FY 2021
CAPITAL BUDGET TESTIMONY

Senate Budget and Taxation Committee
Capital Budget Subcommittee
March 3, 2020

House Appropriations Committee
Capital Budget Subcommittee
March 11, 2020

Testimony by Dr. Peter Goodwin, President

University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

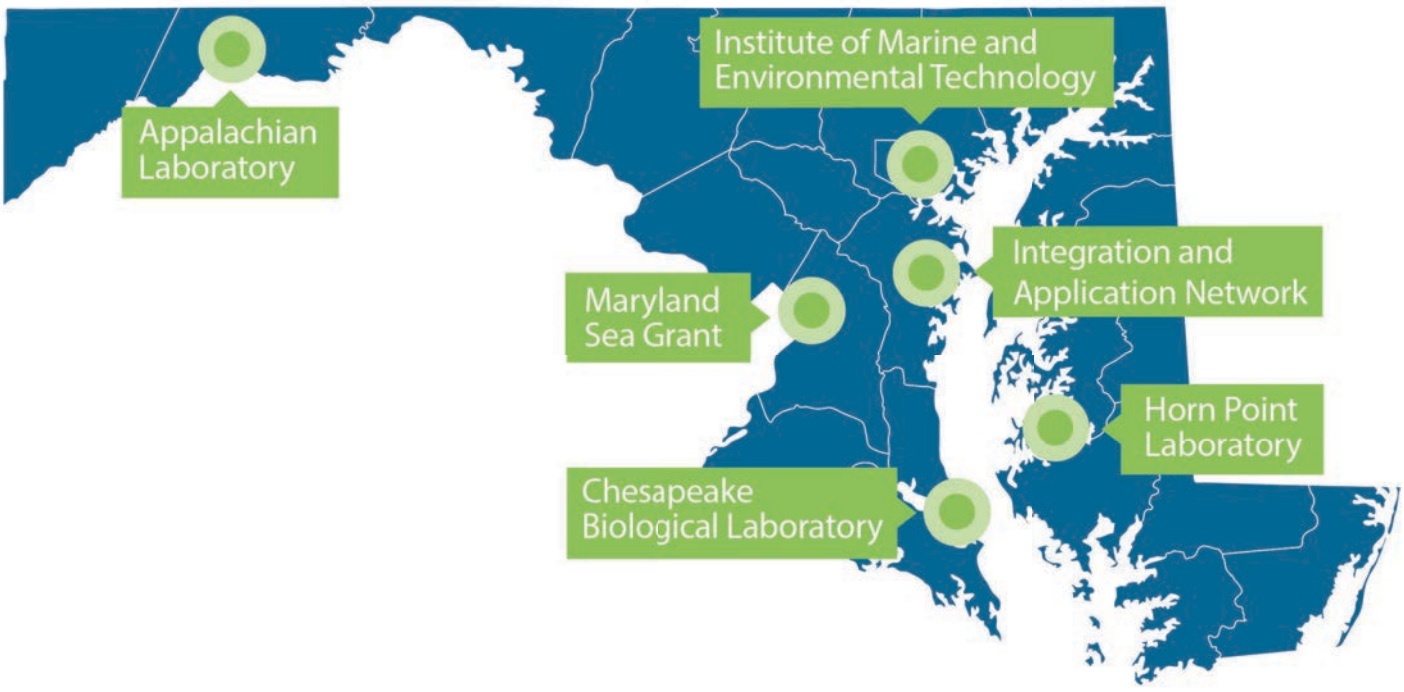
Introduction

I am pleased to present for the General Assembly's consideration the FY 2021 Capital Budget request for the University of Maryland Center for Environmental Science (UMCES).

First, I want to express appreciation for the General Assembly's steadfast support for significant facility improvements at our laboratories across the state. This has brought great returns to Maryland, not just in the external research funding we have been able to attract, but, more importantly, in the knowledge that has been generated pertinent to the effective protection and restoration of the Chesapeake Bay and its watershed.

UMCES has a rich tradition of research and innovation that has supported the citizens and agencies of the State of Maryland since its founding nearly 100 years ago. As trusted scientific advisors, our faculty provide unbiased research to inform public policy on pressing environmental issues, both in Maryland and around the world.

We have always been distinguished by our ability and willingness to engage policy-makers, support science-based decision-making by managers, and communicate this information in an actionable and understandable way. In a very real sense, this is part of our institutional DNA.



"The University of Maryland Center for Environmental Science shall conduct a comprehensive program to develop and apply predictive ecology for Maryland to the improvement and preservation of the physical environment, through a program of research, public service, and education."

