECTIVES

A. Program Rationale

Computer Science programs serve not only the demand for computer science professionals but also provide support for the many computer applications in business, healthcare, mathematics, data analytics, education, sciences, and new and social media. UMPI successfully received a 5-year federal Department of Education grant to fund the development of a Computer Science, Bachelors in Science program with two concentrations in Software Development and Information & Data Management. With the support of this grant we will phase in the hiring of two ‘curriculum development specialist’ who will become tenure-track faculty in computer science, develop a new computer lab, and develop 17 new courses with both live and distance modalities. This program will serve a variety of existing majors on campus as well including Business, Mathematics, Biology, Environmental Science, Education, and Professional Communication and Journalism. This program will attract new students to UMPI and produce graduates in computer science to serve local, regional, and national demand in computer science and related disciplines. Further, by supporting existing programs on campus this program will support computer applications essential to many career areas.

B. General Program Goals

Goal 1: Develop a computer science program with two concentrations in order to educate students who can: 1) attain high-demand careers in programming, software development, and other traditional and emerging computer science careers, as well as 2) attain careers in emerging computer science application based careers in informatics and data analytics that will support enterprise, biomedical, or agriculture and natural resource applications.

Goal 2: Develop courses to support computer applications for majors in business, mathematics, education, science and other fields.

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Goal 3: Build courses with both traditional online and competency-based modalities to support asynchronous learning by traditional and non-traditional students and working professionals.

C. Learning Outcomes

We developed program-learning outcomes that are based specifically on ABET Computer Science Curriculum accreditation student characteristics for graduation from an accredited computer science program:

A graduate of UMPI’s Computer Science, B.S. will demonstrate:

An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.

An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs, both individually and as a team member.

An understanding of professional, ethical, legal, security and social issues and responsibilities.

An ability to analyze the local and global impact of computing on individuals, organizations, and society.

An ability to use current techniques, skills, and tools necessary for computing practice.

An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.

An ability to apply design and development principles in the construction of software systems of varying complexity.

III. EVIDENCE OF PROGRAM NEED
A. Market Analysis

The number of people employed in the computer science field is expected to grow over the next 10 years by 6.7% in the state of Maine, where over 4,000 job postings were identified just over the last 12 months (April 13, 2020). Only 6 institutions offer programs in this space in the state of Maine, and 3 of those are part of the larger University of Maine System (UM, UMF, USM). Turning to a nationwide perspective, a 15.11% growth expectation over the next 10 years is anticipated.

B. Educational, Economic, & Social Needs

In the area of information technology, the state of Maine projects 900 annual openings for the next 5-10 years. Traditionally, these positions require a four-year degree in computer science, with internship experience. In Maine, 89.1% of computer science job postings require a bachelor’s degree with the greatest number of postings in the following industries: Finance & Insurance (44%); Professional, Scientific, and Technical Services (24%); Information (8%); and Health Care and Social Assistance (7%) (https://www.burning-glass.com). The field of computer science is virtually recession-proof, providing significant opportunities for college graduates both in Maine and on a national front and demand is expected to remain strong due to the wide variety of computer applications being developed (https://www.jobmonkey.com/highpayingjobs)

C. Workforce Demands

According to WayUp, Computer Science entry-level jobs are one of the fastest-growing fields in Maine, with computer and information scientists earning an average salary of $100,660 per year; these positions are responsible for creating new computer programs and technologies and analyzing large customer information databases for companies and organizations. Salaries for software developers in the state of Maine are equally impressive, averaging $90,530 per year to create, edit, and test new software programs. Given that the average living wage in Maine is just $30,701, the prospect of a high-wage career is particularly alluring to UMPI.
current and prospective students. Software developer positions in Maine are expected to grow by an incredible 30% by 2020, much faster than average for all professions (https://www.wayup.com).

IV. PROGRAM OVERVIEW

A. Outline of required and/or elective courses

<table>
<thead>
<tr>
<th><strong>Core Courses</strong></th>
<th><strong>Credits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>Programming Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>Network Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Web Design</td>
<td>4</td>
</tr>
<tr>
<td>Object-Oriented Programming</td>
<td>4</td>
</tr>
<tr>
<td>Algorithm Theory and Development</td>
<td>4</td>
</tr>
<tr>
<td>MAT 131: Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>Mat 274: Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 201: Probability and Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>MAT 202: Probability and Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

  total credits 38

**Practical Learning Experience (choose one)**

<table>
<thead>
<tr>
<th></th>
<th><strong>Credits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>Senior Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

  total credits 3

**Select One of two Concentrations:**

**Software Development Concentration**

<table>
<thead>
<tr>
<th></th>
<th><strong>Credits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multimedia Design</td>
<td>4</td>
</tr>
<tr>
<td>Advanced Web Design</td>
<td>4</td>
</tr>
<tr>
<td>Software Engineering I</td>
<td>4</td>
</tr>
<tr>
<td>Software Engineering II</td>
<td>4</td>
</tr>
</tbody>
</table>

  total credits 16

**OR**

**Information and Data Management Concentration**

<table>
<thead>
<tr>
<th></th>
<th><strong>Credits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of Enterprise Data</td>
<td>4</td>
</tr>
<tr>
<td>Data Analytics</td>
<td>4</td>
</tr>
<tr>
<td>Management of Agriculture and Natural Resource Data</td>
<td>4</td>
</tr>
<tr>
<td>Bioinformatics</td>
<td>4</td>
</tr>
</tbody>
</table>

Link: Table of Contents
Choose 12 credits in electives from Business (BUS), Computer Science and Cybersecurity (COS), ENV 308 (Geographic Information Systems), or Mathematics (MAT)  
General Education Credits  
General Electives  
Total Credit Hours for degree

B. New and Displaced Courses

All new courses which have been created in 2019-2020 or will be developed over the coming several years are in the table below. We may displace one existing course, COS 105, Computer Programming, since we have added two additional programming courses that serve a broader range of existing and new needs in three programs: Mathematics, B.S., Cybersecurity, B.S., and Computer Science, B.S.

<table>
<thead>
<tr>
<th>Course Development Sequence for B.S. in Computer Science</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Courses for the B.S. in Computer Science (Core Courses)</strong></td>
</tr>
<tr>
<td>Introduction to Computer Science</td>
</tr>
<tr>
<td>Programming Fundamentals</td>
</tr>
<tr>
<td>Data Structures</td>
</tr>
<tr>
<td>Network Concepts</td>
</tr>
<tr>
<td><strong>New Courses for the B.S. in Computer Science (Software Development Concentration)</strong></td>
</tr>
<tr>
<td>Introduction to Web Design</td>
</tr>
<tr>
<td>Multimedia Design</td>
</tr>
<tr>
<td>Advanced Web Design</td>
</tr>
<tr>
<td>Object-Oriented Programming</td>
</tr>
<tr>
<td>Software Engineering</td>
</tr>
<tr>
<td>Software Engineering II</td>
</tr>
<tr>
<td><strong>New Courses for the B.S. in Computer Science (Information &amp; Data Management Concentration)</strong></td>
</tr>
<tr>
<td>Algorithm Theory and Development</td>
</tr>
<tr>
<td>Management of Enterprise Data</td>
</tr>
<tr>
<td>Data Analytics</td>
</tr>
<tr>
<td>Management of Agriculture and Natural Resource Data</td>
</tr>
<tr>
<td>Bioinformatics</td>
</tr>
<tr>
<td><strong>Elective Computer Science Courses</strong></td>
</tr>
<tr>
<td>Elementary Education Computer Science</td>
</tr>
</tbody>
</table>
C. Research and Program Integration

Faculty hired into the program will be required to develop an undergraduate research program by which students may gain experience and have the potential to present posters or talks at conferences, and to publish. Faculty will be encouraged to seek extramural funding to fund this level of research, and will be encouraged to collaborate with other UMPI faculty who have computer science research applications, including in cybersecurity, GIS, environmental, geological, biological, and biomedical sciences, mathematics, informatics, and other applications.

D. Experiential Learning Opportunities

The program consists of hands-on 3 and 4-credit coursework and will include a senior ‘capstone’ experience of either an internship, independent study, or senior thesis that will require each graduate to employ their computer science skills toward a computational solution to a novel research question or application in business, natural resources, healthcare, or related enterprise need.

E. UMS and UMPI Academic Collaborations & Impacts

There are three other UMS campuses that deliver a Bachelor’s degree in Computer Science, i.e. USM, UM, and UMF (see table below); additionally UMFK and UMA offer related degrees in related topics. UMPI currently has a Cybersecurity B.S., which has been developed through the UMS MOU and in collaboration with UMaine-Augusta. We see the development of this new Computer Science program to round out our own offerings and to provide more opportunity for collaboration with UMaine-Augusta. We are especially convinced of this potential because of our goal to develop online or competency-based distance education courses to serve the range of student demographics including non-traditional students and working professionals. Further, we have already discussed the potential of collaboration with UMFK, in particular to

---

**Secondary Education Computer Science** | Developed Year 4, Pilot tested Year 5
---
| **Conversion of Computer Science Core Courses to Online Delivery** |
| Introduction to Computer Science (Online/Hybrid) | Developed Year 4, Pilot tested Year 5 |
| Programming Fundamentals | Developed Year 5, Pilot tested Year 5 |
| Data Structures | Developed Year 5, Pilot tested Year 5 |
| Network Concepts | Developed Year 5, Pilot tested Year 5 |
combine our limited resources to meet local demand for computer science as well as the many applications from computer science that affect local businesses, healthcare, and agricultural and natural resources businesses and state/federal entities.

<table>
<thead>
<tr>
<th>Campus</th>
<th>Degree program(s) in computer science or related field</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Maine</td>
<td>Computer Engineering BS, Computer Science BS, Computer Science BA. Minors in Computer Science, Computer Engineering.</td>
</tr>
<tr>
<td>University of Maine Farmington</td>
<td>Computer Science BA. Minor in Computer Science.</td>
</tr>
</tbody>
</table>

**F. Distance and Hybrid Delivery**

This program has considerable opportunity for both traditional online delivery and for competency-based education (YourPace) delivery. We have plans within the Title 3 funding to develop most of the courses into one or both distance platforms. In fact, as we conceive and develop each course we will do this with delivery through these 3 modalities in mind. While the delivery will certainly vary by modality, it is much easier to consider the modalities in course development rather than to convert an existing (e.g. live course) to another modality. Especially given the ‘hands-on’ nature of learning computer science this discipline is very amenable to distance delivery.
G. Microcredential Opportunities

There are many microcredential opportunities in IT and computer science generally, e.g. from Microsoft, Oracle, and many other software, hardware, and networking computer firms – these types of microcredentials will be evaluated after we hire our first faculty member and develop relevant plans for our program. Additionally, we would be able to offer microcredentials or certificates and traditional minors in areas such as web design, data informatics, and computer science for educators. These opportunities will be developed in collaboration with other majors or in consideration of the needs of working professionals.

V. PROGRAM RESOURCES

A. Personnel

   i. Current and New Personnel

Fred Strickland, Assistant Professor of Cybersecurity, will contribute to introductory computer science, programming courses and any cybersecurity electives (see CV in Appendix A). Two new faculty will be phased in during Academic year 2020-2021 and 2021-2022 – one with a specialty in traditional computer science (programming, software development, etc.) and the second with more emphasis on advanced computer applications and informatics.

   ii. Faculty Assignments

New courses will be taught by two newly hired faculty or will be taught by one existing cybersecurity faculty for those courses (4) where courses meet the requirements of both majors. Thus, there will not be any workload adjustment. Courses in other disciplines (e.g. mathematics) will be included as part of regularly scheduled courses, and will increase enrollment in these courses but not workload for current faculty.

B. Library Acquisitions

In reviewing proposed materials for this new program, library director Roger Getz recommends the ACM Digital Library, which is a database that provides both journals and ebooks, along with other sources. It is problematic to purchase paper books for computer sciences, as they are usually outdated in 2-4 years. It costs approximately $4,500 annually. Since there are 2-3 other UMaine campuses that subscribe to this database, we could perhaps collaborate and/ or negotiate with the vendor to reduce per campus costs.

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C. New Equipment Requirements

Computer Science Lab will employ smart teaching technologies include the following components at a total cost of $17,475 per classroom unit Extron instructor controller with IN1608 processor, controller, DVD player, DTP and cabling ($12,000), Panasonic PT-RZ570W projector ($2,645), Chief Mount Projector Mount ($300), DaLite Tensioned Contour Electrol 52” X 92” Screen ($2,530). 20 Computers: HP CPU 512 SSD, Z2 G4 Cire i7, 8700 3.2 ghz, 16 gb, 512 ssd @ $1,542 each; HP 3 year Care Pack Warranty @ $76 each; 23” monitors @ $179 each; total/computer = $1797.65

D. Facilities Requirements

In project year one (Fiscal Year 2020), a 950 sq. ft. space on the ground floor of Folsom Hall (Room 101A) will be renovated to house a new Computer Science Lab. The lab will include 20 ergonomic student workstations. The lab will create an instructional setting for students to practice writing programs and develop software.

E. UMS and UMPI Resource Collaborations

See IV e., above; there is considerable potential for collaboration and cooperation, i.e. sharing faculty or courses with e.g. UMFK or UMA.

VI. FINANCIAL ANALYSIS

A. Five-year Business Plan

The five-year business plan assumes the program would launch in Fall, 2020 and one new hire would be in place to begin design and pilot courses. Assuming a starting salary of $60,000, benefits rate of 52.3% and an annual increase of 2.5% salary costs for the first and then second (added in FY 22), personnel costs are included in the table below. There would be no additional administrative or support costs. Equipment and facility expenses would largely be incurred and spent by the end of FY 20, whereby a full computer lab, with computers, and distance education technologies would be installed in a renovated computer science laboratory. Additional library expenses come mainly for the additional subscription to online databases, journals, and e-books. Marketing expenses will go mainly to materials, mailings, and recruiting efforts.

Table: Program resources and expenses
Revenue projections are based on projected enrollment of 5 students in the first year and the addition of 15 students each subsequent year. We assumed 20% out of state and 80% in state. Our FY21 estimate of 5 students (all in state) is based on the late timeframe. However, from experience launching the cybersecurity program in Fall, 2019, we added 11 students to that major in the first semester with a similarly late launch. Fee income was estimated at $30/credit for the comprehensive fee. Grant funding has already been secured to cover a sliding percentage of faculty expense as they transition from a ‘curriculum specialist’ developing, piloting, and implementing new courses to a full tenure-track assistant professor by the end of the grant whereby UMPI will bear the full salary expense in FY 25. We do not have other gift or philanthropic support at this time. As the program is built, we expect there could be public-private partnerships to support hardware, software, cloud or other resources where our students could benefit along with a local or regional business.
Table: Summary of Projected Revenue

<table>
<thead>
<tr>
<th>Source</th>
<th>Total FY21</th>
<th>Total FY22</th>
<th>Total FY23</th>
<th>Total FY24</th>
<th>Total FY25</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Projected Enrollment</strong></td>
<td>5</td>
<td>20</td>
<td>35</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>In-state</td>
<td>5</td>
<td>17</td>
<td>29</td>
<td>41</td>
<td>48</td>
</tr>
<tr>
<td>Out-state</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td><strong>Tuition</strong></td>
<td>$36,750</td>
<td>$161,130</td>
<td>$285,510</td>
<td>$409,890</td>
<td>$497,520</td>
</tr>
<tr>
<td>In-state</td>
<td>$36,750</td>
<td>$124,950</td>
<td>$213,150</td>
<td>$301,350</td>
<td>$352,800</td>
</tr>
<tr>
<td>Out-state</td>
<td>$0</td>
<td>$36,180</td>
<td>$72,360</td>
<td>$108,540</td>
<td>$144,720</td>
</tr>
<tr>
<td><strong>Grants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title III Salary Support</td>
<td>$101,965</td>
<td>$167,260</td>
<td>$146,788</td>
<td>$151,191</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Fees</strong></td>
<td>$4,650</td>
<td>$18,600</td>
<td>$32,550</td>
<td>$46,500</td>
<td>$55,800</td>
</tr>
<tr>
<td><strong>Gifts</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>$143,365</td>
<td>$346,990</td>
<td>$464,848</td>
<td>$607,581</td>
<td>$553,320</td>
</tr>
<tr>
<td><strong>Net Revenue (Expense)</strong></td>
<td>$42,485</td>
<td>$152,333</td>
<td>$258,450</td>
<td>$396,323</td>
<td>$337,080</td>
</tr>
</tbody>
</table>

**B. Scenario if costs exceed revenue**

Costs are not expected to exceed revenue, and by FY 25, we expect enrollments to cover the full faculty salary expenses.

**C. Existing sources of revenue**

A U.S. Department of Education Title III grant is the sole source of non-E&G funding. Maintenance, supplies, and increased portion of faculty salary expenses are being phased in starting in FY 22. These expenses do not exceed the projected revenue even with a modest new student admissions goal of 15 students per year.

**D. Should program be considered for differential tuition?**

No differential tuition expected for live or traditional online delivery; any additional costs for program delivery can be partly ameliorated by consideration of laboratory or program fees where appropriate. YourPace programming will employ reduced subscription-based tuition.

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VII. PROGRAM ASSESSMENT AND EVALUATION

In order to comply with UMS and NECHE standards, this program shall adhere to the University’s academic program planning and assessment policies. These policies include procedures for utilizing Program Assessment Logs, Academic Grades, Student Proficiency Tracking, Faculty Course Assessment Logs, Student Course Assessments, Current Student Surveys, Career Fields Relevance and Value Assessments, and Graduate Performance and Career Placement Assessments. Additionally, these policies include procedure for administrative and faculty systematic review and oversight of program planning and assessment, as well as comprehensive program self‐studies and reviews. The University’s academic program planning and assessment policy manual can be viewed in full here: https://drive.google.com/drive/u/1/folders/1v_X9zHHgHP3_6VB-HaAa9DXKos6L5pCh

A. Learning Outcomes Assessment Plans (Student Proficiency Tracking)

Faculty will develop rubrics for each program‐learning outcome in order to clarify varying levels of proficiency as well as to standardize scoring among program instructors. A student progression and assessment plan will be created to track expected proficiency development of students as they take the respective program courses, as well as, indicating courses in which students will receive direct assessments of their progress of each learning outcome. These direct assessments are recorded utilizing each courses’ gradebook function within the Mainestreet PeopleSoft platform. Student proficiency scores will be extracted from the Mainestreet platform annually, and analyzed to detect and redress issues with the curriculum and students’ proficiency progress.

B. Programs for Examination & Full Program Review Plans

UMPI’s Academic Affairs officers will review the program’s viability and provide its CAO with annual interim reports on enrollment and delivery success for a three‐year probationary period. A full program review will be conducted after the probationary period that will consist of external reviews, a self‐study, executive summary, and final report. The self‐study will address the following areas:

● Program Overview
  ○ History and Rationale
  ○ Students
  ○ Faculty and Instructors
Enrollment, Scope, Expenditures, and Revenues
- Mission and Major Proficiency Outcomes
- Major Categories of Competency Outcomes
- Requirements and Curriculum Organization

Interim Review Recommendations and Response Assessment
- University Strategic Planning and Mission Alignment Assessment
- External Service and Impact Assessment
- External Academic Agreements Assessment
- External Resource Agreements Assessment
- Academic Quality Assurance, Transparency, and Public Disclosure Assessment
- Enrollment Management and Student Success Assessment
- Extracurricular Opportunity and Engagement Assessment
- Advising and Student Services Assessment

Academic Assessment
- Student Academic Performance Assessments
- Student Research and Service Assessments
- Course Assessments
- Instruction Assessments
- Career Fields Relevance Assessments
- Graduate Performance and Career Placement Assessments

Curriculum and Program Development Assessment
- Proficiency Areas Development
- Competency Areas Development
- Course Development: Progression and Alignment of Outcomes
- Faculty and Instruction Development

Curriculum Assessment by University Faculty
- Curriculum Assessment and Recommendations
- Collaboration Assessment and Recommendations

Program Projections and Recommendations
- Students Success and Enrollment Projections and Recommendations
- Faculty Quality Projections and Recommendations
- Finance Projections and Recommendations
- Curriculum Projections and Recommendations
- Collaboration Projections and Recommendations

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VIII. APPENDICES

Appendix A: Faculty Vitae

Fred Strickland
University of Maine at Presque Isle
181 Main Street
Presque Isle, ME 0476

Education

Ph. D, Computer Science with Information Assurance Option
Auburn University.

MS, Computer Information Systems
Troy State University (Now known as “Troy University Montgomery Campus.”)

BS, Computer Science
University of Maryland at College Park.

AS, Communications Technology
Community College of the Air Force.

MA, Management and Supervision
Central Michigan University.

BA, Religion
Stetson
University.

Florida Community College at Jacksonville (Later known as “Florida Junior College at
Jacksonville.” Now known as “Florida State College at Jacksonville.”)

Professional Positions

Innovative Research

Scholar/No rank/Researcher, PreScouter. (April 2015 – Present)
Work remotely. Completed 68 research projects. Currently working on five research projects.
PreScouter, Inc.
1 North Franklin Street
Suite 1850
Chicago IL 6060

Academic

PhD/Assistant Professor of Cybersecurity and Computer Information Systems, Jointly assigned
to the University of Maine at Presque Isle and the University of Maine at Augusta (Official
start date of September 1, 2019 until)

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University of Maine at Presque Isle

No subordinate unit level below the College of Arts and Science for cybersecurity.

College of Arts and Sciences

Ph.D./No rank/Adjunct Instructor, South University. (April 3, 2007 – Fall 2016).

South University
Information Technology
College of Business
Montgomery
Campus

Ph.D./No rank/Adjunct Instructor,

Troy University
Montgomery Campus.
(September 1997 – Fall 2016).

Troy University Sorrell College of

Business

and

Department of Computer Science

College of Arts and Sciences

Montgomery Campus

Graduate Teaching Assistant and Graduate Research Assistant, College of Engineering,


NOTE: I taught one computer programming course at Auburn University Montgomery. This was when I was still a graduate student at Auburn University. I do not recall the details nor the dates.

NOTE: I taught two or so courses at H. Councill Trenholm State Technical College. This was when I was still a graduate student at Auburn University. I do not recall the details nor the dates.


Adjunct Instructor, Ricker College and Unity College. (1976 - 1980).

Government (Federal and State)

Programmer, Alabama Commission on Higher Education (2016- present)

Skills: ASP.NET Visual Basic programming; DNN (better known as DotNetNuke) 9 programming; JavaScript, Microsoft SQL Server Management Studio (SSMS), Microsoft SQL Server Reporting Services (SSRS), Microsoft Visual Studio, Microsoft Office, SAFE Software FME (program works with Shapefile or mapping files.)

