

Week of July 27

Trustees -

With the traditional start of our fall semester now just a month away, pandemic-related planning and information have, of necessity, been the primary focus of my weekly reports of late. Today I'd like to turn to grant-funded research and university researcher engagement on the most critical issues of the day.

I'll start with a significant grant award announced this week by the U.S. Department of Education to the Maine Department of Education. Through its Education Stabilization Fund-Rethink K-12 Education Models Discretionary Grant Program, USDOE awarded nearly \$17 million to the Maine Department of Education to support Maine's Rethinking Remote Education Venture over the next three years, with significant help and leadership from the University of Maine and University of Southern Maine.

We're all generally familiar with how the COVID-19 virus has disrupted our K-12 education system this year, with the sudden necessary shift to "emergency style" remote learning resulting in unevenly successful experiences for students. Recognizing that under-represented students, students of color, students with disabilities, and disadvantaged students report particularly poor experiences and outcomes from emergency remote education, Maine's Department of Education Maine's Rethinking Remote Education Venture (RREV) proposed to offer a multi-pronged solution with the primary goal of generating innovative remote learning models to provide equitable access to high quality educational experiences for all students. More specifically, with funding now secured, RREV will develop a systemwide cadre of "Education Engineers" who will design remote learning prototype models to be field tested, revised, and honed by schools willing to pilot these models. In order to encourage K-12 teaching professionals to engage in the invention of exciting and different remote learning models, and to provide necessary supports for schools that are willing to pilot, evaluate, and suggest revisions and improvements to these models, the Maine DOE proposes to shift the culture of Maine's K-12 education system toward innovation. To do so, Maine DOE will provide professional development, coursework, and guided engagement in effective use of design processes to empower K-12 educators and school leaders as authentic research and development professionals. When new remote learning models are designed and piloted, they will be made available through an open-source community of practice platform to support collegial sharing, ongoing critical and supportive feedback loops, and continual revision and improvement to sustain the culture of innovation and to foster statewide (and nationwide) open access to exciting new remote learning models.

Maine DOE will be working with UMaine and USM, as well as other higher education partners, to make courses in research and development, innovation engineering, and design processes widely available to educators and school leaders. USM's Center for Teaching Innovation will lead their portion of the project. UMaine expects to develop and offer specialized graduate-level courses in educational innovation that build on cross-disciplinary concepts of Innovation

Engineering, providing specialized tools and approaches for educators that highlight education case studies. Additionally, UMaine intends to provide professional development workshops in innovation for educators as part of the UMS microcredential initiative, as well as professional development offerings from the College of Education in digital learning. Finally, UMaine expects to provide consulting services to support project teams developing innovative education models.

It is critical that UMS leads innovation in Maine, and as important, that our universities be perceived as indispensable partners in that effort. UMaine and USM will demonstrate just that in their leadership with Maine DOE as the Rethinking Remote Education Venture work gets underway.

We remain actively engaged with Maine DOE in other projects as well.

Vice Chancellor for Academic Affairs Robert Placido and Deputy Vice Chancellor Kay Kimball have continued discussions with DOE leaders and UMS Education program leaders, including provosts and deans, on DOE's proposal to bring pre-service student "avatars" into Maine's K-12 classrooms to support teachers who can't be there. The DOE anticipates a pandemic loss of 20-22% of K-12 staff (teachers, facilities staff, food service, etc.) and is seeking ways to mitigate that. Ideas under discussion include internships, microcredentials, drawing on recent graduates, paying classroom substitutes, and using students from other disciplines, among others. There are as many questions as ideas: how to coordinate all of this, who will pay for it, whether partner schools want any more people in their socially-distanced classrooms, and whether there's sufficient time to adjust UMS student teaching and practicum placements that are already established for the fall semester. Communication and coordination are critical, and Robert, Kay, and university academic and education program leaders will remain fully engaged for this purpose. Here too, UMS will be supportive and continue its leadership role in discussions with Maine DOE.

The University of Maine reported this week that it generated \$104.2 million in research grants and awards in FY20. This is an all-time high level of externally-generated research funding realized by the university, representing an 80 percent increase in external research funding over the past three years. Of the total, College of Engineering researchers secured \$33.4 million in awards, a 25 percent increase over last year's external funding for engineering-based research.

UMaine's rapid growth in research awards stems from the university's strategic pursuit of growth in research, including its drive to "R1" research status. With the University of Maine being the locus of more than 85 percent of all university-based research in the state, and the source of 96 percent of all Ph.D.s conferred, it is crucial that UMaine have the proper research development and administration resources to responsibly maintain growth in research - a point the New England Commission of Higher Education (NECHE) asked the System to address further in its Self Study report for NECHE's first comprehensive evaluation of unified accreditation in Fall 2022.

With the omnipresence of the Coronavirus pandemic, I'll close my discussion of research by calling your attention to a specific project underway in UMaine Assistant Professor of Biomedical Engineering Caitlin Howell's lab. Before COVID-19, Professor Howell, who also serves on the [UMS Scientific Advisory Board](#) that is advising all aspects of our pandemic planning, worked on developing liquid membranes designed to prevent bacteria from latching onto surfaces like the inside of a pipe or underside of a boat. But as reported recently at [businessinsider.com](#), Professor Howell adapted her liquid membrane work to begin studying the degree to which virus particles linger in the air. Her goal: install a liquid membrane in place of traditional air filters to trap live coronavirus particles. Having such a tool would allow researchers to then analyze aerosol samples from a given space, helping to determine how much of the virus was spreading and whether it could have infected people. Professor Howell's work will be supported by a \$225,000 National Science Foundation grant, and she'll be working with both UMaine Assistant Professor of Virology and Scientific Advisory Board Co-Chair Melissa Maginnis and UMass Amherst chemical engineer Jessica Schiffman. You can see the full story of Professor Howell's research [here](#) and [here](#).

All of the work I summarize here advances the System's tripartite mission of teaching, research, and public service in support of our students and state. Along with research and public service, we are steadfast in our initial planning to use unified accreditation to offer more market-relevant academic programs more efficiently across the state, adjusting to budget realities as we must, especially given the State's first public forecast of current and near-term economic challenges. As you likely saw from the Governor's statement at midweek, the State is projecting that General Fund revenues will decrease by \$524 million in Fiscal Year 2021, \$434 million in Fiscal Year 2022, and \$449 million in Fiscal Year 2023 as a result of the COVID-19 pandemic. Even with \$106 million of surplus on hand due to fiscal tightening once the pandemic hit, contraction is obviously ahead. The work we are initiating to develop Statewide Strategic Program Planning documents for major programs areas (e.g., Business/MBA, Nursing, Education, and Engineering) will become all the more relevant to ensure we can meet critical state needs with the fewer resources that are likely to be available to us in the next few years.

I wish you a productive and positive week ahead.

Regards,
Dan