COMAR, Natural Resources Article Section 3-403

Chesapeake Analytics Collaborative Building *a collaboratory*

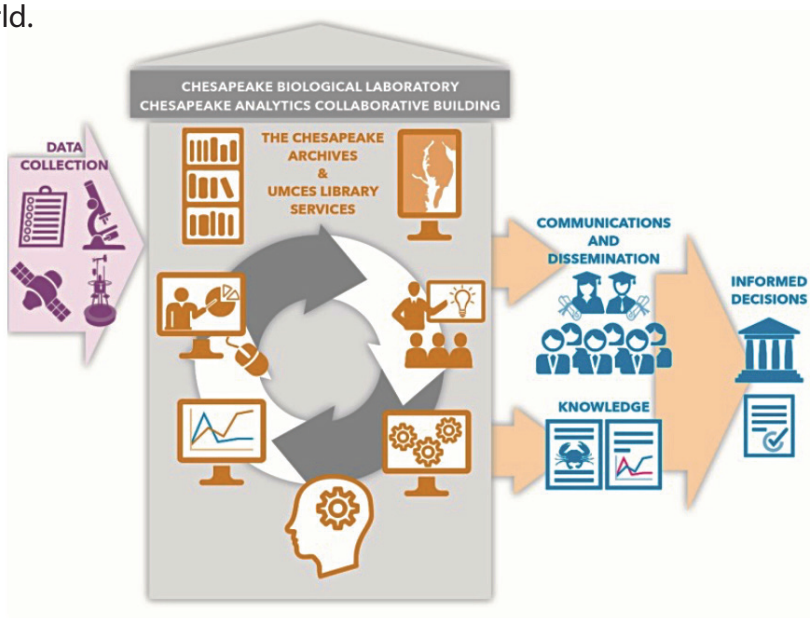
In order to alleviate a critical shortage of collaborative, learning and library space, as well as modern infrastructure to support IT, we are planning a cost-effective building at the Chesapeake Biological Laboratory.

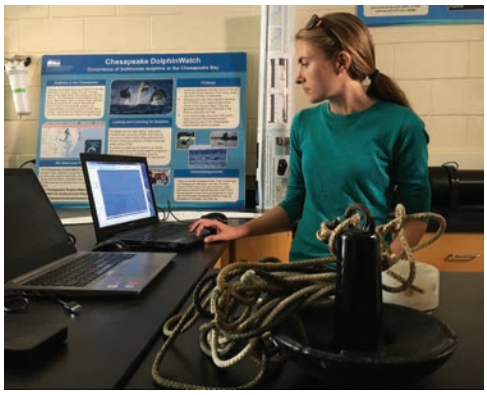
Approaches to scientific research and natural resource management is being transformed by the massive volumes of data, the sophistication of models, and the complexity of questions being asked of resource managers. This challenge has been recognized by the National Science Foundation:

> "Convergence research is a means of solving vexing research problems, in particular, complex problems focusing on societal needs. It entails integrating knowledge, methods, and expertise from different disciplines and forming novel frameworks to catalyze scientific discovery and innovation."[1]

This scientific discovery is being accelerated by collaboration across multiple disciplines through the principles of Team Science[2]. Effective implementation of convergent research requires a totally new approach to the design of the physical space required and is not easily accomplished by retrofitting existing facilities. These innovation spaces have been pioneered in areas such as Silicon Valley and the Wisconsin Institutes for Discovery[3].

The collaboration laboratory/building, a collaboratory, will be designed to empower the discovery, interpretation, and communication of meaningful patterns in data and information to support the restoration of Chesapeake Bay and similar ecosystems around the world.





[1] https://www.nsf.gov/od/oia/convergence/index.jsp
[2] http://sites.nationalacademies.org/DBASSE/BBCSS/CurrentProjects/ DBASSE_080231
[3] https://discovery.wisc.edu

Chesapeake Analytics Collaborative Building

The collaboratory will empower the discovery, interpretation and communication of meaningful patterns in data and information to support the restoration of Chesapeake Bay.

Features of the collaboratory will include:

- **Flexible and adaptable spaces** to focus on specific problems. It is envisioned that space will be dedicated to specific issues for discrete periods of time. It will allow clusters of scientists and engineers, students as well as experts from agencies, universities, the private sector, NGOs, and other interested parties to interact and guide progress toward the questions posed by state and federal leadership.

- **Large-scale visualization and virtualization capabilities** to collectively explore large data sets, model simulations and predictions of alternative futures under various management interventions.

- **Data mining, synthesis**, **biostatistics, interpretation,** access to national super computers and other computational cores, and knowledge archives.

- **Scientific interpretation and communication** at all levels, including scientists, engineers, policymakers, managers, stake-holders, the public, and K-12 outreach.

DLS recommendation

We are very pleased that the Regents and the Administration are supporting this request for $1.448 M planning funds needed for the Chesapeake Analytics Collaborative Building. The total cost of this 8,720 NASF/13,750 GSF facility is $18.798M.

I appreciate the positive recommendation of the Department of Legislative Services for this project and respectfully request the General Assembly's inclusion of the Chesapeake Analytics Collaborative Building in the FY2021 Capital Appropriation.