Programmer, As an Advanced Systems Design contractor to the Alabama Commission on Higher Education (2016)


C# and Visual Basic programming; Microsoft SQL

Frequency Manager, HQ Civil Air Patrol. (July 17, 1995 - April 12, 2013).

Military

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Professional

Spectrum Manager/Master Sergeant (E-7)/Various locations, United States Air Force. (August 1974 - September 1995).

President and CEO, Strickland Technologies & Special Services, Inc. (August 20, 2009 - Defunct)

Licensures and Certifications

Completed various training programs on ethics, on cybersecurity, and on other workplace topics.

Professional Memberships

Member, Montgomery Chamber of Commerce. (January 2010 - January 2012). Student Member, Association for Computing Machinery. (2002 - 2009).

Development Activities Attended

Attended one-on-one staff meetings with Dr. Henry Felch and with Dr. Betina Tagle, University of Maine at Augusta, (August 15 through August 16, 2019). Note: While attending these meeting, attended the Maine cyber Range Opening at University of Maine at Augusta (“Ribbon cutting ceremony”).

Attended Alabama state training programs. Some covered handling PII and cybersecurity.
Continuing Education Program, "SCOB Informational Meeting: Effective Communication with Blackboard Tools," SCOB, Troy University, Troy, AL. (March 15, 2015).


Self-Study Program, "Preventing Discrimination and Sexual Violence: Title IX, VAWA and Clery Act for Faculty and Staff," EDMC. (October 29, 2014).


Self-Study Program, "QEP1102 - Modifications for ITS1000 – Computer and Information Literacy," EDMC. (June 13, 2014).

Self-Study Program, "QEP 1100 -- Classroom to Career," EDMC. (June 1, 2014 - June 4, 2014).


On-line via Go to Meeting, "Graduate Honor Council Training," South University, Savannah, GA. (April 30, 2014).

Self-Study Program, "FY'14 EDMC Records Management," EDMC University, Pittsburgh, PA. (February 3, 2014).


Seminar, "Lunch and Learn: Who's who at South University," South University, Montgomery, GA. (October 7, 2013).

Online Training, "QEP1002 - Programmatic Application of the Paul Elder Model," South University, Savannah, GA. (May 9, 2013 - May 23, 2013).


Online Training, "Teaching with Technology," South University, Montgomery, AL. (March 12, 2012).

Online Training, "QEP1000 - QEP Essentials - South University," South University, Montgomery, Alabama. (February 27, 2012).


Awards and Honors

Membership, Golden Key International Honour Society.

TEACHING

Teaching Experience

University at Maine at Presque Isle

COS 101, Introduction to Computer Science, 1 course (Projected for Fall 2019).

University at Maine at Augusta

ISS 240, Security policy and Governance, 1 course (Projected for Fall 2019

Troy University

CS 2265, Advanced Programming I, 1 course. CS 3323, Data Structures, 1 course.

CS 3330, Data Structures and Algorithms, 1 course. (Currently, teaching this course.)

CS 4420, Introduction to Database Systems, 1 course.

CS 5543, Software Engineering, 3 courses.

CS 5547, Applied Systems Analysis, 2 courses.


South University

ITS 1000, Computer and Internet Literacy; 2015 Spring, 2015 Winter, 2014 Fall (two sessions), 2014 Summer (two sessions), 2014 Winter, 2013 Summer, 2012 Summer, 2010 Winter

ITS 1101, Foundations of Information Technology; 2015 Winter, 2007 Summer (?)

ITS 1103, Ethics and Information Technology; 2013 Summer, 2011 Winter, 2008 Summer, 2007 Spring

ITS 1104, Human Computer Interface; (Course revised and is now coded as ITS 2108.) 2008 Spring, 2007 Summer

ITS 2104, Programming Logic; 2011 Summer, 2009 Fall, 2009 Winter, 2008 Spring, 2007 Summer [Alice is used as the teaching programming environment.]

ITS 2105, Programming I; 2011 Fall, 2010 Winter, 2009 Spring, 2008 Summer, 2007 Fall (Used Visual Basic.) [Microsoft Visual Studio C+ is used. In the past this course has been taught in Java and before that in Visual Basic.]

ITS 2106, Programming II, 2010 Spring, 2009 Summer, 2008 Winter (Used Visual Basic.)

ITS 2108, Human Computer Interface, 2014 Spring, 2013 Fall.

ITS 2111, Multimedia Web Development; 2012 Spring


ITS 3104, IT Security: Access and Protection; 2011 Fall, 2009 Spring, 2007 Fall

ITS 3105, Programming II; 2013 Spring (Microsoft Visual Studio C++ is used.)

ITS 3107, Technology Industry Assessment: Tools & Products; 2011 Winter (Discontinued course.)
ITS 3110, Applied Systems Analysis; 2012 Fall, 2010 Fall, 2009 Winter
ITS 4090, Applied Systems Analysis II; 2013 Winter
ITS 4011, IT Project Management; 2013 Spring, 2012 Spring (ITS 3112), 2010 Winter
ITS 4099, IT Research; 2014 Fall, 2013 Winter [Students are taught about LaTeX and about computer science research skills.]
ITS 4101, Fault Tolerance; 2009 Summer, 2008 Winter (Discontinued course.) ITS 4103, Information Technology Capstone I
ITS 4104, Information technology Capstone II; 2008 Fall (Discontinued course.) ITS 4211, Network Security; 2014 Spring, 2012 Winter, 2010 Summer
ITS 4231, Case Studies in Computer Security; 2013 Spring, 2012 Winter, 2010 Fall
MIS 3101, Application of Management Information Systems, 2014 Winter

Published Intellectual Contributions

Books


Refereed Journal Articles


Conference Proceedings


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Internal to Auburn University (While a graduate student)


General or Popular Press Articles


Published Intellectual Contributions

Note: PreScouter is a company that pulls together scientists, engineers, economists, analysts, and developers to apply their academic knowledge and problem-solving skills to challenges faced in industry. Since its founding in 2010, PreScouter has presented over 1,500 projects to more than 300 clients. As a PreScouter Scholar, I have completed over 68 projects. The deliverables included presentations, white papers, and research papers. I signed a non-disclosure agreement and so I am not permitted to submit the work to peer-reviewed journals. The following are the topic areas that I worked on:

Completed in 2015

<table>
<thead>
<tr>
<th>High Power RF Generator</th>
<th>Low Cost Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branding</td>
<td>Nano Scale</td>
</tr>
<tr>
<td>Acoustic Sensing</td>
<td>Energy Harvesting</td>
</tr>
<tr>
<td>Foam Project</td>
<td>Innovative Contact Lenses</td>
</tr>
<tr>
<td>High Power RF Generator</td>
<td>Low Cost Tags</td>
</tr>
<tr>
<td>Branding</td>
<td>Nano Scale</td>
</tr>
<tr>
<td>Acoustic Sensing</td>
<td>Energy Harvesting</td>
</tr>
<tr>
<td>Foam Project</td>
<td>Innovative Contact Lenses</td>
</tr>
</tbody>
</table>

Link: Table of Contents
<table>
<thead>
<tr>
<th>Completed in 2016</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded Controls</td>
<td>AI in the Home</td>
</tr>
<tr>
<td>Natural Language Processing (NLP)</td>
<td>Power of Water Flow</td>
</tr>
<tr>
<td>Automatic Bale Inspection</td>
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<td>AUV Maneuverability</td>
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<td>Innovative Contact Lenses Sensing</td>
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Ongoing Work in 2019

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<th>Enterprise Inventory Management</th>
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Presentations Given

Strickland, F. L. (Presenter & Author), Golden Key International Honour Society, "How to Write Better Papers and Theses," Auburn University Chapter. (September 2010).

Strickland, F. L. (Presenter & Author), Wang, Y. (Author Only), International Conference on Wireless Networks (ICWN '08), "HEAPINGS: From Concept to Simulation," WORLDCOMP. (July 2008).


Strickland, F. L. (Presenter & Author), Troy University Business Research Symposium, "What is the Role of Java in Education?" Sorrell College of Business. (2000).

Media Contributions

Internet

SouthSource.

Biographical information submitted to:

UMA
UMPI

HR newsletter entitled “The Parliament” Other campus publications

Awards and Honors

Membership, Upsilon Pi Epsilon Computer Science Honor Society.

SERVICE

University Service


Professional Service


Reviewer, Book, John Wiley & Sons, Inc. (December 31, 2007).

Public Service

Member, Air Force Association; life member.

Member, Auburn University Alumni, life member.

Member, Central Alabama Association for Chinese, Montgomery, AL, inactive.

Member, Non Commissioned Officers Association (better known as NCOA), life member.

Member, The Montgomery AL Chapter of the Auburn University Alumni Club, Montgomery, AL.

(April 2011 - Present).

Consulting

Academic, Strickland Technologies & Special Services, Inc. (August 20, 2009 - Defunct)

Awards and Honors

Service, Professional

Membership, Delta Epsilon Iota Academic Honor Society.

Service, University

Membership, Alpha Theta Chi Honor Society. Membership, Gamma Beta Phi Honor Society.

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Academic Affairs / UMPI
14 April 2020
To: Board of Trustees of the University of Maine System

From: Raymond J. Rice, President and Provost, University of Maine at Presque Isle

Re: Health Administration, B.S./ Program Proposal: Supplemental Overview

Date: May 4, 2020

This introductory supplement specifically addresses the manner in which the proposed Health Administration program (with concentrations in Community Health and Health Informatics) complements, collaborates with, and harmonizes with existing UMS Health-related programing specifically as well as the UMS academic portfolio generally; and its role in extending the portfolio of UMPI’s YourPace Competency-based programming (specifically designed for degree-completing nontraditional learners) on a national scale. We hope that this addition sets the stage for why the University of Maine at Presque Isle undertook the process of procuring a Federal Title III grant for the purpose of, among other things, developing two programs new to the institution, in both a traditional delivery modality and one unique to UMPI, not simply to attract more students to our institution but, indeed, to better prepare those students to be successful within their communities, wherever they might be located. Finally, as explained below, the addition of new programs is but one aspect of the overall Title III grant, whose primary goal is to increase graduation rates and the percentage of students immediately prepared to enter the workforce.

Addressing Board of Trustees Strategic Priorities

In recognition of the Board’s Declaration of Strategic Priorities (12/18), the University of Maine at Presque Isle immediately identified specific areas in which it could provide support in regards to (1) advancing workforce readiness, (2) increasing Maine’s educational attainment levels, and (3) aligning academic programs and innovation to drive student success.

In terms of demand, Burning Glass research notes that the professions associated with Health Administration programs, which include Medical Office Managers, Clinical Case Managers, Health Information Managers, Nursing Home/Home Health Administrators, and Medical Directors, are in especially high demand nationally, with over 168,000 jobs posted in the past twelve months (as of May, 2020) and a projected 10 year growth of 20.5% in terms of those jobs. Such positions are also in high demand regionally, with over 10,600 posted in New England in the past twelve months and projected regional growth at 15.4% over the next 10 years. Finally, in Maine alone, 486 postings were made in the past 12 months, with an expected growth of 12.1% over the next ten years. In addition, when searching in terms of Classification of Instructional Programs (CIP) codes using Burning Glass data, the “Health and Medical Administrative Services” alone identifies 1,874 postings within Maine over the past 12 months. “Health Services, General” identifies 522 postings in the same period. Thus, even in Maine, where there is a lower location quotient demand than nationally, the need is extremely high and
far exceeds, per year, the number of graduates produced by UMS collectively. The addition of Health Administration is, in this regard, particularly suited to meet the Board’s mandate to advance workforce readiness in high-need sectors.

When cross-walking high demand occupations with top regional/state workforce needs, both Burning Glass and Ruffalo Noel Levitz research confirm Healthcare Administration as within the “Top 30 Most in Demand Bachelor’s Degree Programs in Maine.” In fact, the Gray Associates Program Evaluation System (2018) confirmed it as the second most in demand. Market analysis conducted by Hanover Research and Noel Levitz back in 2015 for the University of Maine System in 2015 confirmed several new degree programs as having a high demand by current and potential future college students, of which Health/Healthcare Administration was one. Additionally, UMPI’s analysis of local market demand confirmed both this national and local need, particularly in its two proposed concentration areas: 1) Community Health, and 2) Health Informatics.

As noted later in the report, three UMS institutions currently offer programming in this sector. UMF’s Community Health Education serves an average of 70 students, conferring an average of 24 degrees/annum. USM provides a Public Health undergraduate degree serving 22 majors (no graduates as of yet due to its initiation in 2019) as well as a Master’s in Public Health with 56 majors and 19 graduates/annum. UMA provides a pathway into Public Administration for those entering with an associate’s degree in qualifying fields, with a total of 11 degrees/annum. Thus, the UMS, in toto, produces an average of 35 undergraduates in this field per annum (and that would be assuming all UMA graduates go into health fields, which is highly unlikely); USM should soon produce at least 35 graduate/annum as well. Even this projected total of 70 graduates, prior to UMPI’s proposed program, cannot begin to prepare enough graduates, in any demographic or modality, for the 2,396 total postings in Maine within the past 12 months as noted above.

In regards to Competency Based Education programming (see below for further information), Health Administration is identified as one of the two highest-demand programs nationally (“State of the Field: National Survey of Post-Secondary Competency-Based Education,” AIR, 2019). UMPI’s YourPace programs, competency-based, degree-completion programs designed specifically for nontraditional learners employing a six-start tuition subscription model, was thus perfectly suited not only to deliver a program that meets Maine’s workforce needs with a particularly high ROI in terms of median annual salary (BG notes the median salary at $70,260, with 75% of workers earning more than $53,332), but that will also meet the needs of a large portion of Mainers who continue to be under-served by UMS: adult learners with some college education but no degree.

This goal is of particular importance, in that, as noted in the Workforce Engagement Report provided to the BOT in March, 2019:

Maine lags behind New England in the proportion of the adult workforce with two- and four-year college degrees and advanced credentials (43% vs. 47.6%), putting the state at a competitive disadvantage not only from the perspective of economic and workforce development but also for community and family prosperity. Five counties in Maine have
attainment rates below 30% (Aroostook, Oxford, Piscataquis, Somerset and Washington, with the percentage of adults with no college at all ranging from 35% to as high as 46%). Education attainment also varies by race in Maine, with Native American and African American attainment between 25-27%. (Kimball, Placido, Neely, Redonnett, Thelen)

This disadvantage becomes particularly acute in Maine in regards to high-need careers supported by Health Administration programs, further compounded in the five counties with particularly low attainment rates.

Thus, the addition of both Computer Science and Health Administration as CBE (and “traditional” live formats) within the YourPace portfolio continues the alignment of UMPI’s academic programming toward workforce development for Aroostook County as well as, statewide and nationally, developing some of the highest-need competency-based programs that are unique not only to UMS but to all of New England’s public higher education.

Finally, the Workforce Engagement Report makes this particularly relevant recommendation: “it seems clear that the UMS must continue to invest in health care (particularly nursing), data and computer sciences (particularly cybersecurity), and special education, as well as selected engineering programs, and business administration and management.” With the addition of Health Administration, alongside Computer Science and Cybersecurity, both of which are also slated for CBE modality delivery, the University of Maine System, through UMPI’s YourPace programming, will be able to offer nationally-- as well as regionally-- a remarkably robust portfolio of competency-based programs designed specifically for Mainers (and others) looking to complete 2 and 4 year degrees.

Competency Based Programming

The University of Maine at Presque Isle is the only public institution in New England, through its YourPace degree-completion programs, to deliver completely asynchronous competency-based programming, 24 hours/day, 365 days/year. UMPI first received approval from NECHE to deliver CBE programming in its Business Administration program in Fall 2017. Since that time, UMPI has received approval to add Accounting, Education, History, Liberal Studies, and Political Science to its YourPace portfolio. As of September 1, 2020, UMPI will offer 9 majors (several with multiple concentrations) in the CBE format. The addition of Cybersecurity, Computer Science, and Health Administration (pending NECHE approval) will bring this portfolio up to 12 majors by 2021-2022. The Business program initially enrolled just under 100 majors in Fall 2017; since then, enrollments have been gradually increasing and we project (conservatively) 175 majors in YourPace programming this summer and fall (and that does not account for additional programs in Professional Communication, Psychology, and Criminal Justice slated to start on September 1).

As is the case with Computer Science, the Health Administration, B.S. was specifically proposed for inclusion in UMPI’s Title III: Strengthening University Programs grant in large part because it meets the highest national level criteria for new CBE programming. As noted in the American Institute for Learning’s (AIR) “National Survey of Postsecondary CBE Institutions” (https://www.air.org/sites/default/files/National-Survey-of-Postsecondary-CBE-Lumina-
October-2019-rev.pdf -- a project funded by the Lumina Foundation) four year institutions identified the following goals as most critical toward adopting such programming for a broader spectrum of learners: (a) expanding access to nontraditional learners; (b) improving learning outcomes; (c) responding to workforce needs; (d) improving completion rates; and (e) increasing enrollments. It is certainly no coincidence that these national-level considerations coincide precisely with the Board’s 2018 Declaration of Strategic Priorities. The top two programs in which CBE degrees are awarded nationally are nursing and health professions. As noted by Burning Glass, the fields of Healthcare Administration are particularly versatile, nationally as well as regionally, with graduates transitioning into 14 high-need occupation groups: registered/practical nursing, project and program managers, business analysis, healthcare administrators and managers, data analysis and mathematics, nursing management and training, general research, occupational safety and compliance, health education and counseling, health IT professionals, civil and safety engineering, youth and career counseling, chemical and physical science, mechanical and related engineers. As this will be the only CBE Health Administration program in New England (public and private), and the only such program (live or online) designed for adult learners and individuals currently in health care-related positions, this program-- both its modality and its demographic focus-- is particularly promising in regards to meeting workforce needs-- locally, regionally, and nationally-- as well as university and system enrollment targets. Just as importantly, the CBE modality of this program can help ensure maximum flexibility and opportunity toward individuals enrolled in such programs across Maine as their personal and/or professional situations might demand.

Academic Partnerships, working with UMPI, UMFK, and USM to scale online enrollment growth in selected programming, has expressed very high interest in the addition of both Computer Science and Health Administration to its CBE portfolio. Enrollments have already begun an upward trend over the spring semester, with spring session 1 and session 2 each showing significant increases and summer session 1 indicating an even further increase. Finally, the yield rate of applications to enrollment is remarkably high from AP recruitment, with 89 completed applications between January and April 2020 alone yielding 45 new enrollments (or a 50% yield rate, exceeding even the RN-BSN yield rate at UMFK, which is traditionally high for online programming). AP expects the economic and educational uncertainty in a post-COVID-19 environment to lead to greater interest in nontraditional learners regarding competency- and subscription-based programming.

**UMPI’s Proposed Health Administration and UMS Collaborations**

Public and Community Health fields are expansive, making it difficult for one university program to encompass all of the various parts of the field or do so well enough that students understand how to apply the skills in real-life. Thus, many programs across the country, and specifically in Maine, tend to focus what they call Public/Community Health programs on a specific subdiscipline of the field. To understand the field’s mission, we examined the broad definition written by Dr. Charles-Edward Amory Winslow (Yale University), one of the founders of modern public/community health programming, that professionals follow today:

*The science and the art of preventing disease, prolonging life, and promoting the physical health and efficiency through organized community efforts for the sanitation of*
the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and the development of the social machinery in which will ensure to every individual in the community a standard of living adequate for the maintenance of health.

For the sake of this supplement, we employ the broad term of “Community Health” as this is the first of the two concentrations we are seeking to create under the new Health Administration program. The above definition outlines the careful coordination between science and politics that is necessary to achieve productive community health outcomes. The science portion focuses on six different areas that share the common goal of disease prevention and health promotion: epidemiology, statistics, biomedical, social, behavioral, and environmental sciences. Epidemiology and statistics constitutes the assessment portion of community health in which a public health agency collects, assembles, analyzes, and makes available information on the health of a population. Assessment and policy development to develop strategies to improve the community’s health depend on a contextual understanding of the remaining listed sciences. And finally, policy, management, and administrative services assure availability and function of our medical system to provide needed services. The aim and mission of community health and services that enhance the health of a community, depend on the synergy of a variety of science applications and political and government cooperation.

It is particularly noteworthy that the UMS has the capacity to prepare students for this exact synergy of science and politics through its various public/community health programmatic offerings and that UMPI can play a critical role through integrating/collaborating with existing programs, as each institutional program constitutes a specific discipline of public or community health. Currently, UMA, UMF, and USM maintain programs within the broad Community Health portfolio. UMF prepares students to be Community Health Education specialists, focusing on assessing individual and community needs for health education. UMA empowers those with an associate degree in a health related field to continue on in their Public Administration B.S. program to combine their health care related education with an administrative component to eventually take on management responsibilities. And, at the University of Southern Maine, the B.S. in Health Sciences with a concentration in Healthcare Administration encompasses a wide breadth of interests in outpatient and community health settings, promotion, and education. The B.S. in Health Care Administration has a strong focus on business and managerial skills to prepare students to efficiently and effectively run health care facilities. Finally, the Muskie School of Public Service prepares students to develop public and health policy to help create a standard of practice in the prevention of health disparities.

The program concentration in Community Health of the Health Administration program proposed by UMPI has a specific emphasis on the science component to prepare students with the knowledge and application to assess, educate, and promote positive health behaviors to improve health and enhance quality of life of a population. UMPI plans to partner with UMF in developing a collaborative education model to include areas of Physical Education and Community Health Education (a proposal from UMF to this effect is currently being prepared for consideration by the CAOC with full support and significant collaboration from UMPI). To further meet the needs of students across the state, our program plans to collaborate with each
university to deliver programming suited to each student’s interests, and eventually, after year one, to develop a 4+1 program with USM to provide students (at the start of their undergraduate career) with a direct pathway to a Masters degree in the field. Nontraditional learners in the YourPace CBE modality will also have the opportunity to transfer into UMF’s Community Health Education program and USM’s Health Sciences/Health Administration.

The Community Health concentration at UMPI is also highly unique due to the rural community partnerships and community readiness that is an essential aspect of its curriculum, particularly in regards to direct field experiences. Of specific note, the Cary Medical Center in Caribou has conducted a recent “Community Health Needs Assessment” to determine the health of the regional community. They have identified the 6 areas of “Significant Health Needs” for Aroostook County as of 2019: Drug and Alcohol Abuse, Mental Health, Obesity, Cancer, Tobacco Use, and Diabetes. This assessment provides UMPI with a real-life curriculum direction to parallel what is learned in the classroom to challenges faced currently in rural communities in Aroostook County so that students can contribute to and immediately enter the workforce with necessary skills and qualifications. In addition, this Community Health Needs Assessment provides a snapshot of the most recent health status of the community prior to the novel coronavirus pandemic. Having this significant and thorough pre-pandemic information available will provide faculty and students of the program with research opportunities to determine how the coronavirus pandemic has impacted the identified community health needs for Aroostook County, which will mirror much of rural America.

Workforce development is a specific focus of this program, as is underscored by the planned collaborative components with the nursing program from UMFK administered on the Presque Isle campus. Dr. Stacy Thibodeau, DNP, MSN, RN with a concentration in public health administration will be working closely with Dr. Whiton to develop interprofessional programming with the nursing and other healthcare programs on campus. Similarly, the development of the program’s other concentration, Health Informatics, planned for implementation in Year 3 of the Title III grant, will collaborate with other established programs on campus such as computer science and cybersecurity. The faculty member hired for this program background will help to develop skills in managing programs for collecting and updating information for patient records as well as maintaining confidentiality of patient records, analyzing and interpreting public health data, working to improve quality and efficiency of health facilities, and manage finances, recordkeeping, and communications with medical staff. This career requires individuals to have a solid understanding of medical coding, clinical documentation, patient care, electronic medical records, HIPPA, associated computer programs, process improvement and project management.

In regards to the Cybersecurity, B.S. program, and the proposed Computer Science, B.S. (also part of the university’s Title III grant funding), UMPI and UMFK are also investigating sharing faculty positions (i.e., cooperating programs), thus helping to ensure both the financial viability of these positions at the two institutions in the long term. In addition, the Computer Science program, in tandem with UMPI’s Cybersecurity program, is maintaining core programmatic coursework in common with UMA to ensure not just transferability of students interested in the specific concentrations offered at each institution, but also aiding to ensure program viability through faculty collaboration in the delivery of specific coursework.
Faculty Qualifications

Dr. Tara Whiton, the recently hired faculty member to the program, received a Master of Science in Health and Human Development from Montana State University where she studied under the well-published Dr.’s Mary Miles and Dan Heil, who examine factors contributing to inflammatory diseases, and physical activity monitoring, respectively. The significant community health needs that are outlined in the Cary Medical Center’s “Community Health Needs Assessment” are related to chronic social and behavioral deficiencies that cause metabolic disturbances from an accumulation of inflammatory processes. These disturbances can be mediated by diet and exercise, two areas of expertise for this faculty member. At MSU, Dr. Whiton studied physical activity habits of aging adults, a thesis that earned her an award from the American College of Sports Medicine in the Northwest for Outstanding Student Research. Her main finding was that adults who were already active, were less active than they thought, and did not exercise like younger adults did, outlining the influence that behavior has on physical activity levels.

Dr. Whiton went on to obtain her PhD in Sport Physiology where she studied the upper limit of human physiology through a sport and nutrition lens. She conducted research for a specific NSF-certified sport nutrition supplement and her findings resulted in the company changing their entire marketing campaign from a “sport performance enhancer” to a “sport recovery agent”, a very important distinction in the use of supplementation on markers of inflammation and performance. Outside of academia, Dr. Whiton has held roles in sales, marketing, and communications at various agencies where her efforts have been directly tied to increased sales through the result of increasing a community’s physical activity participation through excellent communication, multi-platform marketing, and event management. She is viewed as uniquely qualified for both the concentrations from a variety of academic and professional experiences:

- Master of Science in Health and Human Development
- PhD in Sport Physiology and Performance
- Expertise in nutrition and exercise, two areas that ameliorate chronic disease
- Masters Research award for work on exercise behavior in aging adults
- Doctoral fellowship - researched NSF-certified sport supplement - changed company’s marketing campaign
- Professional experience in sales, marketing, community outreach with track-record of increasing community participation
- Professional experience as Dean of Athletics/Athletic Director with business, accounting, managerial skills in institutional setting
- Volunteer experience in community health settings such as an exercise specialist in Cancer Support Communities and helping in food banks

Enrollment Projections and Funding

It is important to note that the proposal’s conservative enrollment projections only account for “traditional” learners; it does not include potential future CBE enrollments. In our progress report to the Department of Education, we explicitly noted plans to accelerate the creation of the
CBE modality so it could be implemented in Fall 2021; this request has been noted and accepted. CBE programs, much like traditional programs, vary greatly in their enrollment size. However, we would expect that the CBE modality, given the national marketing provided by AP, would at least be double the proposed enrollments for the traditional modality. (This is still a highly conservative estimate, as Health Administration is ranked second highest in regards to CBE enrollment programs nationally, and per session enrollments are calculated far lower than our current Business Administration annual enrollments.) We thus estimate the following enrollments including CBE, with annual attrition rates applied as noted below (persistence/attrition rates not noted in the original proposal):
Enrollment attrition assumptions: The traditional modality assumes a first year class of 8 students, followed by a second year class of 12, then classes of 15 thereafter. Each new class employs a 60% retention rate from the first to second year, and a 70% rate of each year thereafter. We are assuming 50% graduate in four years and, of those who persisted, 50% graduate in four+. In regards to CBE enrollments, we are presuming double the number of students starting per year as those in the traditional modality, thus 16 in year 1, 24 in year 2, and 30 each year thereafter. Although our current CBE persistence rates are 70%, we are conservatively presuming 50% for the first year of students enrolled in the program, then 70% of the remaining students into the third year, and presuming 80% of those to graduate in three years and the remaining 20% in the fourth year. Fractions were rounded to the nearest whole. Please note that one major component of the Title III grant is to increase retention rates, so we should actually see these rates increase over time.

Funding through Title III Strengthening Institutions grants are assured so long as programs demonstrate progress toward their annual goals. UMPI assigned a senior level administrator, the Executive Director of University Advancement and External Affairs, to the role of Project Director, coordinating the overall development and submissions of interim reports. The grant provides $2.25 million over a five year cycle, that included funding for the Computer Science and Health Administration programs, but also more broadly for degree attainment level increase through experiential learning and career readiness activities delivered across the entire UMPI curriculum. This includes the establishment of experiential learning projects within all majors (i.e., internships, practicums, extended scientific research, extended service learning) and required of all graduates. UMPI has already requested permission to accelerate the phasing in of the CBE delivery modality and we fully expect funding to continue throughout the five years of the grant (CBE is identified by the Department of Education as a high interest area for both workforce development and degree completion). As the enrollment numbers illustrate, conservative projections for this single concentration alone will provide a significant ROI to the campus and UMS:

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<tr>
<td>CBE</td>
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<td>32</td>
<td>49</td>
<td>54</td>
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<tr>
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<td>123,634</td>
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<td>131,000</td>
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<td>Traditional tuition+fees</td>
<td>66,240</td>
<td>155,045</td>
<td>243,487</td>
<td>298,504</td>
<td>343,762</td>
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</table>
CBE tuition | 76,800 | 153,600 | 235,200 | 259,200
AP commission (50%) | 38,400 | 76,800 | 117,600 | 129,600
Total tuition | 66,240 | 193,445 | 320,287 | 416,104 | 473,362
Net gain | 6,669 | 89,585 | 196,653 | 288,762 | 342,362

Note: the tuition/fees were reduced proportionately from the projections noted in the original proposal to match the persistence rates applied above. CBE utilizes a $1400 flat subscription rate with no fees for each of six start dates per annum. The average student completes 4 periods for an average of $4800. CBE tuition is thus calculated by multiplying this average tuition rate to the annual headcount noted above. AP takes 50% of all tuition revenue from CBE programs as noted above.

As the revenue vs cost chart above illustrates, the total estimated revenue generated, including the differentiated CBE component (and with AP’s 50% commission), shows that the ROI to the campus will be 2.6 times that of the cost of both full time faculty in Health Administration.
Academic Degree Program Request

Benefit Statement

Executive Summary

The University of Maine of Presque Isle (UMPI) is seeking permission to offer a Bachelor of Science in Health Administration (HEA, B.S.) with concentrations in Community Health and Health Informatics. As described in the proposal, a comprehensive market analysis identified the fields of Healthcare Administration and Health Informatics to be in high regional demand, to offer numerous career opportunities for our students and areas residents, to be lacking in availability at postsecondary institutions in the area, and to be an appropriate addition to our university’s programming as well as feasible and sustainable long term for UMPI. The program has received funding by the US Department of Education’s Strengthening Institutions Program (Title III grant). The degree plan will include face-to-face classroom instruction as well as the development of online modalities (UMPI’s competency-based YourPace programming).

Projected new university enrollment due to this program

<table>
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<tr>
<th></th>
<th>2020</th>
<th>2021 (+12)</th>
<th>2022 (+15)</th>
<th>2023 (+15)</th>
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| UMPI will collaborate with other UMS campuses, such as UMFK’s Nursing Program, UMPF’s Community Health Education Program and USM’s Master’s in Public Health, in developing this new bachelor’s degree. This will allow us to better serve students and provide opportunities for graduate studies and/or local healthcare providers, ensuring appropriate training to support their workforce needs. More specifically, our analysis of local market demand led us to two specializations within the Health Administration degree program: 1) Community Health, and 2) Health Informatics. Our comprehensive analysis has led us to these programs areas and we have found them to 1) be in particularly high regional demand, 2) offer numerous career opportunities for our students and areas residents 3) severely lacking in availability at postsecondary institutions in the area, and 4) an appropriate addition to our university’s programming as well as feasible and sustainable long term for UMPI. Note: YourPace CBE enrollment not calculated in these projections at this time.

Briefly describe any other anticipated enrollment benefit

Estimated revenue beyond tuition and fees, if any

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<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
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</table>
| We do not have other gift or philanthropic support at this time. As the program is built, we expect there could be public-private partnerships to support hardware, software, cloud or other resources where our students could benefit along with a local or regional business.

Briefly describe source of this other revenue

New FTE faculty and/or staff necessary for the degree program

<table>
<thead>
<tr>
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<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
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<tbody>
<tr>
<td>+1</td>
<td>-</td>
<td>+1</td>
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Total new employee salary and benefits

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<tr>
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<th>2020</th>
<th>2021</th>
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</thead>
<tbody>
<tr>
<td>83380</td>
<td>85881</td>
<td>103,820</td>
<td>123634</td>
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</tr>
</tbody>
</table>

Total other expenses (supplies, renovations, etc.)

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<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
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</thead>
<tbody>
<tr>
<td>4200</td>
<td>73775</td>
<td>22300</td>
<td>6900</td>
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</table>

If new tuition, fees, and other revenue generated by this program will not fully offset the expenses necessary to deliver the program, provide a brief justification for adding the program and explain how the expenses of the program will be covered.
Projected revenue will exceed costs at over a 2:1 ratio (see below).

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<tbody>
<tr>
<td>In State</td>
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<tr>
<td>Out of State</td>
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<td></td>
<td></td>
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<tr>
<td>Total Enrollment</td>
<td>8</td>
<td>20</td>
<td>35</td>
<td>50</td>
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<tr>
<td>Tuition</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>In State</td>
<td>$58,800</td>
<td>$127,449</td>
<td>$221,761</td>
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<td>Out of State</td>
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<td>Total Tuition</td>
<td>$58,800</td>
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<td>Fees</td>
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<td>Total Enrollment Revenue</td>
<td>$66,240</td>
<td>$182,407</td>
<td>$329,037</td>
<td>$481,459</td>
<td>$491,089</td>
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</tbody>
</table>
Date: April 17, 2020
To: Dannel Malloy, Chancellor
    University of Maine System (UMS)
From: Dr. Robert Placido, VCAA

Regarding: UMPI Academic Program Proposal: B.S. Health Administration

Please find the attached program proposal from the University of Maine at Presque Isle (UMPI) to offer a B.S. in Health Administration (BSHA). The attached material includes a letter of support from President Ray Rice, as well as the full program proposal. This is a Competency Base Education (CBE) program with the potential to be a collaborative program with University of Maine at Fort Kent (UMFK), University of Maine at Farmington (UMF), and the University of Southern Maine (USM).

The proposed CBE B.S. in Health Administration was reviewed and recommended by the Chief Academic Officers Council (CAOC) on April 16, 2020. I am pleased to also recommend this program for your approval.

<table>
<thead>
<tr>
<th>I approve</th>
<th>I do not approve for the reasons listed below</th>
<th>Additional information needed for a decision</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td>Approval of UMPI BSHA</td>
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</tbody>
</table>

Chancellor Dannel Malloy

Date
BACHELOR OF SCIENCE IN HEALTH ADMINISTRATION (COMMUNITY HEALTH and HEALTH INFORMATICS)
Transmittal Letter of Support

14 April 2020

Dr. Robert Placido, Vice Chancellor of Academic Affairs
University of Maine System
259 Estabrooke Hall
Orono, ME 04469

Dear Dr. Placido:

We write to request your consideration of a new academic program proposal from the University of Maine at Presque Isle. The proposed Bachelor of Science degree in Health Administration program will have considerable value for the University and community. Given that we have received a 5-year U.S. Department of Education Title III grant, we have considerable support to establish the program. The local and regional community and economy has considerable need for graduates with these skill sets. Finally, we see opportunities for collaboration with other UMS campuses and a great opportunity to bolster distance (especially CBE) teaching and learning. UMPI will collaborate with other UMS campuses, such as UMFK’s Nursing Program, UMF’s Community Health Education Program and USM’s Master’s in Public Health, in developing this new bachelor’s degree. This will allow us to better serve students and provide opportunities for graduate studies and/or local healthcare providers, ensuring appropriate training to support their workforce needs.

We thank you for any consideration and will be glad to address any questions you may have.

Sincerely,

Raymond J. Rice, Ph.D. Barbara Blackstone, M.S.
President and Provost Dean of College of Professional Programs
PROGRAM OBJECTIVES

2 NARRATIVE DESCRIPTION OF PROGRAM
RATIONALE

GENERAL PROGRAM GOALS (LIMIT TO 3-5)

3 SPECIFIC STUDENT LEARNING
OUTCOMES OR BEHAVIORAL OBJECTIVES (LIMIT 5-8)

EVIDENCE OF PROGRAM NEED
4A. EXISTENCE OF EDUCATIONAL, ECONOMIC, AND SOCIAL NEEDS TO INCLUDE CITATIONS OR SPECIFIC AUTHORITIES OR STUDIES
CONSULTED.

B. FOR 2-YEAR PROGRAMS, INDICATE POTENTIAL EMPLOYERS WHO HAVE REQUESTED THE PROGRAM AND THEIR SPECIFIC EMPLOYMENT PROJECTIONS

C. DETAILED SURVEY OF SIMILAR PROGRAMS THAT ARE OFFERED WITHIN THE UNIVERSITY SYSTEM, OR OTHER HIGHER EDUCATION INSTITUTIONS OF OTHER AGENCIES WITHIN THE STATE.

D. ENROLLMENT PROJECTIONS FOR FIVE YEARS. (SUPPORT DATA ATTACHED).

PROGRAM OVERVIEW.

A. OUTLINE OF REQUIRED AND/OR ELECTIVE COURSES.

B. DEVELOPMENT OF NEW COURSES AND/OR WHAT THEY MAY DISPLACE

C. TYPE OF RESEARCH ACTIVITY, IF ANY, IN PROGRAM DESIGN

D. NATURE OF INDEPENDENT STUDY, CLINICAL EXPERIENCE, AND/OR FIELD PRACTICUMS EMPLOYED IN CURRICULUM DESIGN

E. IMPACT OF PROGRAM ON EXISTING PROGRAMS ON THE CAMPUS

PROGRAM RESOURCES

A. PERSONNEL

1. VITA OF EXISTING FACULTY WHO WILL ASSUME MAJOR ROLE FOR PROGRAM TO BE INCLUDED IN THE APPENDIX; OR THE NEED FOR NEW FACULTY (See Appendix)

B. CURRENT LIBRARY ACQUISITIONS AVAILABLE FOR NEW PROGRAMS

C. NEW EQUIPMENT NECESSARY FOR THE NEW PROGRAM AND PLAN FOR ITS ACQUISITION AND IMPLEMENTATION

D. ADDITIONAL SPACE REQUIREMENTS, IF ANY, INCLUDING RENOVATIONS.

E. EXTENT OF COOPERATION WITH OTHER PROGRAMS, BOTH ON THE INITIATING CAMPUS AND OTHER CAMPUSES

TOTAL FINANCIAL CONSIDERATION

APPENDIX
The University of Maine at Presque Isle (UMPI) is requesting permission to plan a BS in Health Administration. The proposed launch date is for Fall semester of 2020 and is being funded by the US Department of Education’s Strengthening Institutions Program (Title III grant). Staffing structure, equipment, supplies, and other resources were identified in this grant application to ensure effective implementation of the bachelor's degree program. Course development will be phased in over five years, with courses developed in one year, then pilot tested and analyzed the year after development. Initially the degree plan will include face-to-face classroom instruction, then it will evolve to include the development of online modalities (distance learning and UMPI’s competency-based YourPace). Community Health and Health Informatics concentrations will be developed over the 5 years within this major, and a new Health Administration Instructional Lab will be created with funding provided by the Title III grant.

UMPI will collaborate with other UMS campuses, such as UMF’s Nursing Program, UMF’s Community Health Education Program and USM’s Master’s in Public Health, in developing this new bachelor’s degree. This will allow us to better serve students and provide opportunities for graduate studies and/or local healthcare providers, ensuring appropriate training to support their workforce needs.

Through extensive research using Burning Glass and Ruffalo Noel Levitz research, UMPI identified relevant, high demand occupations that aligned with regional and statewide workforce needs—listed as one of the “Top 30 Most in Demand Bachelor's Degree Programs in Maine” with Healthcare Administration ranking second in the list (Gray Associates Program Evaluation System, 2018). Market analysis conducted by Hanover Research and Noel Levitz for the University of Maine System in 2015 confirmed several new degree programs that were already on the UMPI radar as having a high demand by current and potential future college students. Further analysis, discussions and a review of external expert studies provided additional support for the programs initially viewed as highly likely; these sources included the US Bureau of Labor Statistics, Maine Bureau of Labor, Northern Maine Development Corporation, the Northeast Development Workforce Board, and Maine’s Labor Shortage (Maine Development Foundation and the Maine State Chamber of Commerce). Additional studies included Emerging Markets, Emerging Workforce (CEI, Capital for Opportunity and Change), Maine’s Critical Workforce and Labor Market Challenges and A Profile of Socioeconomic Measures on Aroostook County, Maine (Economic Profile System, February 28, 2016). More specifically, our analysis of local market demand led us to two specializations within the Health Administration degree program: 1) Community Health, and 2) Health Informatics. Our comprehensive analysis has led us to these programs areas and we have found them to
in particularly high regional demand, 2) offer numerous career opportunities for our students and areas residents 3) severely lacking in availability at postsecondary institutions in the area, and 4) an appropriate addition to our university's programming as well as feasible and sustainable long term for UMPI.

Health Informatics professionals will be responsible for managing programs for collecting and updating information for patient records as well as maintaining confidentiality of patient records. Working to improve quality and efficiency, informatics graduates may also manage finances and recordkeeping, and communications with medical staff. This career requires individuals to have a solid understanding of medical coding, clinical documentation, patient care, electronic medical records, HIPPA, associated computer programs, process improvement and project management.

GENERAL PROGRAM GOALS (LIMIT TO 3-5)

1. To prepare students to become health investigators and advocates
2. To prepare students to conduct health research and implement research findings
3. To prepare students to become educators and leaders in healthcare
4. To prepare students to be professional and culturally competent life-long learners for success in graduate school, work in professional organizations, and/or obtainment of certifications such as MCD’s Community Health Workers and Chronic Conditions Training Program

SPECIFIC STUDENT LEARNING OUTCOMES OR BEHAVIORAL OBJECTIVES (LIMIT 5-8)

- Students will gain health literacy education to understand the pathophysiology of different disease states and how those manifest in chronic physical and mental conditions
- Students will learn applied business/management skills in healthcare settings such as: ethics, financing and accounting, health data analytics, applied statistics, leadership and management
- Assess needs for community health education and develop educational materials
- Educate public on healthy habits, lifestyles, and health screenings for positive changes in their communities
- Learn to act as a bridge between providers and individuals to promote health, reduce disparities, and improve service deliveries
- Promote wellness equity by providing culturally appropriate health information to clients and providers
- Assist in navigating the health and human services system and advocate for individual and community needs; find funding/write grants for increased access to health programs
- Collect and analyze community health needs assessment data in partnership with community professionals
EVIDENCE OF PROGRAM NEED

A. EXISTENCE OF EDUCATIONAL, ECONOMIC, AND SOCIAL NEEDS TO INCLUDE CITATIONS OR SPECIFIC AUTHORITIES OR STUDIES CONSULTED.

The fields of Healthcare Administration and Community Health/Health Informatics are growing, and at UMPI we are dedicated to equipping students with degrees that they can directly apply in their fields of study. The US Bureau of Labor Statistics (2019) identifies healthcare as the fastest-growing job sector of the US economy, with job growth estimates for medical and health service managers increasing 18% from 2018 to 2028. Likewise, the Maine Dept. of Economic & Community Development (Strategic Planning Summit, 2019) states that health care (including administrative positions) continues to be one of Maine’s largest employers with anticipated job growth of more than 12% (Labor Insight Jobs, Burning Glass Technologies, 2019). In Maine, 62% of health administration positions require a bachelor’s degree, while 13% require a master’s degree (https://www.onetonline.org). Median salaries range from $62,060 to $69,000 for health information managers and health administration positions, respectively, salaries that are both above the average living wage for our region ($30,701) (Burning Glass, 2020).

The fields of Healthcare Administration are extremely versatile, with graduates of these programs usually transitioning into one of 14 different occupation groups: Registered/practical nursing, project and program managers, business analysis, healthcare administrators and managers, data analysis and mathematics, nursing management and training, general research, occupational safety and compliance, health education and counseling, health IT professionals, civil and safety engineering, youth and career counseling, chemical and physical science, mechanical and related engineers (Burning Glass, 2020). These occupation groups can lead to the following career outcomes: Patient Advocate / Navigator, Community Health Worker, Nursing Home / Home Health Administrator, Healthcare Administrator, Health Educator / Coach, Safety Manager, Safety Specialist / Coordinator, Ergonomist, Health and Safety Engineer, Registered Nurse, Program Manager, Project Manager, Business / Management Analyst, Social Science Researcher, Researcher / Research Associate, Clinical Case Manager, Clinical Analyst / Clinical Documentation and Improvement Specialist, Data / Data Mining Analyst, Nursing Manager / Supervisor, Youth Counselor / Worker, and Physicist. UMPI’s new Health Administration bachelor’s degree program will prepare individuals for immediate careers as well as the pursuit of graduate studies.

Additionally, the Cary Medical Center in Caribou, ME has recently completed a “Community Health Needs Assessment and Implementation Strategy” for Aroostook county and will continue to update and conduct community needs research every 3 years. The results of extensive analysis yielded Significant Health Needs for the community. The 2019 Significant Health Needs identified for Aroostook County are:

1. Drug and Alcohol Abuse – 2016 Significant Need
2. Mental Health – 2016 Significant Need
3. Obesity – 2016 Significant Need
4. Cancer
5. Tobacco Use – 2016 Significant Need
6. Diabetes – 2016 Significant Need

Further, the hospital has developed implementation strategies for these six needs including activities to continue/pursue, community partners to work alongside, and measures to track progress. This information and community action is a unique resource for UMPI students and such strong community ties and opportunities do not readily exist in other Health Administration programs. Faculty will capitalize on such unique opportunities by designing a curriculum for students that parallel these community health challenges to become educated community-health workers while supporting our current workforce.


B. FOR 2-YEAR PROGRAMS, INDICATE POTENTIAL EMPLOYERS WHO HAVE REQUESTED THE PROGRAM AND THEIR SPECIFIC EMPLOYMENT PROJECTIONS

N/A

C. DETAILED SURVEY OF SIMILAR PROGRAMS THAT ARE OFFERED WITHIN THE UNIVERSITY SYSTEM, OR OTHER HIGHER EDUCATION INSTITUTIONS OF OTHER AGENCIES WITHIN THE STATE.

UMPI will collaborate with other UMS campuses, such as UMFK’s Nursing Program, UMF’s Community Health Education Program and USM’s Master’s in Public Health, in developing this new bachelor’s degree.

D. ENROLLMENT PROJECTIONS FOR FIVE YEARS. (SUPPORT DATA ATTACHED).

Enrollment projections for the Health Administration program include
- First year enrollment of 8 students,
- Second year enrollment of 12 new students for a total of 20,
- Third year enrollment of 15 new students for a total of 35 students,
- and beyond the third year, we anticipate enrolling 15 new students annually in the degree program, for a total enrollment of 50 students annually.

Of these new students, we would anticipate that 80% of new student enrollment would be instate students, with 20% out of state students annually beyond the first year.

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<tbody>
<tr>
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<td>29</td>
<td>41</td>
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<tr>
<td>Out of State</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>9</td>
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<tr>
<td>Total Enrollment</td>
<td>8</td>
<td>20</td>
<td>35</td>
<td>50</td>
<td>50</td>
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</table>
PROGRAM OVERVIEW.

The new B.S. in Health Administration with concentrations in Community Health and Health Informatics addresses community-level health and the impact on individuals, families, and the associated community. Subdisciplines of public health, the Community Health and Health Informatics concentrations have regional relevance with an emphasis on the specific needs of and challenges facing rural communities. This program promotes access to healthy lifestyles through research and policies, health literacy education and promotion, information management and efficiency, and health and human sciences. Community challenges that incorporate industry practitioners and organizations are practical, outside the classroom service-learning and internship experiences available for students.

A. OUTLINE OF REQUIRED AND/OR ELECTIVE COURSES.

**Required Core Courses for the program:**
- Intro to Health Administration
- Intro to Community Health
- Health Care Delivery Systems
- Health Care Statistics and Research
- Legal and Ethical Aspects of Health Care
- Medical Terminology/Coding
- Health Care Practicums/Internships

**Electives for the Community Health Concentration:**
- Principles of Disease Prevention and Health Professions
- Principles of Epidemiology
- Management and Grants
- Planning Health Promotion
- Child and Adolescent Health
- Community Nutrition
- Food Systems and Resources
- Maternal and Infant Health and Nutrition
- Environmental Health

**Electives for the Health Informatics Concentration:**
- Privacy and Security of Health Records
- Electronic Health Records
- Health Care Data Analytics
- Health Information Management Applications
- Reimbursement Methodology
B. DEVELOPMENT OF NEW COURSES AND/OR WHAT THEY MAY DISPLACE

Since this is a new program offering, all courses will be newly developed. We plan to develop 5 courses each semester, to teach or pilot teach the following semester. Note: some of these courses are subject to change as development gets underway, but at this time we believe this is a good reflection of the core curriculum that will be developed for the major. Additionally, all courses will be developed for online modalities, providing students the ability to enroll and complete the degree program through more traditional online formats as well as UMPI's YourPace competency-based education modality.

<table>
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<tr>
<th>Course Development Sequence for B.S. in Health Administration</th>
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<th>Pilot Teach</th>
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<tr>
<td>Introduction to Health Administration</td>
<td>Developed Year 1, Pilot tested Year 2</td>
<td>Spring 2020, 2020-2021</td>
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<tr>
<td>Medical Terminology</td>
<td>Developed Year 1, Pilot tested Year 2</td>
<td>Spring 2020, 2020-2021</td>
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<tr>
<td>Health Care Delivery Systems</td>
<td>Developed Year 1, Pilot tested Year 2</td>
<td>Spring 2020, 2020-2021</td>
</tr>
<tr>
<td>Health Care Statistics &amp; Research</td>
<td>Developed Year 1, Pilot tested Year 2</td>
<td>Spring 2020, 2020-2021</td>
</tr>
<tr>
<td>Legal and Ethical Aspects of Health Care</td>
<td>Developed Year 1, Pilot tested Year 2</td>
<td>Spring 2020, 2020-2021</td>
</tr>
<tr>
<td>Introduction to Health Administration</td>
<td>Developed Year 1, Pilot tested Year 2</td>
<td>Spring 2020, 2020-2021</td>
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<td><strong>New Courses for the B.S. in Health Administration (Community Health Concentration)</strong></td>
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<tr>
<td>Principles of Disease Prevention and Health Professions</td>
<td>Developed Year 1, Pilot tested Year 3</td>
<td>2020-2021, 2021-2022</td>
</tr>
<tr>
<td>Management and Grants</td>
<td>Developed Year 1, Pilot tested Year 3</td>
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</tr>
<tr>
<td>Planetary Health Promotion</td>
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</tr>
<tr>
<td>Child and Adolescent Health</td>
<td>Developed Year 1, Pilot tested Year 3</td>
<td>2020-2021, 2021-2022</td>
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<tr>
<td>New Courses for the B.S. in Health Administration (Health Informatics Concentration)</td>
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<td>Privacy and Security of Health Records</td>
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</tr>
<tr>
<td>Electronic Health Records</td>
<td>Developed Year 3, Pilot tested Year 4</td>
<td>2021-2022, 2022-2023</td>
</tr>
<tr>
<td>Health Care Data Analytics</td>
<td>Developed Year 3, Pilot tested Year 4</td>
<td>2021-2022, 2022-2023</td>
</tr>
<tr>
<td>Health Information Management Applications</td>
<td>Developed Year 3, Pilot tested Year 4</td>
<td>2021-2022, 2022-2023</td>
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<tr>
<td>Reimbursement Methodology</td>
<td>Developed Year 3, Pilot tested Year 4</td>
<td>2021-2022, 2022-2023</td>
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<td>New Courses for the B.S. in Health Administration (Experiential Courses)</td>
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<td>Health Administration Practicum I</td>
<td>Developed Year 4, Pilot tested Year 5</td>
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<td>Health Administration Practicum II</td>
<td>Developed Year 4, Pilot tested Year 5</td>
<td>2022-2023, 2023-2024</td>
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<tr>
<td>Health Administration Practicum Capstone</td>
<td>Developed Year 4, Pilot tested Year 5</td>
<td>2022-2023, 2023-2024</td>
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</table>

Conversion of Health Administration Core Courses to Online Delivery

- Introduction to Health Administration (Online/Hybrid) - Converted Year 5, Pilot tested Year 5 - 2023-2024, 2023-2024
- Medical Terminology (Online/Hybrid) - Converted Year 5, Pilot tested Year 5 - 2023-2024, 2023-2024
- Health Care Delivery Systems (Online/Hybrid) - Converted Year 5, Pilot tested Year 5 - 2023-2024, 2023-2024
- Health Care Statistics & Research (Online/Hybrid) - Converted Year 5, Pilot tested Year 5 - 2023-2024, 2023-2024
- Legal and Ethical Aspects of Health Care (Online Hybrid) - Converted Year 5, Pilot tested Year 5 - 2023-2024, 2023-2024

C. TYPE OF RESEARCH ACTIVITY, IF ANY, IN PROGRAM DESIGN

This program will contain research methods courses, experiential learning opportunities, informatics and data analysis, and senior capstones.

D. NATURE OF INDEPENDENT STUDY, CLINICAL EXPERIENCE, AND/OR FIELD PRACTICUMS EMPLOYED IN CURRICULUM DESIGN

In addition to course curriculum, students will be required to take practicum/internships throughout their college experience. We plan to partner with at least 30 different internship sites to provide students with a vast array of options that may suit their individual interests, or give them the chance to explore areas that they are unfamiliar with. Service-learning will also
be embedded within the curriculum so that students are able to apply classroom knowledge in the field to gain practical skills.

E. IMPACT OF PROGRAM ON EXISTING PROGRAMS ON THE CAMPUS

The addition of the HA program will have a significant crossover with other majors offered at UMPI including the Business Administration, Social Work, Exercise Science, Nursing, and all Healthcare related programs. Students will have the option to choose electives from those programs if they suit their interests within the Health Administration field.

PROGRAM RESOURCES

A. PERSONNEL

1. VITA OF EXISTING FACULTY WHO WILL ASSUME MAJOR ROLE FOR PROGRAM TO BE INCLUDED IN THE APPENDIX; OR THE NEED FOR NEW FACULTY (See Appendix)

UMPI will employ a total of two full time Assistant Professors of Health Administration/Curriculum Development Specialists to lead curriculum development in each new degree concentration areas: Health Administration, Community Health (yrs.1-5 of the Title III grant), and Health Administration, Health Informatics (yrs. 3-5 of the Title III grant). Each Assistant Professor/Curriculum Specialist will lead course development efforts for their individual new degree concentration and be responsible for ensuring curriculum is submitted to and gains approval from all pertinent UMPI, University of Maine System, state, and national accrediting entities. The specialists will be lead instructors for new courses to be pilot tested. In years 4 and 5, curriculum specialists will convert to online/hybrid delivery the core program courses (originally developed for on-campus delivery).

Curriculum Specialist positions will be filled in accordance with the program development schedule and be institutionalized with UMPI absorbing an increasing percent of salary/benefit costs beginning year three. Qualifications include a Master’s (PhD preferred) degree in Computer Science (2 positions) and Health Administration, or related field (2 positions), a minimum of 5 years postsecondary teaching experience, a minimum of 3 years curriculum development experience, and demonstrated understanding of employment trends/opportunities within their discipline of expertise across Aroostook County, the state of Maine, and the greater region in order to facilitate student placement upon graduation.

2. SPECIFIC EFFECT ON EXISTING PROGRAMS OF FACULTY ASSIGNMENTS TO NEW PROGRAM. LIST NECESSARY FACULTY ADJUSTMENTS.
N/A - New faculty hires

B. CURRENT LIBRARY ACQUISITIONS AVAILABLE FOR NEW PROGRAMS

- Healthcare acquisitions in library are limited but we hope to expand hands on resources with funds from the Title III grant
○ $3500 from Title III grant for education materials for journal subscriptions

C. NEW EQUIPMENT NECESSARY FOR THE NEW PROGRAM AND PLAN FOR ITS ACQUISITION AND IMPLEMENTATION

The following equipment will be purchased for the Health Administration program. These expenses will be funded 100% by the US Department of Education’s Title III grant, totaling nearly $63,000 over the five-year grant.

D. ADDITIONAL SPACE REQUIREMENTS, IF ANY, INCLUDING RENOVATIONS.

A new Health Administration Instructional Center will be developed during Years 2 and 3 of the program. The classroom will be determined by the Space Committee. This space will be renovated to house the new center with ease of access to UMPI’s other health programs (Nursing, Exercise Science, MLT, and Biology). UMPI’s Facilities Director, Joseph Moir, will serve as renovation project manager to ensure renovation projects are progressing as planned. He will be responsible for working with UMPI’s administrative staff, Title III Director, Health Administration faculty, Procurement, Facilities personnel, and external vendors performing work. Mr. Moir will ensure adherence to all rules and regulations related to required internal bidding processes and federal guidelines, including assurance of contractor compliance with Davis-Bacon regulations and adherence to federal requirements for payment of prevailing wages for contractors used for renovation projects.

Renovation costs totaling nearly $31,000 (to include the purchase of 20 ergonomic student workstations for the center) will be paid by the Title III grant as outlined below:
E. EXTENT OF COOPERATION WITH OTHER PROGRAMS, BOTH ON THE INITIATING CAMPUS AND OTHER CAMPUSES

In addition to existing programs on the UMPI campus (e.g. Social Work and Business) UMPI will collaborate with other UMS campuses, such as UMFK’s Nursing Program and UMF’s Community Health Education Program, in developing this new bachelor’s degree. This will allow us to better serve students and provide opportunities for local healthcare providers, ensuring appropriate training to support their workforce needs.

TOTAL FINANCIAL CONSIDERATION
Once fully launched, we project the new Health Administration degree programs will generate an enrollment of 41 FTE in-state students and 9 FTE out-of-state students annually, resulting in total revenue of $491,089, which includes $440,756 in tuition revenue and $50,333 in fee revenue each year. Additionally, a very modest 18% (or 9) HA students living in campus housing annually will yield $78,642 in room and board revenues. Therefore, total annual revenues of $569,731 will more than cover annual salaries and benefits of the two faculty members teaching in the program.

![Table of Expenditures](image-url)
Assumptions:

- FY21 proposed tuition rate of $239/cr hr/in state student; $382/cr hr/out of state student
- FY21 proposed unified fee rate of $31/cr hr/student
- 15 credit hours/semester/student
- Student Mix: 80% instate; 20% out of state
- 2% annual increase in tuition and fee rates/year beginning 2021-2022
APPENDIX

Vita for major faculty role:

**TARA K. WHITON**

7 Summer Street, Bethel, ME 04217 | 207-730-3289 | tara.k.whiton@gmail.com

**EDUCATION**

*East Tennessee State University*

Doctor of Philosophy 2019

Sport Physiology and Performance

Dissertation: “The Influence of Branched-Chain Amino Acid Supplementation on Measures of Central and Peripheral Fatigue in Training Athletes”

Honors/Awards: Doctoral Fellow 2017-2019

*Montana State University*

Master of Science 2014

Exercise Physiology and Nutrition


*University of Southern Maine*

Bachelor of Science 2011

Exercise Physiology and Biology

**AWARDS**

- Doctoral Fellowship – Center of Excellence and Sport Science Education
  August 2017 – August 2019

- Outstanding Master’s Student Research Award – 2014 NWACSM
  May 2014

**TEACHING EXPERIENCE**

*Gould Academy – STEM Faculty*

2018-present

Seminar – Nutrition, Health, and Wellness; AP Statistics; Anatomy and Physiology

*East Tennessee State University - Adjunct*

2017-2019

Teaching Aerobic Conditioning, Advanced Exercise Physiology II, Structural Kinesiology w/ Lab, Wellness for Life
University of Maine at Presque Isle - Adjunct  
2017-2018  
Physiology of Exercise  
Designed, created, and proposed curriculum for new Exercise Science major  

Montana State University – Graduate Teaching Assistant  
2012-2014  
Advanced Exercise Physiology w/ lab, Kinesiology  

PUBLICATIONS AND PAPERS  
“The effects of chronic branched-chain amino acid supplementation on the perceptions of stress and soreness from daily training in collegiate distance runners” – in submission 2019  

“The effects of chronic branched-chain amino acid supplementation on running kinematics: Single case research” – in submission 2019  

“Coaching considerations: The importance of strength training before power training for collegiate female athletes” – in submission 2018  

“Innate biological differences can explain differences in lean muscle mass functionality that contribute to differences in sport performance: A review” – in submission 2018  

“Salivary alpha-amylase: A potential biomarker for athlete monitoring” – in submission 2018  

“Beyond statistical significance: Unifying the language between sport scientists and coaches” – conference presentation – Coaches College 2018  

“Changes in stretch-shortening cycle and jump height after a competitive training season in collegiate distance runners” – conference presentation – Coaches College 2018  

“Preliminary analysis: Moderating the stress perception of collegiate distance runners using branched-chain amino acids” – conference presentation - Southeast and National American College of Sports Medicine Conference 2018  

“Branched-chain amino acid supplementation may produce marginal reductions in task-specific muscular soreness in collegiate distance runners” – conference presentation - Southeast and National American College of Sports Medicine Conference – Chattanooga, TN and Minneapolis, MN  2018  

“The contribution of muscle cross-sectional area to jump height in collegiate athletes” – conference presentation - Southeast American College of Sports Medicine Conference - Greeneville, SC 2017

“Characterizing the competition season training habits of competitive masters-aged cross-country skiers” – conference presentation - Winter Sports Interest Group - National ACSM conference - San Diego, CA – Award Finalist 2015

“Characterizing the pre-season training habits of competitive masters-aged cross-country skiers” – conference presentation – Northwest ACSM Conference - Wenatchee, WA - Awarded 2014 Outstanding Masters Student Research Award 2014

“Characterizing the training habits of recreational masters-aged cross-country skiers” – Abstract - published in the International Congress on Science and Skiing 2013

“Reliability and validity of using a hand-held GPS monitor to control over-ground hiking speed” – conference presentation – NWACSM Salem, OR 2013

MEMBERSHIPS

NSCA – National Strength & Conditioning Association
Certified Strength and Conditioning Specialist

ISSN – International Society of Sport Nutrition
Certified Sport Nutritionist

ACSM - American College of Sports Medicine
Certified Exercise Physiologist

ISAK – International Society for Anthropometry and Kinanthropometry
Licensed Anthropometrist Level 1
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Unified Accreditation Authorization

2. INITIATED BY: Dannel P. Malloy, Chancellor

3. BOARD INFORMATION: BOARD ACTION: X

4. OUTCOME: BOARD POLICY: 308
   Increase Enrollment
   Improve Student Success and Completion
   Relevant Academic Programming
   Enhance Fiscal Positioning
   Support Maine through Research and Economic Development

5. BACKGROUND:

   At the Board’s July 2019 meeting, Chair James Erwin stated that it was the Board’s sense that, in order for UMS to move forward with and attain the strategic goals established in the December 2018 Declaration of Strategic Priorities to Address Critical State Needs, UMS needs to be able to deliver significantly more collaborative, market-relevant cross-campus programming. In recent years, however, there have been significant challenges to developing, delivering, and managing such programs at the scope, scale, and pace the Board determines to be necessary to meet Maine’s higher education attainment needs, some of which stem from the fact that each UMS university is accredited separately from other universities in the System.

   Recognizing these challenges, Chair Erwin asked UMS Chancellor Dannel Malloy to review UMS’s accreditation status and provide recommendations for what accreditation structure would be most likely to permit UMS to achieve its strategic goals and best serve the higher education needs of its students and the State of Maine.

   In his September 2019 report to the Board, detailing historical consideration of a System-wide accreditation back more than three decades, Chancellor Malloy recommended that UMS universities begin a process to unify their accreditations to a statewide accreditation within the University of Maine System based on a series of Guiding Principles that were developed by the Chancellor, the UMS Presidents, and Senior System Staff and reviewed by staff at UMS’s regional accreditor, the New England Commission of Higher Education (NECHE). Accepting that report on September 16, the Board directed the Chancellor to visit UMS campuses to gather input from key academic leaders and staff to determine how to successfully implement unified accreditation, continue discussions with NECHE and the U.S. Department of Education as necessary to ensure UMS planning and
actions incorporate relevant input from those entities, and develop, with input from System Presidents and campuses, a process, plan, and timeline to seek unified accreditation from NECHE that could successfully transition UMS to a statewide accreditation model, to be presented at the November 17-18, 2019 Board meeting.

UMS and University leaders presented the *UMS Summary of Process Considerations and Framework for Pursuing Unified Accreditation* report and answered questions from the Board at the November 17-18 meeting.

As directed in the November 18, 2019 Resolution following Board acceptance of the report, the Chancellor, Senior System staff, Presidents, and university-based accreditation leaders have been planning how to prepare the necessary substantive change application to NECHE to transition existing university institutional accreditations to a unified accreditation for the University of Maine System, including by engaging University Faculty Senate and Assembly leadership to discuss an appropriate academic governance model and process.

UMS leaders will discuss the Chancellor’s *Unified Accreditation Final Recommendation* included with the Board’s materials and the Chancellor will ask the Board to adopt the following resolution authorizing UMS to seek unified accreditation from NECHE.

**6. RESOLUTION:**

That the University of Maine System Board of Trustees directs the Chancellor and UMS University Presidents to prepare and submit an appropriate substantive change application to the New England Commission of Higher Education (NECHE) to transition the current separate UMS university institutional accreditations to a unified institutional accreditation for the University of Maine System, covering all of its universities, in such time as to permit NECHE’s initial consideration by June 30, 2020.

Board approval for unified accreditation is subject to the following conditions:

1. Unified accreditation must be planned, applied for, and administered in such ways as will follow the University of Maine System Charter, the Guiding Principles established by the Chancellor in consultation with System University Presidents, the Board’s policies on academic freedom and shared governance, and current labor agreements. The unified accreditation model planned and developed by the Chancellor and UMS University Presidents will be structured to achieve the highest quality student experience, academic program quality and relevance, and university financial stability in accord with the System’s mission in service to the State of Maine.

2. As the UMS substantive change application to NECHE is developed, the Chancellor and UMS University Presidents will review UMS Board Policies to ensure alignment with the unified accreditation model developed in compliance with NECHE’s *Standards for Accreditation*. The Chancellor and UMS University Presidents will report and provide recommendations to the Board no later than the May 2020 meeting of any changes in existing UMS Board policies, or necessary new policies, that should be adopted for alignment.

1/17/2020
3. At each Academic and Student Affairs Committee meeting and every other Board meeting through NECHE’s comprehensive evaluation of UMS’s unified accreditation, there will be a standing agenda item for the Chancellor and Presidents to report to the Board on progress, status, and issues. The Chancellor is directed to, as soon as is practical, present to the Board a project timeline and milestones, together with a tracking plan with which to monitor progress both toward achieving unified accreditation and the Board’s strategic priorities that it advances.

4. Recognizing that NECHE’s Standards for Accreditation themselves establish the essential elements of higher education institutional quality, by which UMS universities, acting together in the System in a unified accreditation model, will work together to improve the System’s quality, increase its effectiveness, and continually strive for collaborative excellence, the Board expects that the process of developing the unified accreditation substantive change application and comprehensive evaluation report will necessarily identify opportunities to improve System quality on each of the NECHE Standards’ elements. At the same time, the Board expects to maintain progress and momentum on its Declaration of Strategic Priorities and Key Performance Indicators. Therefore, as part of the report called for in Paragraph 3 above, the Chancellor will include proposals for aligning UMS’s Strategic Priorities and KPIs with the outcomes intended to be achieved through unified compliance with NECHE’s Standards at the System level.

5. It is the Board’s expectation that unified accreditation will not require substantial increases to System administration or governance at the expense of university administration and governance or academic program and student support resources. UMS University Presidents and the Chancellor will develop and seek from NECHE a unified accreditation model that coordinates System and university-based resources in System-wide coordinated efforts to achieve compliance with NECHE Standards across the System, and sustain those changes to ensure high quality educational experiences in accord with the Standards.

6. Appreciating the Chancellor’s transparency in the unified accreditation effort to date, the Board directs that all System and university constituencies be updated regularly on the status of UMS’s application for unified accreditation, progress toward achieving the same, and the nature and extent of challenges and successes that are encountered throughout the System and at UMS universities in the process.

Attachments:
Unified Accreditation Final Recommendation

1/17/2020
May 13, 2020

Board of Trustees  
University of Maine System  

Via email to: Ellen N. Doughty, Clerk of the Board of Trustees, edoughty@maine.edu

Dear Members of the UMaine System Board of Trustees:

We have recently become aware of a proposed Change to Board Policy 310 on Tenure and Amending Academic & Student Affairs Duties and Responsibilities (dated April 27, 2020). We hold that these proposed changes are unnecessary, and run counter to accepted principles of governance of institutions of higher learning and, moreover, they appear to violate NECHE standards. In particular, the proposed change that specifies Board authority to approve tenure-track faculty lines would unnecessarily slow the process of hiring faculty and would introduce uncertainty into the planning and implementation of our academic programs and their hiring decisions. We therefore urge you to table the motion pending a more thorough examination with the benefit of input from the university community and outside constituents.

The proposed change to Policy 310 would require ASA Committee and Board approval before all new or replacement tenure lines are filled, over and beyond the current process of decision by appropriate university administrators and consultation within the University of Maine System. Such a change would go beyond governance and the setting of policy, which is the purview of the Board, into day-to-day administration at each of our universities, which is best done by qualified university and UMS management.

We are also concerned by the proposed change of language with respect to tenure itself. The Board awards tenure recognizing that a faculty member has made significant contributions in the areas of teaching, scholarship and service. When the predetermined high standard is achieved, the decision should not appear to be arbitrary or at anyone’s discretion. “Awarding” tenure describes the process appropriately, while “granting” is questionable.

The proposed change appears not to be in compliance with NECHE Standard 3.11: “The board delegates to the chief executive officer and, as appropriate, to others the requisite authority and autonomy to manage the institution compatible with the board’s intentions and the institution's mission” (https://www.neche.org/resources/standards-for-accreditation/#standard_three). Under the proposed policy change, the Board would not delegate requisite authority on faculty lines; rather, it would make the decision itself.

Moreover, the proposed change to Policy 310 is inconsistent with the University of Maine System’s own Substantive Change Application to NECHE:

“The seven universities of the institution make decisions about instructional staff based on their distinct missions” ... “UMS university CAOs share plans for the hiring of permanent faculty yearly at the CAOC (tenure-track or just-cause-eligible)” (https://drive.google.com/file/d/1k5N2r5-nSK7t7cMSVVNzZMPNkFei6iA/view, lines 1129-1130; 1132-1133).
Note that there is no mention of Board approval. If the Board were to approve each new or refilled faculty line, then the Board would make these decisions, not the seven universities. We are concerned that the draft Substantive Change Application reports one planning and hiring process to NECHE, while the proposed policy change would set in place a very different process. For this reason, we reserve the right to seek clarification from NECHE on these matters.

In conclusion, let us assure you that we understand and appreciate the difficult task that you have. We thank you for your service, which is significant and invaluable. You exercise your fiduciary duties by a) hiring the administration, b) approving strategy and budget, and c) exercising appropriate monitoring and control. We want the Board to be successful in its governance duties. We urge you to continue to adhere to best governance practices.

Sincerely,

David W. Townsend, President
UM Faculty Senate

William Nichols, President-Elect
UM Faculty Senate

Deborah Saber, Vice President-Elect
UM Faculty Senate

Michael Scott, Past President
UM Faculty Senate

cc. Dannel Malloy, Chancellor
Robert Placido, Interim Vice Chancellor
James Thelen, General Counsel and Chief of Staff
Joan Ferrini-Mundy, President
James McClymer, UMS AFUM president
Ivan Manev, Professor and Faculty Senate Representative
UM Campus Senate/Assembly Presidents
May 15, 2020

The Board of Trustees and Chancellor Malloy
University of Maine System

Via email to Ellen N. Doughty, Clerk of the Board of Trustees, edoughty@maine.edu

Dear Members of the UMS Board of Trustees and Chancellor Malloy:

The University of Maine at Augusta Faculty Senate met on May 13 and voted in support of the University of Maine letter dated May 13 regarding proposed changes to Policy 310, Change to Board Policy 310 on Tenure and Amending Academic & Student Affairs Duties and Responsibilities (dated April 27, 2020).

We agree with the UMaine Senate’s position that the changes are unnecessary and that the current process maintains both faculty purview in the hiring process and System oversight.

We appreciate the opportunity to provide feedback on Policy changes.

Sincerely,

Gillian Jordan
Faculty Senate President

CC: Dannel Malloy, UMS Chancellor
    Robert Placido, Interim Vice Chancellor
    James Thelen, General Counsel and Chief of Staff
    Rebecca Wyke, President of UMA
    David Townsend, UM Faculty Senate President
UNIVERSITY OF MAINE SYSTEM
Board of Trustees
AGENDA CALENDAR

A working calendar for developing agendas and submitting various reports to the Board has been designed in order to allow maximum planning in organizing presentations and reference materials. The calendar identifies the timetable for submission of items and reports which recur every six to 24 months as well as special reports with specific time lines. It does not include general items which are ordinarily on each Board meeting agenda; e.g., reports and consent agenda. The following agenda is subject to change consistent with scheduling, reporting, and other factors that the Chancellor deems necessary to consider such matters.

The Calendar will be updated and included in the Board Meeting materials on a regular basis.

JANUARY:
- Academic Affairs
  - Honorary Degree Nominations
- Fiscal Matters
  - State Research Report

MARCH:
- Academic Affairs
  - Tenure Nominations
  - Tenure Report
- Governance/Administration
  - Board Calendar
  - Establishment of Nominating Committee
- Student Affairs
  - Spring Enrollment Update
- Fiscal Matters
  - Multi-Year Financial Analysis

MAY:
- Fiscal Matters
  - Budgets and Student Charges
- Governance/Administration
  - Election of Board Officers
  - Confirmation of Board of Visitors

JULY:
- Governance/Administration
  - Appointment of Standing Committees
- Human Resources
  - Annual Report on Named Chairs and Professorships

SEPTEMBER:
- Fiscal Matters
  - Appropriation Request
  - Multi-Year Financial Analysis

NOVEMBER:
- Academic Affairs
  - Awarding of Academic Degrees
  - Academic Year Calendar
- Fiscal Matters
  - Review of Annual Financial Report
- Student Affairs
  - Official Fall Enrollment Update

January 2020
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The Workforce Profile is an overview of the UMS workforce, reflecting full-time and part-time regular employees. This represents the 4,635 regular employees that were actively receiving a paycheck as of October 31, 2019. Additionally, there were 875 part time faculty members teaching in the Fall 2019 semester.

Count and Gender by Category

- Of the 4,635 UMS employees reported: 2.2% are administrators, 27.5% are faculty, 40.8% are salaried staff, and 29.5% are hourly paid staff.
- Overall, between the seven campuses, women make up a slight minority of full-time faculty at 47.7% of the population. UMA, UMF and USM has women comprise the majority of full-time faculty at their locations.
- Women are well represented among administrators at 48%. There are 100 administrators, 75 of whom are in the Management Group. In the Management Group women make up a slight majority at 52% of the cohort.
- Most of the regular hourly employee cohort consists of women at 53.9% of the population.

Average Salary by Category

- The average salary for administrators is $143,376; $80,370 for faculty; $54,846 for salaried staff; and $33,303 for hourly staff.
- Wage increases were negotiated and implemented during the fiscal year 2020 resulting in a net increase across the board averaging around 3%.
- Most faculty are appointed on an academic year basis and the annual salary is rated for the nine-month appointment.

Age

- The average age by employee category is: Administrators average age is 55, faculty 52, salaried 46, and hourly employees average age is 50. These averages have held steady with little variation over the past few years.
- A significant proportion of faculty (45.4%), hourly (48.1%) and administrators (54%) are 55 or older.
- The majority of salaried employees (69.7%) are under the age of 55

Highest Degree

- As would be expected, a high number of faculty (69.5%) hold terminal degrees. Administrators (38%) also hold a significant number of terminal degrees.
- 15.2% of hourly staff have self-reported a baccalaureate or higher degree. 55.1% of salaried employees report holding a baccalaureate or higher degree. Education level was not reported by 31.9% of employees.
Race and Ethnicity

- There is limited diversity as measured in the federal ethnicity categories. Overall, 6.2% of employees system wide report a minority race/ethnicity. This is a significant increase over the 4.4% minority self-reported last year.
- The University of Southern Maine at 8% and the University of Maine at 7% have the highest reported minority populations.
- The University of Maine reports the highest quantity of minority employees with 155 employees followed by the University of Southern Maine with 85 employees identifying as such.

Years of Service/Average Years of Service

- UMS has many long-service employees. Average length of service ranges from 9.8 years for salaried staff to 14.7 years for administrators.
- 17.9% of faculty and more than 23% of administrators have 25 or more years of service.
- The University of Maine at Farmington has the highest average years of service for all employment categories at 13 years. The University of Maine at Machias and University of Southern Maine have the lowest average years of service at 10.3 years.

Part-Time Faculty

- In the Fall 2019 semester, there were approximately 875 Part-Time Faculty teaching 4,700 credit hours of course work. The University of Southern Maine employs the most Part-Time Faculty with 364 (41.6%), followed by the University of Maine with 205 (23.4%) and then the University of Maine at Augusta with 138 (15.8%).

UMS - OHR
April 3, 2020
Category Definitions

All UMS positions are categorized as administrator, faculty, salaried, or hourly depending upon the primary type of work performed. The categories, as defined by the IPEDS (Integrated Postsecondary Education Data System) Fall Staff Survey submitted biennially by colleges and universities to the National Center for Education Statistics, U.S. Department of Education, are defined below.

Administrators
All employees whose assignments require management of the institution, or a customarily recognized department or subdivision. Assignments require the performance of work directly related to management policies or general business operations of the institution, department or subdivision. Assignments in this category customarily and regularly require the incumbent to exercise discretion and independent judgment. This category includes employees holding the following titles who meet the above criteria: president, vice president (including assistant and associate), dean (including assistant and associate), director (including assistant and associate), department head (including assistant and associate if their only activity is administrative and does not include a faculty workload). Employees in this category are in the management group.

Faculty
All individuals employed for the primary purpose of instruction, research, and/or public service who hold academic rank of professor, associate professor, assistant professor, instructor, lecturer or the equivalent. These individuals may also hold titles such as associate dean, assistant dean, chairperson, and director if they also have a faculty work assignment. This report includes faculty in Cooperative Extension; the Tenure Report excludes faculty in this department.

Salaried
All individuals employed for the primary purpose of performing academic support, student service and institutional support, whose assignments require either a baccalaureate degree or higher or experience of such kind and amount as to provide a comparable background. Includes employees with job titles such as: Business Operations Specialist, Financial Specialist, Accountant, Budget Analyst, Admissions or Financial Aid Counselor, Computer Specialist, Computer Analyst, Database Administrator, Librarian, Resident Director.
Hourly Staff

All employees whose assignments:

- Are technical or paraprofessional in nature (requires specialized knowledge or skills which may be acquired through experience, apprenticeship, on-the-job training or academic work in occupationally specific programs that result in a 2-year degree or other certificate or diploma). Includes such titles as Research or Laboratory Technician, Audiovisual Technician, Personnel Assistant. Or;

- Are associated with clerical or secretarial activities (responsible for internal and external communications, recording and retrieving data and/or information, and other paperwork required in an office). Includes such titles as Secretary, Administrative Assistant, Records Technician, Bookkeeper, Library Assistant. Or;

- Involve skilled crafts work (typically requires special manual skills and a thorough and comprehensive knowledge of the processes involved in the work, acquired through on-the-job-training and experience or through apprenticeship or other formal training programs). Includes such titles as Electrician, HVAC Technician, Printer, Garage Mechanic. Or;

- Involve service/maintenance work (requires limited degrees of previously acquired skills and knowledge, performs duties that result in or contribute to the comfort, convenience and hygiene of personnel and the student body or that contribute to the upkeep of the institutional property). Includes such titles as Custodian, Building & Grounds Maintenance Worker, Police Officer, Security Guard, Cook.
Employee Counts by Employment Category and Gender (4,635)

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<tr>
<td>Administrator (100)</td>
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<td>48</td>
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<td>Faculty (1,276)</td>
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<tr>
<td>Salaried (1,891)</td>
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<td>Hourly (1,368)</td>
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Average Salary By Employment Category

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<td>Hourly (1,368)</td>
<td>$33,303</td>
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Age by Employment Category

Average Age of Administrators is 55, Faculty 52, Salaried 45, Hourly 50

* Student Fall Enrollment 2019 includes undergraduate and graduate students. The source is Fall 2019 Enrollment Report - The University of Maine System, Fall Semester Headcount by Campus.
**Full Time Equivalent by Funding Source**

- Administrator (99.5%)
- Faculty (1,522.5%)
- Salaried (1,962.2%)
- Hourly (1,445.6%)

**Part-Time Faculty Association Credit Hours by Semester**

- 2017 Spring: 4,184.5
- 2017 Fall: 4,667.5
- 2018 Spring: 3,849.5
- 2018 Fall: 4,125.5
- 2019 Spring: 4,335.0
- 2019 Fall: 4,699.5

**Student vs. Employee Head Count**

- Student Head Count: 4,955, 4,908, 4,792, 4,598, 4,373, 4,457, 4,493, 4,613, 4,637

*Student headcount from Fall 2019 UMS Enrollment Report
Employee Headcount from Fall 2019 UMS HR Headcount Report - REG employees*
Counts by Employment Category and Gender

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<th>University of Southern Maine</th>
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| Student Enrollment | 659   | 1,445  | 8,429 |

* Student Enrollment counts from the University of Maine System - Fall 2019 Enrollment Report, Fall Semester Headcount by Campus.
### Average Salary by Employment Category

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*Board of Trustees Meeting - May 2020 - Reports*
### Average Age by Employment Category

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<th>University of Maine at Fort Kent</th>
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### University of Maine

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<th>University of Southern Maine</th>
<th>University Governance</th>
<th>University Services</th>
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## Age by Employment Category*

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# Age by Employment Category*

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<th>55 - 64</th>
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* Note - Due to rounding the % of Total in the Total column may not equal the sum of the percents in each age category.
## Highest Degree by Employment Category

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<th>Bachelor's</th>
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### Highest Degree by Employment Category

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#### University of Southern Maine

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### Years of Service by Employment Category

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#### University of Maine

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## Average Years of Service by Employment Category

![Table showing average years of service by employment category for different universities and categories.](image)

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<th>University of Maine at Farmington</th>
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<th>University of Maine at Machias</th>
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<tr>
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<td><strong>Spring 2019</strong></td>
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<tr>
<td><strong>Spring 2019</strong></td>
<td><strong>Fall 2019</strong></td>
<td></td>
</tr>
<tr>
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</tr>
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<td>1472.5</td>
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</tr>
<tr>
<td>1717.5</td>
<td>666</td>
<td>149.0</td>
</tr>
</tbody>
</table>
TURNOVER ANALYSIS
SEPARATIONS, RETENTION, AND HIRING STATISTICS
FOR
REGULAR EMPLOYEES
October 31, 2018 - October 31, 2019

April 13, 2020
UMS Office of Human Resources
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Methodology

This report includes only regular staff and primary position records for employees in an active, leave with pay or leave without pay status. Regular staff in the Part-Time Faculty bargaining unit are included; temporary staff in the Part-Time Faculty unit are excluded.

The report covers the period from October 31, 2018 through October 31, 2019.

The population is determined by averaging the number of staff active, on leave, or on leave without pay on October 31, 2018 and October 31, 2019.

Resignations, voluntary retirements, failure to return from leave, death, and disability are considered voluntary separations. All other separation reasons are considered involuntary separations. Separations due to death or disability were included with involuntary terminations in reports prior to 2014.

New hires are hired from outside the University and do not include staff who are already employees. The new hire and rehire statistics do not include employees who have taken a secondary job or transferred within the University System. Rehires include employees moving from temporary to regular positions and/or have had a separation from the University of Maine System. Internal hires and transfers are isolated and included for reference.

Key to bargaining groups:

AFUM - Associated Faculties of the Universities of Maine, MEA/NEA
UMPSA - Universities of Maine Professional Staff Association, MEA/NEA
COLT - Associated C.O.L.T. (Clerical, Office, Laboratory and Technical) Staff of the Universities of Maine, MEA/NEA
Service & Maintenance - Teamsters Union Local #340
University Supervisors
Police - Fraternal Order of Police Lodge #100
Non-Represented Hourly
Non-Represented Salaried
Non-Represented Faculty - Includes Law Faculty, Chairs at some Universities
PATFA Regular - Part-Time Faculty Association, MFT/AFT, AFL-CIO
Turnover Highlights

• From October 31, 2018 through October 31, 2019 the number of employee separations for all reasons was 11.8% of the average population of regular employees. Of this, voluntary resignations made up 7.6%, and retirements accounted for 2.7%. The remaining 1.5% involuntary separations resulted from end of term appointments, layoff, and termination.

• The turnover rate of 11.8% is up from last year’s rate of 10.3% due to an increase in year-over-year voluntary separations.

• The turnover rate reported for all education services by the Bureau of Labor Statistics shows an increasing trend of total annual separations levels. Despite this year’s increase in turnover, the University of Maine System’s separation rate has been trending downward since peaking in 2015.

• The number of separations due to position elimination/staff reduction is 4. This is 1 more than last year for the same period.

• The rate of voluntary separations as a percent of the total University of Maine System population is 7.6%.

• 87.5% of the 546 total separations are due to voluntary resignations and retirements. Retirements alone account for 23.2% of the 546 total separations.

• Separation rates vary among universities from a high of 18.2% for University of Maine Machias to 7.7% at the University of Maine Presque Isle.

• The average years of service for resignation is 4.4 years, 26.1 years for voluntary retirements, and 4.8 years for involuntary separations.

• The percent of separations for the represented and non-represented as a percentage of the bargaining unit vary with a high of 51.6% in the PATFA Regular unit to 7.6% in the University Supervisors unit. Separation rates in other represented bargaining units are: AFUM: 7.9%, UMPSA: 11.4%, ACSUM: 16.2%, S&M: 13.6%, Police: 30.2%, NR Hrly: 13.1%, NR Sal: 13.0%, NR Fac:
8.7%, Law Faculty: 11.4%.

- The UMPSA bargaining unit is 33.3% of the population and accounts for 32.3% of the separations; 81.8% of UMPSA separations are voluntary resignations.

- The percent of new hires/rehires at Universities as a percent of Campus population varies among the campuses with a high of 15.4% at University of Maine Augusta to 6.3% at University of Maine Farmington.

- The percent of total UMS new hires/rehires (473) in represented and non-represented units vary from a high of 36.4% (172) in the UMPSA unit to a low of 0.2% (1) in the Law Faculty unit.

- Retention of employees at all Universities is 88.0%, the lowest retention rate among bargaining groups is PATFA Regular at 51.6%.
**Average Headcount - Regular Staff by University**

<table>
<thead>
<tr>
<th></th>
<th>UM</th>
<th>UMA</th>
<th>UMF</th>
<th>UMFK</th>
<th>UMM</th>
<th>UMPI</th>
<th>USM</th>
<th>U GOV</th>
<th>U SERV</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Num</td>
<td>2,211</td>
<td>313</td>
<td>319</td>
<td>113</td>
<td>72</td>
<td>1,055</td>
<td>16</td>
<td>391</td>
<td>4,631</td>
<td></td>
</tr>
</tbody>
</table>

Headcount is an average of the number of regular staff on October 31, 2018 and October 31, 2019.

**Turnover Formula**

\[
\text{Turnover} = \frac{\text{# of separations}}{\text{average employee population}} \times 100 = \frac{546}{4,631} = 11.8\%
\]

**Employee by University - Percent of Population**

<table>
<thead>
<tr>
<th></th>
<th>UM</th>
<th>UMA</th>
<th>UMF</th>
<th>UMFK</th>
<th>UMM</th>
<th>UMPI</th>
<th>USM</th>
<th>U GOV</th>
<th>U SERV</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per</td>
<td>47.7%</td>
<td>6.7%</td>
<td>6.9%</td>
<td>2.4%</td>
<td>1.5%</td>
<td>3.1%</td>
<td>22.8%</td>
<td>0.3%</td>
<td>8.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Employees by University - Percent of Population**

- UM: 47.7%
- U GOV: 0.3%
- U SERV: 8.4%
- USM: 22.8%
- UMPI: 3.1%
- UMM: 1.5%
- UMF: 6.9%
- UMA: 6.7%
<table>
<thead>
<tr>
<th>Campus</th>
<th>Death</th>
<th>Discharge</th>
<th>End of Appt/Contract</th>
<th>Failure to Return from Leave</th>
<th>Probationary Period</th>
<th>Resignation</th>
<th>Retirement</th>
<th>Soft Money Discont</th>
<th>Staff Reduction</th>
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<td>22</td>
<td>1</td>
<td>2</td>
<td>158</td>
<td>54</td>
<td>7</td>
<td>1</td>
<td>251</td>
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<tr>
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<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>29</td>
<td>11</td>
<td></td>
<td></td>
<td>44</td>
</tr>
<tr>
<td>UMF</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td>7</td>
<td></td>
<td></td>
<td>27</td>
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<td></td>
<td></td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>UMM</td>
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<td></td>
<td>10</td>
<td>2</td>
<td></td>
<td></td>
<td>13</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>USM</td>
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<td>7</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>79</td>
<td>35</td>
<td>1</td>
<td>2</td>
<td>136</td>
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<tr>
<td>U GOV</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>5</td>
<td></td>
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<td></td>
<td>5</td>
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<td>USVC</td>
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<td>1</td>
<td></td>
<td></td>
<td>31</td>
<td>8</td>
<td></td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>17</td>
<td>36</td>
<td>2</td>
<td>3</td>
<td>342</td>
<td>127</td>
<td>8</td>
<td>4</td>
<td>546</td>
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Separation Rate - Resignations and Total Separations as a Percent of University Population

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<th>UMA</th>
<th>UMF</th>
<th>UMFK</th>
<th>UMM</th>
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</thead>
<tbody>
<tr>
<td>Resig</td>
<td>7.1%</td>
<td>11.4%</td>
<td>9.3%</td>
<td>14.1%</td>
<td>5.0%</td>
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<tr>
<td>All</td>
<td>14.1%</td>
<td>11.4%</td>
<td>8.5%</td>
<td>15.0%</td>
<td>14.0%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
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<th>UGOV</th>
<th>USERV</th>
<th>TOTAL</th>
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<tr>
<td>Resig</td>
<td>4.9%</td>
<td>7.7%</td>
<td>7.5%</td>
<td>12.9%</td>
<td>31.3%</td>
</tr>
<tr>
<td>All</td>
<td>7.7%</td>
<td>7.4%</td>
<td>10.7%</td>
<td>7.9%</td>
<td>11.8%</td>
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### Average Years of Service Prior to Separation by University

<table>
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<th>UMF</th>
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<th>UMM</th>
<th>UMPI</th>
<th>USM</th>
<th>U/GOV</th>
<th>USERV</th>
<th>Total</th>
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<td>Yrs</td>
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<td>Yrs</td>
<td>Yrs</td>
<td>Yrs</td>
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<td>Yrs</td>
<td>Yrs</td>
<td>Yrs</td>
<td>Yrs</td>
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<tr>
<td>Involuntary</td>
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<td>2.3</td>
<td>7.3</td>
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<td>3.0</td>
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<td>2.6</td>
<td>4.7</td>
<td>4.8</td>
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<tr>
<td>Retirement</td>
<td>27.4</td>
<td>26.4</td>
<td>20.6</td>
<td>25.3</td>
<td>23.9</td>
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<td>25.9</td>
<td>25.1</td>
<td></td>
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<tr>
<td>Voluntary</td>
<td>4.4</td>
<td>4.9</td>
<td>3.8</td>
<td>3.9</td>
<td>2.5</td>
<td>6.6</td>
<td>3.8</td>
<td>8.6</td>
<td>5.4</td>
<td>4.4</td>
</tr>
<tr>
<td>Total</td>
<td>9.6</td>
<td>10.5</td>
<td>8.7</td>
<td>12.2</td>
<td>6.0</td>
<td>9.4</td>
<td>9.1</td>
<td>8.6</td>
<td>9.5</td>
<td>9.5</td>
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### Terminations by Years of Service

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<th>One Year</th>
<th>Two Years</th>
<th>Three Years</th>
<th>Four Years</th>
<th>Over Five Years</th>
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</thead>
<tbody>
<tr>
<td>Number of Terminations</td>
<td>89</td>
<td>84</td>
<td>54</td>
<td>46</td>
<td>15</td>
<td>253</td>
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</tbody>
</table>

### Comparison Separation Trend lines between BLS Educational Services and University of Maine System

For University of Maine System (UMS): 

\[ y = 42.057x + 871.8 \]

For BLS: 

\[ y = -26.4x + 648.07 \]

- **Orange Line**: University of Maine System (UMS)
- **Gray Line**: BLS Educational Services
- **Dotted Orange Line**: Linear fit for University of Maine System (UMS)
- **Dotted Gray Line**: Linear fit for BLS Educational Services
Retention $= \frac{\text{final # of employees}}{\text{initial # of employees}} \times 100$

### Retention by University as Percent of Campus Population

<table>
<thead>
<tr>
<th>University</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM</td>
<td>1,558</td>
<td>88.6%</td>
<td>261</td>
<td>83.5%</td>
<td>292</td>
<td>91.5%</td>
<td>99</td>
<td>87.6%</td>
<td>60</td>
<td>83.5%</td>
<td>130</td>
<td>91.5%</td>
<td>914</td>
<td>86.6%</td>
</tr>
<tr>
<td>UMA</td>
<td>346</td>
<td>88.3%</td>
<td>473</td>
<td>88.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

### New Hires and Rehires by Number and Percent of Campus Population

<table>
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<th>University</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM</td>
<td>201</td>
<td>9.1%</td>
<td>48</td>
<td>15.4%</td>
<td>20</td>
<td>6.3%</td>
<td>13</td>
<td>11.5%</td>
<td>9</td>
<td>12.6%</td>
<td>9</td>
<td>8.3%</td>
<td>130</td>
<td>12.3%</td>
</tr>
<tr>
<td>UMA</td>
<td>43</td>
<td>11.0%</td>
<td>473</td>
<td>10.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### New Appointments and Transfers by Number and Percent of Campus Population

<table>
<thead>
<tr>
<th>University</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM</td>
<td>147</td>
<td>6.7%</td>
<td>29</td>
<td>9.3%</td>
<td>21</td>
<td>6.6%</td>
<td>10</td>
<td>8.8%</td>
<td>10</td>
<td>14.0%</td>
<td>12</td>
<td>8.5%</td>
<td>83</td>
<td>7.9%</td>
</tr>
<tr>
<td>UMA</td>
<td>28</td>
<td>7.2%</td>
<td>344</td>
<td>7.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### New Hires and Rehires by University

<table>
<thead>
<tr>
<th>University</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
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<th>%</th>
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<th>%</th>
<th>Num</th>
<th>%</th>
<th>Num</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM</td>
<td>201</td>
<td>42.5%</td>
<td>48</td>
<td>10.1%</td>
<td>20</td>
<td>4.2%</td>
<td>13</td>
<td>2.7%</td>
<td>9</td>
<td>1.9%</td>
<td>9</td>
<td>1.8%</td>
<td>130</td>
<td>27.5%</td>
</tr>
<tr>
<td>UMA</td>
<td>43</td>
<td>9.1%</td>
<td>473</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Average Headcount - Regular Staff by Bargaining Unit

<table>
<thead>
<tr>
<th></th>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Supr</th>
<th>Police</th>
<th>Non Rep Hrly</th>
<th>Non Rep Sal</th>
<th>Non Rep Fac</th>
<th>PATFA</th>
<th>Law Faculty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Num</td>
<td>1,120</td>
<td>1,544</td>
<td>648</td>
<td>536</td>
<td>105</td>
<td>43</td>
<td>61</td>
<td>416</td>
<td>127</td>
<td>16</td>
<td>18</td>
<td>4,631</td>
</tr>
</tbody>
</table>

### Employees by Bargaining Unit - Percent of Population

<table>
<thead>
<tr>
<th></th>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Supr</th>
<th>Police</th>
<th>Non Rep Hrly</th>
<th>Non Rep Sal</th>
<th>Non Rep Fac</th>
<th>PATFA</th>
<th>Law Faculty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per</td>
<td>24.2%</td>
<td>33.3%</td>
<td>14.0%</td>
<td>11.6%</td>
<td>2.3%</td>
<td>0.9%</td>
<td>9.0%</td>
<td>2.7%</td>
<td>0.3%</td>
<td>0.4%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

![Pie chart showing employees by bargaining unit - percent of population](image)
<table>
<thead>
<tr>
<th>Union</th>
<th>Death</th>
<th>Discharge</th>
<th>End of App/Contract</th>
<th>Failure to Return from Leave</th>
<th>Probationary Period</th>
<th>Resignation</th>
<th>Retirement</th>
<th>Soft Money Discont</th>
<th>Staff Reduction</th>
<th>Total</th>
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<tbody>
<tr>
<td>AFUM</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>33</td>
<td>39</td>
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<td></td>
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<td>3</td>
<td></td>
<td></td>
<td></td>
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<td>Police</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Non Rep Hrly</td>
<td>1</td>
<td></td>
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<td></td>
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<tr>
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<td>2</td>
<td>4</td>
<td>34</td>
<td>16</td>
<td>1</td>
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<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PATFA</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Law Faculty</td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7</td>
<td>17</td>
<td>36</td>
<td>342</td>
<td>127</td>
<td>8</td>
<td>4</td>
<td></td>
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<td>546</td>
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</tbody>
</table>
### Separation Rate - Resignations and Total Separations as a Percent of Bargaining Unit Population

<table>
<thead>
<tr>
<th></th>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Supv</th>
<th>Police</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resig All</td>
<td>2.9%</td>
<td>7.9%</td>
<td>7.5%</td>
<td>11.4%</td>
<td>12.0%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Resig All</td>
<td>9.3%</td>
<td>13.6%</td>
<td>3.8%</td>
<td>7.6%</td>
<td>20.9%</td>
<td>30.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non Rep Hrly</th>
<th>Non Rep Sal</th>
<th>Non Rep Fac</th>
<th>PATFA</th>
<th>Law Faculty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resig All</td>
<td>9.8%</td>
<td>13.1%</td>
<td>8.2%</td>
<td>13.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Resig All</td>
<td>32.3%</td>
<td>51.6%</td>
<td>5.7%</td>
<td>11.4%</td>
<td>7.4%</td>
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</tbody>
</table>

### Average Years of Service by Separation Reason by Bargaining Unit

<table>
<thead>
<tr>
<th></th>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Supv</th>
<th>Police</th>
<th>Non Rep Hrly</th>
<th>Non Rep Sal</th>
<th>Non Rep Fac</th>
<th>PATFA</th>
<th>Law Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involuntary</td>
<td>7.8</td>
<td>3.6</td>
<td>5.2</td>
<td>3.4</td>
<td>3.5</td>
<td>5.4</td>
<td>0.2</td>
<td>2.5</td>
<td>10.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retire</td>
<td>20.8</td>
<td>24.4</td>
<td>23.5</td>
<td>19.5</td>
<td>33.3</td>
<td>11.6</td>
<td>14.4</td>
<td>24.2</td>
<td>28.2</td>
<td></td>
<td>14.1</td>
</tr>
<tr>
<td>Voluntary</td>
<td>5.7</td>
<td>3.8</td>
<td>4.0</td>
<td>3.5</td>
<td>4.8</td>
<td>3.7</td>
<td>2.4</td>
<td>7.4</td>
<td>4.8</td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Total</td>
<td>17.1</td>
<td>7.0</td>
<td>8.0</td>
<td>6.6</td>
<td>15.4</td>
<td>4.7</td>
<td>3.6</td>
<td>12.1</td>
<td>15.4</td>
<td>9.2</td>
<td>9.0</td>
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</tbody>
</table>
### Separations by Bargaining Unit as a Percentage of Total Separations

<table>
<thead>
<tr>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Suprv</th>
<th>Police</th>
<th>Non Rep Hrly</th>
<th>Non Rep Sal</th>
<th>Non Rep Fac</th>
<th>PATFA</th>
<th>Law Faculty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
<td>Per</td>
</tr>
<tr>
<td>16.1%</td>
<td>32.2%</td>
<td>19.2%</td>
<td>13.4%</td>
<td>1.5%</td>
<td>2.4%</td>
<td>1.5%</td>
<td>9.9%</td>
<td>2.0%</td>
<td>1.5%</td>
<td>0.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
### Retention by Bargaining Unit by Number and Percent

<table>
<thead>
<tr>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Supr</th>
<th>Police</th>
</tr>
</thead>
<tbody>
<tr>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
</tr>
<tr>
<td>1,026</td>
<td>91.6%</td>
<td>1,338</td>
<td>86.7%</td>
<td>557</td>
<td>86.0%</td>
</tr>
<tr>
<td>Non Rep Hrly</td>
<td>Non Rep Sal</td>
<td>Non Rep Fac</td>
<td>PATFA</td>
<td>Law Faculty</td>
<td>Total</td>
</tr>
<tr>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
</tr>
<tr>
<td>57</td>
<td>93.4%</td>
<td>362</td>
<td>87.0%</td>
<td>117</td>
<td>92.5%</td>
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</table>

### New Hires and Rehires by Number and Percent of Bargaining Unit Population

<table>
<thead>
<tr>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Supr</th>
<th>Police</th>
</tr>
</thead>
<tbody>
<tr>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
</tr>
<tr>
<td>71</td>
<td>15.0%</td>
<td>172</td>
<td>36.4%</td>
<td>94</td>
<td>19.9%</td>
</tr>
<tr>
<td>Non Rep Hrly</td>
<td>Non Rep Sal</td>
<td>Non Rep Fac</td>
<td>PATFA</td>
<td>Law Faculty</td>
<td>Total</td>
</tr>
<tr>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
</tr>
<tr>
<td>6</td>
<td>1.3%</td>
<td>31</td>
<td>6.6%</td>
<td>7</td>
<td>1.5%</td>
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</table>

### New Appointments and Transfers by Number and Percent of Bargaining Unit Population

<table>
<thead>
<tr>
<th>AFUM</th>
<th>UMPSA</th>
<th>ACSUM</th>
<th>Serv &amp; Maint</th>
<th>Univ Supr</th>
<th>Police</th>
</tr>
</thead>
<tbody>
<tr>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
</tr>
<tr>
<td>63</td>
<td>18.3%</td>
<td>138</td>
<td>40.1%</td>
<td>44</td>
<td>12.8%</td>
</tr>
<tr>
<td>Non Rep Hrly</td>
<td>Non Rep Sal</td>
<td>Non Rep Fac</td>
<td>PATFA</td>
<td>Law Faculty</td>
<td>Total</td>
</tr>
<tr>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
<td>Num</td>
<td>Pct</td>
</tr>
<tr>
<td>3</td>
<td>0.9%</td>
<td>44</td>
<td>12.8%</td>
<td>6</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

16
Capital Project Status Report

Executive Summary

Overview:
Attached is the Capital Project Status Report for the April 29, 2020 meeting of the Finance, Facilities and Technology Committee. The report reflects a total of 27 projects; five new projects have been added. They are ASCC Renovation – Mezzanine Office Expansion (5100525) at UM; Enrollment/Advancement Center (3100042) at UMFK; Portland Parking Garage Study (6100331) and Fitness Equipment Purchase and Space Renovation (0000000) at USM; and Folsom 105 Nursing Renovation (7100026) at UMPI.

These additions as well as the significant increase approved at the March meeting for UM’s Ferland Engineering Education and Design Center project has increased the value of the projects being tracked and reported.

COVID-19 Impact on Capital Construction:
While many projects continue to move forward at this time under the various provisions of state and federal pandemic guidance, some impacts are beginning to surface.

- A handful of projects which were to be funded using operating or “unrestricted” capital are being put on hold while individual campuses work to understand the financial impact.
- Since mid-March the University has been holding pre-bid meetings virtually; providing photos and videos of existing conditions and responding to questions issued by email.
- Since April the process of receiving bids has been moved to completely electronic. The University receives bids by email and provides a link to access an online or phone connection for the bid opening.
- Capital Planning and Project Management is collaborating with each campus to understand the policies each has put in place as well as any local municipal orders or policies to ensure our contractors are heeding them.
- Where construction is underway as exempted by federal and state pandemic guidance or orders, the University is requiring contractors to provide a COVID-19 work plan that outlines their process for ensuring workers respect social distancing and other recommended or mandated practices for minimizing the spread of the virus.
- Currently active construction sites are small in scale so this has all been possible. Many larger projects are out to bid with the original schedule of construction to begin after commencement. As we near the construction start dates, we will likely see more specific impacts and further consideration of proceeding or deferring projects may be required.
- The University has started seeing communication from contractors that material deliveries are being delayed with potential schedule impacts.
Bond Project Status Report:
The special portion of this report calling out only bond projects now reflects twenty-nine (29) projects in progress. These projects are currently estimated to account for more than $38 million of the $49 million in voter approved general obligation bond funding. Just under $6 million of that has been expended. Supplemental funding is being leveraged for some of these projects and the total estimated project value across all funds currently stands at approximately $51.1 million, including the bond funding and other project resources.

Ten (10) of these bond projects also appear on the Capital Project Status Report with approved budgets above board threshold. Four (4) projects are expected to be brought to the board for additional authorization as design progresses but are currently in design and pre-design phases with budgets below the board approval threshold. The remaining fifteen (15) bond projects do not have budgets that meet the threshold for Board of Trustees consideration, and are therefore not present on the Capital Projects Status Report. As projects are completed, they will remain on this report for documenting purposes until all Bond Projects are completed.

Future reports will be updated to reflect additional active Bond projects as the information becomes available.

Update to UM Ferland Engineering Education & Design Center Project:
This project is currently on schedule even amidst the challenges of the ongoing pandemic. The ground breaking ceremony scheduled for April 28th has been changed to a “virtual” ground breaking in response to the need for social distancing measures. The design and bidding continues in earnest with the construction expected to commence in early summer/late spring.
*Direct Capital Appropriations funds consist of capital appropriations in anticipation of revenue bonding, as well as MEIF funds.

**Please note that the graph reflecting Total Approved Funding by Source for Active Major Capital Facility Projects, two sets of data for the month of September are captured to reflect a change in methodology. The new methodology does not reflect any change in resources but does reflect a refinement in how those resources are categorized. Following months will return to a single set of data for each month.

4/30/2020
### Capital Project Status Report

**Board Approved Projects**

**May 2020 - Board of Trustees**

With Grand Totals and % of Current Approved Estimates

<table>
<thead>
<tr>
<th>Campus, Project Name (Project ID)</th>
<th>Funding Source(s) &amp; each source’s share of expenditures to date</th>
<th>Status</th>
<th>Original Estimated Completion</th>
<th>Current Est. Completion</th>
<th>Original Approved Estimate</th>
<th>Current Approved Estimate</th>
<th>% Expended of Current Approved Estimate</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handley Hall HVAC System Upgrade</td>
<td>2018 State Bond (77%), Campus E&amp;G Funds (23%)</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2021</td>
<td>$575,000</td>
<td>$575,000</td>
<td>4%</td>
<td>Board approved $575K in September, 2019.</td>
</tr>
<tr>
<td>Augusta Welcome Center (1100077)</td>
<td>2018 State Bond (100%)</td>
<td>Design in Progress</td>
<td>2021</td>
<td>2021</td>
<td>$6,850,000</td>
<td>$6,850,000</td>
<td>1%</td>
<td>Board approved $6.85M in January 2020.</td>
</tr>
<tr>
<td><strong>UM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Structures and Composites Center Expansion/ASCC Equip W2-Thermoplastics Lab/ASCC Equip W2 Tow Carriage (5100316, 5100414, 5100432)</td>
<td>2010 State Bond (49%), Grants (44%), Gifts (7%), Campus E&amp;G Funds (0%)</td>
<td>Project 5100316 is Complete, Project 5100414 Design in Progress, Project 5100432 is Complete</td>
<td>2014</td>
<td>2020</td>
<td>$6,400,000</td>
<td>$10,400,000</td>
<td>92%</td>
<td>Board approved $6.4M in November, 2012. Board approved $1.6M in March 2014. Board approved increase of $871,000 in March 2015. BOT approved additional $1.5M in May 2016 for equipment project.</td>
</tr>
<tr>
<td>Cooperative Extension Diagnostic &amp; Research Lab (5100387)</td>
<td>2014 State Bond (84%), Grants (5%), Campus E&amp;G Funds (11%)</td>
<td>Complete</td>
<td>2016</td>
<td>2019</td>
<td>$9,000,000</td>
<td>$9,600,000</td>
<td>99%</td>
<td>BOT approved $9M in July, 2015. Board approved increase of $400,000 in July 2017. Chancellor approved additional increase of $200,000 in February, 2019.</td>
</tr>
<tr>
<td>***Aquatic Animal Health Facility (5100440)</td>
<td>Grants (40%), Campus E&amp;G Funds (60%)</td>
<td>Complete</td>
<td>2017</td>
<td>2019</td>
<td>$2,300,000</td>
<td>$2,870,000</td>
<td>100%</td>
<td>Board approved $2.3M in January, 2017. Board approved increase of $500,000 in November, 2017. Chancellor approved additional increase of $70,000 in February 2019.</td>
</tr>
<tr>
<td>Darling Marine Center Waterfront Infrastructure (5100459, 5100460, 5100461)</td>
<td>Grants (69%), Campus E&amp;G Funds (31%)</td>
<td>Bidding</td>
<td>2017</td>
<td>2021</td>
<td>$3,000,000</td>
<td>$5,200,000</td>
<td>7%</td>
<td>Board approved $3M in July, 2017. Board approved increase of $2.2M in September, 2019.</td>
</tr>
<tr>
<td>**Engineering Education and Design Center (5100458, 5100493, 5200604)</td>
<td>Gifts (35%), Campus Funds (7%), Campus Operating Reserves (11%), State Appropriations (47%)</td>
<td>Design in Progress</td>
<td>2024</td>
<td>2024</td>
<td>$1,000,000</td>
<td>$72,000,000</td>
<td>75%</td>
<td>Board approved $1M in September, 2017. Board approved additional $8M in May, 2018. Additional $63M BOT approved March, 2020 Initial occupancy of this facility is expected in 2022; final completion in 2024.</td>
</tr>
<tr>
<td>Wells Commons Generator (5100433)</td>
<td>Campus Auxiliary Operating (64%), Campus Auxiliary Reserves (36%)</td>
<td>Substantially Complete</td>
<td>2019</td>
<td>2020</td>
<td>$525,000</td>
<td>$525,000</td>
<td>61%</td>
<td>Board approved $525,000 January, 2018.</td>
</tr>
<tr>
<td>CCAR EDA Hatchery Building Roof Replacement (5100456)</td>
<td>Campus E&amp;G Funds (100%)</td>
<td>Substantially Complete</td>
<td>2019</td>
<td>2020</td>
<td>$562,000</td>
<td>$562,000</td>
<td>78%</td>
<td>Board approved $562,000 in June, 2018.</td>
</tr>
<tr>
<td>Hilltop Commons Servery Updates (5100489)</td>
<td>Campus Auxiliary Operating (38%), Campus Auxiliary Reserves (62%)</td>
<td>Substantially Complete</td>
<td>2019</td>
<td>2020</td>
<td>$925,000</td>
<td>$925,000</td>
<td>72%</td>
<td>Board approved $925,000 January, 2019.</td>
</tr>
</tbody>
</table>
## Capital Project Status Report

### Board Approved Projects

#### May 2020 - Board of Trustees

With Grand Totals and % of Current Approved Estimates

<table>
<thead>
<tr>
<th>Campus, Project Name (Project ID)</th>
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<th>Current Est. Completion</th>
<th>Original Approved Estimate</th>
<th>Current Approved Estimate</th>
<th>% Expended of Current Approved Estimate</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>York Hall Kitchen Hood Replacement (5100490)</td>
<td>Campus Auxiliary Operating (22%)</td>
<td>Substantially Complete 2019</td>
<td>2020</td>
<td>$550,000</td>
<td>$950,000</td>
<td>76%</td>
<td>Board approved $550,000 January, 2019. Board approved additional $400K in May, 2019.</td>
</tr>
<tr>
<td>UM Energy Center Phase II (5100516, 5100517)</td>
<td>Campus Operating (36%) Campus Reserves (64%)</td>
<td>Pre-Design in Progress 2023</td>
<td>2023</td>
<td>$5,700,000</td>
<td>$5,700,000</td>
<td>4%</td>
<td>Board approved $5.7M March, 2019.</td>
</tr>
<tr>
<td>*ASCC Renovation - Mezzanine Office Expansion (5100525)</td>
<td>Campus E&amp;G Funds (100%)</td>
<td>Design in Progress 2020</td>
<td>2020</td>
<td>$450,000</td>
<td>$1,400,000</td>
<td>10%</td>
<td>Board approved $1,400,000 March, 2020</td>
</tr>
</tbody>
</table>

### UMF

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Funding Source(s) &amp; each source's share of expenditures to date</th>
<th>Status Original Estimated Completion</th>
<th>Current Est. Completion</th>
<th>Original Approved Estimate</th>
<th>Current Approved Estimate</th>
<th>% Expended of Current Approved Estimate</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dearborn Gym HW Upgrades (2100087)</td>
<td>2018 State Bond (100%)</td>
<td>Substantially Complete 2019</td>
<td>2020</td>
<td>$600,000</td>
<td>$850,000</td>
<td>93%</td>
<td>Board approved $600K in March, 2019. Board approved additional $250K in May, 2019.</td>
</tr>
</tbody>
</table>

### UMFK

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Funding Source(s) &amp; each source's share of expenditures to date</th>
<th>Status Original Estimated Completion</th>
<th>Current Est. Completion</th>
<th>Original Approved Estimate</th>
<th>Current Approved Estimate</th>
<th>% Expended of Current Approved Estimate</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>*UMFK Enrollment/Advancement Center (3100042)</td>
<td>Bond (0%), Campus E&amp;G (100%)</td>
<td>Design in Progress 2022</td>
<td>2021</td>
<td>$3,249,000</td>
<td>$3,249,000</td>
<td>2%</td>
<td>Board approved $2.99M in Bond Funding, March, 2020.</td>
</tr>
</tbody>
</table>

### USM

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Funding Source(s) &amp; each source's share of expenditures to date</th>
<th>Status Original Estimated Completion</th>
<th>Current Est. Completion</th>
<th>Original Approved Estimate</th>
<th>Current Approved Estimate</th>
<th>% Expended of Current Approved Estimate</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>USM Center for the Arts (6100300)</td>
<td>Gifts (100%)</td>
<td>Pre-Design in Progress 2022</td>
<td>2023</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
<td>15%</td>
<td>Board approved $1M in January, 2018.</td>
</tr>
<tr>
<td>***Ricci Lecture Hall Renovation (6100308)</td>
<td>2018 State Bond (31%), Gifts (42%), Campus E&amp;G Funds (27%)</td>
<td>Complete 2019</td>
<td>2020</td>
<td>$500,000</td>
<td>$680,000</td>
<td>83%</td>
<td>Board approved $500,000 in January, 2019. Board approved additional $180K in May, 2019.</td>
</tr>
<tr>
<td>Brooks Student Center Generator &amp; Switchgear Installation (6100315)</td>
<td>Campus E&amp;G Funds (100%)</td>
<td>Complete 2019</td>
<td>2019</td>
<td>$675,000</td>
<td>$675,000</td>
<td>96%</td>
<td>Board approved $675K in January, 2019.</td>
</tr>
<tr>
<td>Career and Student Success Center and Portland Residence Hall (6100325, 6100338)</td>
<td>2018 State Bond (35%), Campus E&amp;G (65%)</td>
<td>Design in Progress 2020</td>
<td>2022</td>
<td>$1,000,000</td>
<td>$5,700,000</td>
<td>1%</td>
<td>Board approved $1M in January, 2019. Board approved predevelopment expenditures of up to $5.7M combined for the two projects in January 2020. The total project cost remains under development and subject to change.</td>
</tr>
</tbody>
</table>
## Capital Project Status Report

**Board Approved Projects**
**May 2020 - Board of Trustees**

**With Grand Totals and % of Current Approved Estimates**

<table>
<thead>
<tr>
<th>Campus, Project Name (Project ID)</th>
<th>Funding Source(s) &amp; each source’s share of expenditures to date</th>
<th>Status</th>
<th>Original Estimated Completion</th>
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<th>Original Approved Estimate</th>
<th>Current Approved Estimate</th>
<th>% Expended of Current Approved Estimate</th>
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<tr>
<td>Bailey Hall Fire Protection and Electrical Upgrades (6100316, 6100323)</td>
<td>2018 State Bond (8%), Campus E&amp;G Funds (92%)</td>
<td>Project 6100316 is Construction in progress, Project 6100323 is Complete</td>
<td>2019</td>
<td>2021</td>
<td>$2,580,000</td>
<td>$4,388,000</td>
<td>20%</td>
<td>Board approved $2.58M in January, 2019. Board approved $1.808M in January 2020.</td>
</tr>
<tr>
<td>USM Nursing Simulation Lab (6100327)</td>
<td>2018 State Bond (100%)</td>
<td>Construction in Progress</td>
<td>2021</td>
<td>2021</td>
<td>$1,500,000</td>
<td>$1,500,000</td>
<td>3%</td>
<td>Board approved $1.5M in January 2020.</td>
</tr>
<tr>
<td>Brooks Patio Renovations (6200255)</td>
<td>Campus E&amp;G Funds (100%)</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>$650,000</td>
<td>$650,000</td>
<td>7%</td>
<td>Board approved $650,000 in January 2020.</td>
</tr>
<tr>
<td>Wishcamper Parking Lot (6100330)</td>
<td>Campus E&amp;G Funds (100%),</td>
<td>Progress</td>
<td>2020</td>
<td>2020</td>
<td>$1,710,000</td>
<td>$1,710,000</td>
<td>4%</td>
<td>Board approved $1.71M in January, 2020.</td>
</tr>
<tr>
<td>*Port Parking Garage Study (6100331)</td>
<td>Campus E&amp;G Funds (100%)</td>
<td>Pre-Design in Progress</td>
<td>2022</td>
<td>2022</td>
<td>$1,200,000</td>
<td>$1,200,000</td>
<td>2%</td>
<td>Board approved in March 2020. Initial spending limit $400,000 with addtl $800,000 to be authorized by the Chancellor and Vice Chancellor for Finance and Administration and Treasurer and contingent upon site location approval from the City of Portland</td>
</tr>
<tr>
<td>*Fitness Equipment Purchase and Space Renovation (0000000)</td>
<td></td>
<td>Pre-Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>$700,000</td>
<td>$700,000</td>
<td>0%</td>
<td>Board Approved March, 2020. No expenditures as of yet.</td>
</tr>
<tr>
<td><strong>UMPI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>***UMPI Greenhouse (7100010)</td>
<td>Bond (9%), Direct Capital Appropriations (38%), Gifts (53%)</td>
<td>Substantially Complete</td>
<td>2018</td>
<td>2019</td>
<td>$850,000</td>
<td>$935,000</td>
<td>93%</td>
<td>Board approved $850K in September, 2018. Board approved additional $85,000 in January, 2019.</td>
</tr>
<tr>
<td>*Folsom 105 Nursing Renovation (7100026)</td>
<td>Bond (100%)</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>$800,000</td>
<td>$23,783</td>
<td>$800,000</td>
<td>Board approved $800K March, 2020.</td>
</tr>
</tbody>
</table>

### Explanatory Notes:
* Project is new as of this report.
** Details of this project include updates since the last report.
*** This project has been completed since the last report and is not expected to appear on the next report.

Funding source(s) reflects primary source(s) for project.

Calendar Year unless otherwise noted.

Percentage expended reflects total expended as of February 29, 2020 as a percentage of the current approved project estimate.
### Bond Project Status Report

**Active Bond Projects**

**May 2020 - Board of Trustees**

**With Grand Totals and % of Current Approved Estimates**

<table>
<thead>
<tr>
<th>Campus, Project Name (Project ID), Project Manager</th>
<th>Status</th>
<th>Original Estimated Completion</th>
<th>Current Est. Completion</th>
<th>Funding Source(s) &amp; each source's share of expenditures to date</th>
<th>Estimated Bond Funding for Project</th>
<th>Bond Funding Expended</th>
<th>Total Estimated Project Cost</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UMA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Augusta Campus Welcome Center (1100077) Project Manager: Ann Vashon/Walter Shannon</td>
<td>Design in Progress</td>
<td>2021</td>
<td>2021</td>
<td>Bond (100%), Campus E&amp;G Funds (0%)</td>
<td>$2,885,000</td>
<td>$87,602</td>
<td>$6,850,000</td>
<td>Board approved $6.85M in January 2020.</td>
</tr>
<tr>
<td>Handley Hall A/C Replacement (1200029) Project Manager: James Kauppila/Keenan Farwell</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2021</td>
<td>Bond (77%), Campus E&amp;G Funds (23%)</td>
<td>$450,000</td>
<td>$23,520</td>
<td>$575,000</td>
<td>Board approved budget of $575,000 in September, 2019</td>
</tr>
<tr>
<td><strong>UMF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dearborn Gym Hot Water Upgrades (2100087) Project Manager: Keenan Farwell</td>
<td>Substantially Complete</td>
<td>2019</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$850,000</td>
<td>$792,884</td>
<td>$850,000</td>
<td>Board approved $600K in March, 2019.</td>
</tr>
<tr>
<td>274 Front St Acquisition (2100089) Project Manager: Keenan Farwell</td>
<td>Complete</td>
<td>2019</td>
<td>2019</td>
<td>Bond (100%)</td>
<td>$855,000</td>
<td>$850,820</td>
<td>$855,000</td>
<td>Board approved $855K in January, 2019.</td>
</tr>
<tr>
<td>Scott Hall Renovations (2100092) Project Manager: Keenan Farwell</td>
<td>Construction in Progress</td>
<td>2019</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$200,000</td>
<td>$171,950</td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td>Dakin Hall Shower Renovations (2100093) Project Manager: Keenan Farwell</td>
<td>Construction in Progress</td>
<td>2019</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$200,000</td>
<td>$47,200</td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td>Lockwood Hall Shower Renovations (2100094) Project Manager: Keenan Farwell</td>
<td>Construction in Progress</td>
<td>2019</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$200,000</td>
<td>$80,676</td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td>Stone Hall Shower Renovations (2100095) Project Manager: Keenan Farwell</td>
<td>Construction in Progress</td>
<td>2019</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$200,000</td>
<td>$25,961</td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td><strong>UMF Campus Paving (2100097)</strong> Project Manager: Keenan Farwell</td>
<td>Complete</td>
<td>2019</td>
<td>2019</td>
<td>Bond (100%)</td>
<td>$97,338</td>
<td>$97,338</td>
<td>$97,338</td>
<td></td>
</tr>
<tr>
<td>274 Front St Renovation (2100096) Project Manager: Keenan Farwell</td>
<td>Pre-Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$450,000</td>
<td>$26,672</td>
<td>$1,000,000</td>
<td>Approved budget of $450,000, as it remains in study/design phase.</td>
</tr>
<tr>
<td><strong>FRC Floor Renovation (2100098)</strong> Project Manager: Keenan Farwell</td>
<td>Complete</td>
<td>2019</td>
<td>2019</td>
<td>Bond (100%)</td>
<td>$200,729</td>
<td>$200,729</td>
<td>$200,729</td>
<td></td>
</tr>
<tr>
<td>Exterior Painting Merrill Hall (2200096) Project Manager: Keenan Farwell</td>
<td>Pre-Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>Bond (0%)</td>
<td>$40,000</td>
<td>$0</td>
<td>$40,000</td>
<td></td>
</tr>
<tr>
<td>Olsen Center Walk-In Replacement (2100090) Project Manager: Keenan Farwell</td>
<td>Complete</td>
<td>2020</td>
<td>2020</td>
<td>Bond (0%)</td>
<td>$100,453</td>
<td>$40,465</td>
<td>$291,453</td>
<td></td>
</tr>
<tr>
<td><em>Olsen Center Renovations (2100102)</em>* Project Manager: Keenan Farwell</td>
<td>Pre-Design in Progress</td>
<td>2023</td>
<td>2023</td>
<td>Bond (100%)</td>
<td>$1,900,000</td>
<td>$5,661</td>
<td>$1,900,000</td>
<td>Approved budget of $300,000, as it remains in study/design phase.</td>
</tr>
<tr>
<td><strong>Total Bond for Campus</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$5,293,520</td>
<td>$2,340,356</td>
<td>$6,034,520</td>
<td></td>
</tr>
</tbody>
</table>

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*Note: Bond approved $6.85M in January 2020. Board approved budget of $575,000 in September, 2019. Board approved $600K in March, 2019. Board approved additional $250K in May, 2019. Board approved $855K in January, 2019. Board approved budget of $450,000, as it remains in study/design phase. Board approved budget of $300,000, as it remains in study/design phase.*
## Bond Project Status Report

### Active Bond Projects
May 2020 - Board of Trustees

With Grand Totals and % of Current Approved Estimates

<table>
<thead>
<tr>
<th>Campus, Project Name (Project ID), Project Manager</th>
<th>Status</th>
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<th>Current Est. Completion</th>
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</tr>
</thead>
<tbody>
<tr>
<td>UM</td>
<td>Neville Hall Renovation (5100534) Project Manager: Art Bottie</td>
<td>Design in Progress</td>
<td>2021</td>
<td>2021</td>
<td>Bond (0%), Campus E&amp;G (0%)</td>
<td>$300,000</td>
<td>$759</td>
<td>$1,500,000</td>
</tr>
<tr>
<td></td>
<td>UMFK **UMFK Enrollment/Advancement Center (3100042) Project Manager: Jacob Olsen</td>
<td>Design in Progress</td>
<td>2022</td>
<td>2021</td>
<td>Bond (0%), Campus E&amp;G (100%)</td>
<td>$3,249,000</td>
<td>$54,611</td>
<td>$3,249,000</td>
</tr>
<tr>
<td>UMM</td>
<td>UM Science Building Roof Replacement (4100042) Project Manager: Art Bottie</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$325,000</td>
<td>$266,364</td>
<td>$325,000</td>
</tr>
<tr>
<td></td>
<td>UMM Dorward Hall Roof Replacement (4100043) Project Manager: Art Bottie</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2019</td>
<td>Bond (100%)</td>
<td>$300,000</td>
<td>$255,940</td>
<td>$300,000</td>
</tr>
<tr>
<td></td>
<td>UMM Sennett Roof Replacement (4100044) Project Manager: Art Bottie</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$150,000</td>
<td>$9,849</td>
<td>$150,000</td>
</tr>
<tr>
<td></td>
<td>UMM Reynolds Center Roof Repair (4200044) Project Manager: Art Bottie</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$164,000</td>
<td>$149,413</td>
<td>$164,000</td>
</tr>
<tr>
<td></td>
<td>UMM Site Work (4200045) Project Manager: Joshua Burke</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$60,000</td>
<td>$50,195</td>
<td>$60,000</td>
</tr>
<tr>
<td>UMM</td>
<td>UMM Science Building Roof Replacement (4100042) Project Manager: Art Bottie</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$325,000</td>
<td>$266,364</td>
<td>$325,000</td>
</tr>
<tr>
<td></td>
<td>UMM Dorward Hall Roof Replacement (4100043) Project Manager: Art Bottie</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2019</td>
<td>Bond (100%)</td>
<td>$300,000</td>
<td>$255,940</td>
<td>$300,000</td>
</tr>
<tr>
<td></td>
<td>UMM Sennett Roof Replacement (4100044) Project Manager: Art Bottie</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$150,000</td>
<td>$9,849</td>
<td>$150,000</td>
</tr>
<tr>
<td></td>
<td>UMM Reynolds Center Roof Repair (4200044) Project Manager: Art Bottie</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$164,000</td>
<td>$149,413</td>
<td>$164,000</td>
</tr>
<tr>
<td></td>
<td>UMM Site Work (4200045) Project Manager: Joshua Burke</td>
<td>Substantially Complete</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$60,000</td>
<td>$50,195</td>
<td>$60,000</td>
</tr>
<tr>
<td>USM</td>
<td>Woodward Hall Renovations (6100301) Project Manager: Carol Potter</td>
<td>Complete</td>
<td>2019</td>
<td>2019</td>
<td>Bond (86%), Campus E&amp;G Funds (14%)</td>
<td>$1,500,000</td>
<td>$1,172,840</td>
<td>$1,172,840</td>
</tr>
<tr>
<td></td>
<td>**Ricci Lecture Hall Renovations (6100308) Project Manager: Ann Vashon</td>
<td>Complete</td>
<td>2019</td>
<td>2020</td>
<td>Bond (29%), Gifts (42%), Campus E&amp;G Funds (29%)</td>
<td>$150,000</td>
<td>$561,053</td>
<td>$561,053</td>
</tr>
<tr>
<td></td>
<td>Career and Student Success Center (6100325) Project Manager: Ann Vashon</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2022</td>
<td>Bond (35%), Campus E&amp;G Funds (65%)</td>
<td>$19,000,000</td>
<td>$28,956</td>
<td>$19,000,000</td>
</tr>
</tbody>
</table>
## Bond Project Status Report

**Active Bond Projects**

**May 2020 - Board of Trustees**

**With Grand Totals and % of Current Approved Estimates**

<table>
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<tr>
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<tr>
<td>Bailey Hall Fire Protection and Electrical Upgrades (6100316, 6100323) Project Manager: Joe Gallant</td>
<td>Project 6100316 Bid Awarded, Project 6100323 is Complete</td>
<td>2019</td>
<td>2021</td>
<td>Bond (8%), Campus E&amp;G Funds (92%)</td>
<td>$1,460,000</td>
<td>$512,530</td>
<td>$4,388,000</td>
<td>Board approved $2.58M in January, 2019. Board approved additional $1.808M in January, 2020.</td>
</tr>
<tr>
<td>Nursing Simulation Lab Science (6100327) Project Manager: Joe Gallant</td>
<td>Design in Progress</td>
<td>2021</td>
<td>2021</td>
<td>Bond (100%)</td>
<td>$1,500,000</td>
<td>$100,448</td>
<td>$1,500,000</td>
<td>Board approved $1.5M in January, 2020.</td>
</tr>
<tr>
<td>*Robie Andrews Renovation (6100339) Project Manager: Joe Gallant</td>
<td>Design in Progress</td>
<td>2021</td>
<td>2021</td>
<td>Bond (100%)</td>
<td>$491,605</td>
<td>$0</td>
<td>$491,605</td>
<td></td>
</tr>
</tbody>
</table>

**Total Bond for Campus**

$24,101,605 $2,375,827 $27,113,498

**UMPI**

<table>
<thead>
<tr>
<th>Project Name (Project ID), Project Manager</th>
<th>Status</th>
<th>Original Estimated Completion</th>
<th>Current Estimated Completion</th>
<th>Funding Source(s) &amp; each source's share of expenditures to date</th>
<th>Estimated Bond Funding for Project</th>
<th>Bond Funding Expended</th>
<th>Total Estimated Project Cost</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wieden Renovation Bond (7100025) Project Manager: Joseph Moir</td>
<td>Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>Bond (0%)</td>
<td>$125,000</td>
<td>$32,167</td>
<td>$4,000,000</td>
<td>Approved budget of $125,000, as it remains in study/design phase.</td>
</tr>
<tr>
<td><strong>Folsom 105 Nursing Renovation (7100026) Project Manager: Joseph Moir</strong></td>
<td>Design in Progress</td>
<td>2020</td>
<td>2020</td>
<td>Bond (100%)</td>
<td>$800,000</td>
<td>$23,783</td>
<td>$800,000</td>
<td>Board approved $800K March, 2020.</td>
</tr>
</tbody>
</table>

**Total Bond for Campus**

$925,000 $55,950 $4,800,000

**Totals:**

$38,203,125 $5,670,386 $51,121,018

**Explanatory Notes:**

* Project is new as of this report.
** Details of this project include updates since the last report.
Completed projects will remain on this report unless otherwise specified.

Funding source(s) reflects primary source(s) for project.

Calendar Year unless otherwise noted.

Percentage expended reflects total expended as of February 29, 2020 as a percentage of the current approved project estimate.
A 50 Year Legacy
Exploration and Discovery

THE PAST
Dynamics
Analogs

THE PRESENT
~100 years instrumental
and climate reanalyses
~30 years remotely sensed

THE FUTURE
Monitoring
Models

Climate Change Institute | University of Maine
New Technologies
-
THE PAST
Dynamics
Analogs

~100 years instrumental and climate reanalyses

~30 years remotely sensed

THE PRESENT

New software

New approaches

THE FUTURE
Monitoring Models

Climate Change Institute | University of Maine
Unique learning experiences for students - recent
Climate Change Institute Partners

Within the University of Maine and the University of Maine System examples -
Schools of Biology and Ecology, Computing and Information Sciences, Earth and Climate Sciences, Marine Sciences, Forest Resources, Policy and International Affairs, and Business, Departments of Anthropology, Chemistry, and Physics and Astronomy, Hudson Museum, Center for Research in STEM Education (RISE Center), Foster Innovation Center, EMERA Observatory, University of Southern Maine, University of Maine Law School.


US institution examples - Dartmouth College, Harvard University, Lamont-Doherty Earth Observatory, Princeton University, University of Washington, Tufts University, University of Nebraska, University of Oklahoma, Appalachian State University, University of Cincinnati, Texas Tech University, Kansas State University, University of Wisconsin, Brown University, University of Wyoming, Harvard Forest, University of Minnesota Natural Resources Institute, Minnesota Pollution Control Agency, Washington State University, Washington Central University, Konza Prairie Long-Term Ecological Research Station, McMurdo (Antarctica) Long-Term Ecological Research Station, American Museum of Natural History, Boston Museum of Science, University of California – Santa Cruz, Berkeley, Santa Barbara, Brigham Young University, Michigan Technical University, Woods Hole Oceanographic Institute.

International examples – Academic, governmental and non-governmental organizations from the following countries: Australia, New Zealand, Canada, Brazil, Chile, Colombia, Argentina, Peru, India, Nepal, China, South Korea, Tajikistan, Kazakhstan, England, Scotland, Ireland, Denmark, Switzerland, Germany, France, Italy, Spain, Sweden, Norway and most recently: association with the University of the Arctic consortium, United Arab Emirates, and South Atlantic Environmental Research Institute (Falkland Islands), South Shetland Islands and South Sandwich Islands, and University of the Arctic.
Climate Change Institute Themes
That Bind the University of Maine

- Climate Reconstruction
- Human Impacts on the Climate System
- Natural Climate Impacts on Humans & Ecosystems
- Climate Prediction
- Adaptation & Sustainability
- Applied Information Transfer
- Advances in Technology & Cyberinfrastructure

Board of Trustees Meeting - May 2020 - Presentations
**Distinctive Activities**

- **Leadership** in transformational national and international research programs

  - **1970s** - Climate Investigation, Mapping and Prediction
  - **1989-2000s** – Greenland Ice Sheet Project
  - **2000s** – International Tran Antarctic Scientific Expedition
  - **2010s** – Asian Ice Core Array
  - **2010s** - Polar To Tropical Connections

- **Media** including hundreds of State, national and international
  - (eg., LA and NY Times, BDN, Christian Science Monitor, CBS 60 Minutes, Fox, NOVA, NPR Fresh Air and Diane Rhem, Global Post, recent feature length films (eg., Thin Ice (2013), Years of Living Dangerously (2014 Emmy Award), National Geographic Ev

- **CCI researchers average 3-6 honors/awards per year** (UMaine’s first and all four UMaine members of the National Academy of Sciences, the first internationally awarded Medal for Excellence in Antarctic Research, honorary PhDs from several international universities, major student awards, 5 CCI faculty are Distinguished Maine Professors, Maine Environmental Hero Award, Fellows - Explorers Club, AAAS, AGU, APS), Explorers Club Medals, European Geophysical Union Medal, Seligman Crystal Medal.
Ice Core Storage Facility and Environmental Library

W.M. Keck Laser Ice Facility

Cyberinfrastructure
Investigating the past to improve predictions for the future at local to global scales.

Multiple forcing of climate and threshold effects.
Massive decay of marine based ice sheets.
Ecosystem sequencing and climate change.
Natural and human drivers of change in the atmosphere.
Impact of climate change on past civilizations.
DISCOVERY OF ABRUPT CLIMATE CHANGE
The FIRST ABRUPT CLIMATE CHANGE OF THE MODERN ERA

Arctic warming: 
+5°C (+8°F) and a doubling in the length of summer 
In less than five years

Mayewski et al. (2013)
**Extreme events – North Pole**

North Pole above freezing mid-winter several times since 2014
Jet Stream path pushes high winds and dry air into California
Pandemics and Climate
Black Death, 1918 Spanish Flu, COVID-19

Current and projected COVID-19 outbreaks for March-April and COVID-19 and Climate Change
Mayewski and Norchi (2020)

Figure appears in Sajadi et al (2020) U Maryland School of Medicine
Transformative contributions to understanding, predicting and adapting to Maine’s changing climate

Maine focused climate change reports.
Introducing the public to the health implications of local air quality through innovative software.
Making climate data accessible to scientists and the public through innovative software.
Monitoring glaciers to assess future sea level rise.
Monitoring Maine’s lakes, forests, soils and coast.
Evaluating threats: Lyme tick migration; heat wave frequency for Maine.
Multi-disciplinary approaches to the climate change education for the public.
Graduate education at the intersection of climate science and policy.
Climate change impacts

Health and Resource Depletion

Warming (heat stress, vector borne diseases)
Pollutants (respiratory, neurological) acidification, agriculture, forestry (bio-limits)
Extreme events (drought, flooding, storms, heat stress)
Ocean acidification
Water, air, food, oil
Ecosystem resources

Economy

Personal finances
Energy (consumption, efficiency, renewable)
Technology
Redistribution and depletion of resources
Innovation and job opportunities
Globalization vs regionalization

Catastrophes

Extreme events (drought, flooding, heat stress)
Storm surges and sea level rise
Food supply (physical and chemical impacts)
Climate change refugees
Response capability

Geopolitics

Ice free Arctic Ocean
Energy dependence
Water tower countries
Climate refugees
Developed vs developing country blame
Climate change defines the 21\textsuperscript{st} century in ways that we are only beginning to understand.

CCI is responding to and driving transformational advances.

CCI is a uniquely positioned leader in local, national and international arenas.
The National Geographic and Rolex Perpetual Planet Everest Expedition
The Himalayan Water Tower
8848m / 29,029’

Base Camp 5315m/17,437’

An unprecedented opportunity for science.

The world above 5000m/16,000’

Touching the Jet Stream.
The most comprehensive scientific assessment of Mount Everest in history

- Meteorology
- Atmosphere and hydrosphere composition
- Glacial geology
- Biology
- Glacier stability and mapping
UMaine Glacial Geology Team – Mattas, Putnam, Strand
The Khumbu Icefall
South Col 7945m/26,066’
The highest ice core (8,020m/26,312’) in the world

Mariusz Potocki – Climate Change Institute, UMaine Glaciology Team

*PHOTOGRAPH BY DIRK COLLINS, NATIONAL GEOGRAPHIC*
Installed five automated weather stations on Mount Everest, two of which are the world's highest operating stations

1. Balcony 8,430m/27,657’
2. South Col 7,945m
3. Everest BC 5,315m
4. Camp II 6,464 m
5. Phortse 3,810m

Meteorology Team – Baker Perry (Appalachian State), Tom Matthews (Loghboro University, UK), and Deepak Aryal, Arbindra Khadka (ICIMOD, Nepal)
WHY EVEREST?

WATER
for 20% of Earth’s population
HAZARDS
HEALTH
JET STREAM
CLIMATE PREDICTION
SUSTAINABILITY
GEOPOLITICAL IMPLICATIONS
This research was conducted as part of the National Geographic and Rolex Perpetual Planet Expedition to Mt. Everest, in partnership with Tribhuvan University. We wish to thank the communities of the Khumbu Region, our Sherpa climbing support team, local porters and Shangri-La Nepal Trek.

Learn more at NatGeo.com/Everest
University of Maine Graduation 11 May 2019 – Mt. Everest

Laura Mattas, BSc

Heather Clifford, MSc
University of Maine at Machias
GIS Laboratory & Service Center

Machias Downtown Resilience Studies

Tora Johnson
GIS Director/ Assoc. Professor
Chair, Division of Environmental & Biological Sciences

University of Maine at Machias
tjohnson@maine.edu
(207) 255-1214
Background

Earlier work funded by US HUD

Downscaling & iterative public meetings to ID vulnerabilities
King Tide, December 2017
Washington County

- Crowdsourced images
- ArcGIS Survey 123 app
- 130+ submissions countywide
- 120 usable images w/ geotags

Survey, map & app prepared by student
Andrew Howland.
King Tide, December 2017
Washington County

- Web-based map http://arcg.is/q1zzv
- Informs public about climate vulnerability

Survey, map & app prepared by student Andrew Howland.
Flood Scenarios

Highest Annual Tide 2017 8.6 ft

Based on king tide images provided by participating citizens.

Visualization prepared by student Andrew Howland.
Flood Scenarios

BFE = 10.7 ft

Visualization prepared by student Andrew Howland.
Flood Scenarios

BFE +2 = 12.7 ft

Visualization prepared by student Andrew Howland.
Flood Scenarios

BFE + 4 = 14.7 ft

Visualization prepared by student Andrew Howland.
Flood Scenarios

BFE + 6 = 16.7 ft

Visualization prepared by student Andrew Howland.
Flood Scenarios

Base Flood Elevation
BFE +2ft
BFE +4ft
BFE +6ft

Map shows flood scenarios with surveyed buildings at risk.
Machias Waterfront Resilience & Renewal Study

- Public Meetings
- Engage w/ Businesses
- MCP grant
- Preliminary engineering
- Economic risk assessment

Project by students Andrew Howland & David Cisneros

Machias Hardware Parking Lot
King Tide 2017
Photo: Shri Verrill
Economic Picture of Vulnerable Area

18 Businesses, 5 Other Bldgs, & many Outbuildings

Annual Sales: $5,546,336

Business Inventory: $721,024

Annual Earnings: $5,566,213

Jobs: ~115

Machias Hardware
Parking Lot
King Tide, 8.5ft 2017
Photo: Shri Verrill
Cost/ Loss Estimates for a Single Flood Event

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Economic Impact</th>
<th>Buildings w/ Loss</th>
<th>Jobs Impacted</th>
<th>Avg Months to Rebuild</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFE (10.7ft)</td>
<td>$713,297</td>
<td>8</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>BFE +2 (12.7ft)</td>
<td>$7,918,338</td>
<td>17</td>
<td>92</td>
<td>6</td>
</tr>
<tr>
<td>BFE+4 (14.7ft)</td>
<td>$16,889,819</td>
<td>21</td>
<td>108</td>
<td>11</td>
</tr>
<tr>
<td>BFE+6 (16.7ft)</td>
<td>$23,699,916</td>
<td>23</td>
<td>115</td>
<td>15</td>
</tr>
</tbody>
</table>

Average Annual Shellfish Landings for Machias Bay: $1,000,000
(Evans, et al 2016)

- BFE+4 & BFE+6 scenarios pose significant risk to shellfish
- Depending on pollutants, impact could close fisheries for many years
Potential Flood Mapping, Post-Floodwall Construction

- Areas behind Floodwall that remain below BFE potentially rezoned as Zone X
- Areas behind Floodwall to consider Fill and Removal from SFHA
- Estimated Limits of Flooding
- Areas behind Floodwall to consider Fill and Removal from SFHA

Next Steps

FEMA Grant for Machias River Walk
Engineering & design
Assess risk vs. cost
April 9-10 2020

BFE+ 8.4”

Damage to dike, buildings & Sunrise Trail

Preliminary map prepared by Tora Johnson

Being refined using models by student Trevor Riggin.
April 9-10 2020

BFE+ 8.4”

Damage to dike, buildings & Sunrise Trail

Preliminary map prepared by Tora Johnson

Being refined using models by student Trevor Riggin.
Crowdsourcing images of April 2020 storm

Survey, map & app prepared by students Yoni Musher & Devon Jobe.
Living Shoreline Suitability Analysis

Analysis for potential natural shoreline stabilization

Students in GIS II & Applied Projects courses

Maps & analysis by students Colleen Hendricks, Josie Griffin, Serena Watson. Other students on the project: Aaron Bernier & Chris Mullen.
References

Technical Sources for Economic Study:


US Army Corps of Engineers. North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Risk. Physical Depth Damage Function Summary Report, January 2015 *US Army Corps of Engineers (Table 43)

University of Maine at Machias
GIS Laboratory & Service Center
Machias Downtown Resilience Studies

Tora Johnson
GIS Director/ Assoc. Professor
Chair, Division of Environmental & Biological Sciences

University of Maine at Machias
tjohnson@maine.edu
(207) 255-1214
Fulfilling the Promise of Maine’s Public Research University: Leading in a Pandemic through Research

Joan Ferrini-Mundy, President
University of Maine and University of Maine at Machias

May 18, 2020
University of Maine System Board of Trustees Meeting
• UMaine is distinctive as the only public research university and the only land-sea-space grant university in Maine.

• For a land grant university to be effective each part of the mission (teaching, research, service) needs strong emphasis.

• UMaine is a good research university. Focused and strategic effort in the next 2-3 years will make it an outstanding research university.
Years of steady investment and development of research capacity, talent, and infrastructure at UMaine are:

- showing results in research leadership at the state, national and international levels;
- enabling a research-based response in the pandemic to help Maine
- generating ROI for the University, and
- providing our students with distinctive learning opportunities.
1. invest in necessary research infrastructure to grow extramural funding and research expenditures
2. improve reporting of descriptive data about UMaine research enterprise
3. integrate research and instruction and provide research learning experiences for every student
4. increase doctoral degree production
5. enhance partnerships to advance Maine economy and talent post-pandemic
6. expand research accelerator and incubator programs statewide
7. develop UMS strategy to increase State investment in R&D

Reach Carnegie R1 Status by FY24:
A state public research university has a distinctive role and responsibility to:

• Prepare an educated workforce ready to innovate, to solve complex problems, and to contribute to civic life

• Generate knowledge, tools, and ideas that can benefit the state’s quality of life, culture, and economy

• Help address grand challenges and drive economic development
How does the role and responsibility of the research university change in a pandemic?

- Prepare an educated workforce ready to innovate, to solve complex problems, and to contribute to civic life—more rapidly
- Generate knowledge, tools, and ideas that can benefit the state’s quality of life, culture, and economy—support the state in myriad ways
- Help address grand challenges and drive economic development to bolster response and recovery efforts
Problem: Hand sanitizer shortages at Maine hospitals

Solution: A team led by UMaine’s Process Development Center (PDC) and faculty in chemical and biomedical engineering established on-campus production of hospital-grade 80% alcohol-based sanitizer in accordance with FDA Temporary Guidance.

First made using existing university supplies, this effort expanded to a public-private partnership with Maine distillers and brewers supplying the necessary ethanol. Team was able to quickly ramp up production to meet hospital needs and expand to other health care facilities.
Problem: Existing and anticipated shortages of personal protective equipment (PPE) for frontline medical workers

Solution(s):

• Faculty working directly with hospitals on decontamination/sterilization protocols for PPE based on existing and emerging literature

• Collaboration with manufacturing partners on complementary equipment that can be made in-state (e.g. plastic face shields, aerosol boxes for added layers of protection)

• Ongoing efforts among UMaine and health care, industry and government partners to develop a medical-grade mask that can be manufactured in Maine
Meeting the Needs of Businesses and the Public

- Interactive Maine Farm and Seafood Products Directory connects local growers and harvesters with consumers
- Dedicated COVID-19 support programs for Maine farmers, livestock producers, and others involved in food production
- Development of Learn at Home Educational Resources to support students and parents during school closures
UMaine Research Ready to Respond

- Emera Astronomy Center lends computing power to global research efforts to model important coronavirus proteins and predict their three-dimensional shapes
- UMaine faculty and students support Bangor Public Health by collating and evaluating new coronavirus research, government regulations and case figures alongside detailed answers to common questions about the outbreak
- Jessica Miller, UMaine professor of philosophy and staff clinical ethicist at Northern Light EMMC, addresses the “Ethics of Pandemics” in a video lecture using real-world case scenarios and raising some difficult questions
- And more…
UMaine Modern 21st Century Research University Initiative

- **Removal of silos**
  including between academic and research units through close alignment and integration of university research and academic programs

- **Emphasizing Interdisciplinary**
  research and teaching, addressing grand socioeconomic challenges

- **Significant research commercialization coupled with skilled workforce creation**
  leading to robust economic development consisting of new markets, new industries, new jobs

- **Core/shared research resources and facilities**
  that are widely accessible to the university and outside community

- **High impact experiential learning programs**
  through undergraduate research and other means

- **Personalized educational paths**
  meeting individual student needs and interests
Strategic Roadmap to Achieve Carnegie Classification of Highest Research Activity

Kody Varahramyan  
Vice President for Research and Dean of the Graduate School

October 2019

Significant research commercialization coupled with skilled workforce creation leading to robust economic development consisting of new markets, new industries, new jobs

Emphasizing Infrastructure/shared research resources and facilities that are widely accessible to the university and outside community

High impact experiential learning programs through undergraduate, graduate, and individualized educational paths meeting individual student needs and interests

Removal of silos including between research units that misalignment and integrates university research programs
Carnegie Classifications

Doctoral Universities:
- Very High Research Activity: UNH, UCONN, UMASS, Montana State (R1)
- High Research Activity: UMaine

Masters Colleges/Universities:
- Larger Programs: USM

Baccalaureate Colleges:
- Diverse Fields: UMA, UMFK, UMPI, UMF
- Arts & Sciences Focus: UMM, Bowdoin College

Doctoral/Professional University: Husson University
Metrics look good.

**INNOVATION**
- Average number of patents filed per year over the last 5 years: 20
- Number of spin off companies in the past 10 years: 10

**RESEARCH RANKING**
- Top 20% National Ranking in NSF funding (FY2018 HERD)
- Top 20% National Ranking in research expenditures

**FACULTY**
- Percentage of tenure/tenure track faculty engaged in research: 77%

**EXTERNAL FUNDING**
- Incoming grant totals, average over the last 3 years (FY2017-FY2019): 364 Awards, 64.7M

**GRADUATE STUDENTS**
- Number of Graduate Research Assistants (FY2019): 455
- Number of Doctoral degrees awarded (August 18 – May 19): 69
F&A cost recovery is increasing.

IDC Recovered from Projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY16</td>
<td>$7M</td>
</tr>
<tr>
<td>FY17</td>
<td>$8M</td>
</tr>
<tr>
<td>FY18</td>
<td>$9M</td>
</tr>
<tr>
<td>FY19</td>
<td>$10M</td>
</tr>
<tr>
<td>FY20*</td>
<td>$11M</td>
</tr>
<tr>
<td>FY21*</td>
<td>$11M</td>
</tr>
</tbody>
</table>

*Projected
### Number of awards received
- Jul 2017- Apr 2018 (FY18) 281
- Jul 2018 - Apr 2019 (FY19) 317
- Jul 2019 - Apr 2020 (FY20) 279

### Number of large dollar value awards ($1M+)
- Jul 2017- Apr 2018 (FY18) 8
- Jul 2017- Apr 2019 (FY19) 14
- July 2017-Apr 2020 (FY20) 19

### Total value of awards
- Jul 2017 - Apr 2018 (FY18) $50,072,555
- Jul 2018 - Apr 2019 (FY19) $72,268,387
- Jul 2019-Apr 2020 (FY20) $86,673,119

Grant-related trends are strong.
Table 1: Reported 2017 Data (S&E R&D and non-S&E R&D x $1000)

FY 20 baseline metrics, better tracking.

- Research expenditures
- External funding per faculty member
- Number of doctoral students
- Number of invention disclosures
- Number of patents issued
- Licensing revenue
- Number of programs that provide research learning experiences
- Percentage of students who access research learning experiences
- Number of startup/spinoff companies and jobs created
- Number of people employed in the UMaine research enterprise
- Number of people and companies attracted to the state where UMaine R&D has been involved
Additional Slides
Grand Challenge Team Updates

UMaine Medicine: Addressing Renal Disease, Metabolic Disorders, and Infectious Diseases Among Isolated Populations in Rural Maine

- UMaine: Benjamin King, Robert Wheeler, Nishad Jayasundara, Kristy Townsend, David Harder;
- UMA: Con Sullivan

- External collaborators: MDIBL, JAX, MMCRI, and Northern Light Health

Update: A research MOU between UMaine and Northern Light Health under development for collaborative biomedical research studies, including a 2000 subject renal disease study.
Expanding Telehealth Training and Use to Support Developmental and Emotional Needs of Children in Rural Maine Schools

- USM: Kimberley Fox, Yvonne Jonk, Mary Anderson;
- UMaine: Judy Walker,
- External collaborator: Maine CDC, Maine school districts

Update: UMaine’s Speech Therapy program receiving many technical assistance inquiries given current COVID-19 operating conditions. The team is tracking evolving State and federal changes in previously school-based service provision.
Grand Challenge Team Updates

University of Maine System Injury Prevention Collaborative

• UMaine: Marcella Sorg, Jamie Wren; USM: Judith Tupper; UMPI: Nicole Fournier, Kim Jones
• External collaborators: Maine CDC, Medical Examiner, and SAMHS

Update: Providing opioid death data to Maine CDC to enhance COVID-19 data reporting; developing public health “citizen science” data collection app to track secondary impacts of COVID-19
University of Maine System
Roux Institute/Northeastern University Update

UMS Board of Trustees Meeting
May 18, 2020

President Joan Ferrini-Mundy
University of Maine and University of Maine at Machias

President Glenn Cummings
University of Southern Maine
Prospects for academic program collaborations

- UMaine and Northeastern to launch the partnership with 4+1 agreements for Computer Science and Bioinformatics
  - UMaine is developing a list of undergraduate programs that will feed one or both of the 4+1 programs
  - Northeastern will match that list to graduate coursework in Computer Science and Bioinformatics
Prospects for research collaborations

• UMaine visit to Northeastern Burlington Campus Feb. 12, 2020
  ▪ Toured research facilities
  ▪ Shared 13-page list of possible UMaine research collaboration areas
  ▪ Presidents Aoun & Ferrini-Mundy and Provosts Gilbert & Bean had strategic partnership discussion

• Northeastern visit to UMaine Feb. 18, 2020
  ▪ Toured Advanced Structures and Composites Center; Advanced Manufacturing Center; Frontier Institute for Research in Sensor Technologies; School of Computing and Information Science; and biomedical, wireless communication and other facilities
Prospects for joint funded projects

• UMaine and Northeastern vice presidents for research agreed to provide seed funding to initiate research collaborations.

• Northeastern sees collaboration opportunities with Advanced Structures and Composite Center, and Advanced Manufacturing Center.

• UMaine and Northeastern have developed an MOU to support joint collaborative research projects between the two institutions.
Next Steps

• Secure all signatures to finalize the joint research funding MOU with Roux Institute of Northeastern University.

• Continue discussions about the 4+1 joint academic programs

• Visiting Scholars is in planning phase, where Northeastern faculty would visit UMaine for a month or semester and vice versa.
Beginning conversations on academic pathways for 4+1 Programs:

- Artificial Intelligence
- Bioinformatics
- Biomedical
- Nanotechnology
- Precision Health
- Robotics

Discussions of research:

- Cutler Institute and the Muskie School of Public Service: Health Science and Public Health
- CSTH: Computer Science, Data Science, Engineering, Microbiology, & Cybersecurity
- MIST/CERL/Law School: Technology Transfer & Product Development
Access to Facilities & Support Services

- Graduate Housing on the Portland Campus
- Student Center on the Portland Campus
- Labs & Research Facilities through joint partnership and projects
- Facilities for Athletics
- Mental health counseling and student support services

Also interested in the relationship between the Graduate Center and the Roux Institute