

**Report to the  
Faculty, Administration, Trustees, and Students  
of  
University of Maryland Center for Environmental Science  
2020 Horns Point Road  
Cambridge, MD 21613  
by  
A Self-Study Evaluation Team Representing the  
Middle States Commission on Higher Education**

**Prepared After a  
Visit to the Institution on:  
November 1 – 4, 2015**

**The Visitors:**

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Acting President, University of Delaware**

**Dr. Bruce Bongarten (Team Member)  
Provost and Vice President for Academic Affairs  
SUNY College of Environmental Science and Forestry**

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**Dr. Henry Van Zyl (Team Member)  
Dean, Office of Graduate Programs, and Vice Provost, Academic Administration  
Thomas Edison State College**

**Working with the Visitors:**

**Dr. Tito Guerrero, III**  
**Vice President**  
**Middle States Commission on Higher Education**

**At the Time of the Visit:**

**President/Chief Executive Officer:**  
**Dr. Donald F. Boesch**

**Vice President for Education**  
**Dr. Edward D. Houde**

**Chair of the Board of Regents:**  
**Mr. James L. Shea**

**I. Institutional Overview**

The University of Maryland Center for Environmental Science (UMCES) traces its origin to the founding of the Chesapeake Biological Laboratory (CBL) at Solomons, MD in 1925. As such, it is the oldest permanent, state-supported marine laboratory on the east coast. The evolution of UMCES as a geographically dispersed, academic institution within the University System of Maryland (USM) is outlined in the Milestones for UMCES noted below. The Center for Environmental and Estuarine Studies (CEES) was established in 1973 and included the CBL, the Appalachian Laboratory (AL) and the Horn Point Laboratory (HPL). The UMCES name was adopted by legislation in 1997. Recent expansion in 2010 added elements of the Institute of Marine and Environmental Technology (IMET) to UMCES. Each addition has added diversity and depth to the Center. The diversity of disciplines and the locations of laboratory units across the State have allowed UMCES to conduct highly successful, interdisciplinary research and education programs in environmental sciences that are globally eminent while responsive to the needs of the citizens of Maryland.

Milestones for UMCES

**1925: Chesapeake Biological Laboratory** established (Solomons, MD)

**1941: Department of Research and Education** created as independent state agency (legislative act). CBL included in the Department

**1961: Natural Resources Institute (NRI)** created to incorporate the previously independent Department of Research Education into the University of Maryland (legislative act). Appalachian Laboratory established (Frostburg, MD)

**1973: Center for Environmental and Estuarine Studies** (legislative act, 1975), Horn Point Laboratory established (Cambridge, MD). Two small NRI field laboratories closed.

**1997: University of Maryland Center for Environmental Science** (legislative act to change name)

**2000: Maryland Sea Grant College Program** (College Park, MD) placed under UMCES administration

**2010: Institute of Marine and Environmental Technology** reorganized as partnership among UMCES, University of Maryland Baltimore County and University of Maryland, Baltimore (Baltimore, MD)

**2013: UMCES** authorized to award joint graduate degrees and post-baccalaureate certificates (legislative act)

**2013: UMCES** granted Candidate for Accreditation status by the Middle States Commission on Higher Education

For the past 54 years, UMCES has operated as a multi-unit institution of what today is the University System of Maryland (USM). It has a rich tradition of excellent research, education and public outreach related to natural resources and the environment, conducted under its enabling legislation. UMCES operates under the laws of Maryland as codified in both the Natural Resources Article (Md. Code Ann. Com. Law §§ 3-401 and 3-402 and 3-403) and the Education Article (Md. Code Ann. Com. Law §§10-101 and 12-104) to “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.”

UMCES is a research, education, and service institution of the USM and a world leader in the science of coastal environments and their watersheds. It is one of twelve institutions included in the USM. The Center’s faculty advances knowledge through scientific discovery, integration, application, and teaching that results in a comprehensive understanding of our environment and natural resources, helping to guide the State and world toward a more sustainable future. Through its role as the responsible institution for administration of the Maryland Sea Grant College and numerous collaborative programs with other institutions, UMCES leads, coordinates, and catalyzes environmental research, education, and outreach within the University System (UMCES Strategic Plan 2012).

UMCES is the smallest of the twelve USM institutions. In July 2013, UMCES included 50 tenured and tenure-track faculty members (including two librarians), 22 senior research faculty members, and 14 research scientists (post-doctoral appointments). Numbers of administrative, technical, and clerical staff totaled 297 in July 2013. The numbers of graduate students (MS and PhD) in the Marine-Estuarine-Environmental Sciences (MEES) Graduate Program, the primary home of UMCES graduate students, has ranged from 71 to 116 in the period 2002-2012, and presently is 77.

Each UMCES Laboratory is administered by a Director, who is responsible for faculty and scientific staff, facilities operations, and fiscal administration. The UMCES Center Administration

is located primarily on the Horn Point Laboratory campus in Cambridge and operates under the President and Vice Presidents for Administration and Science Application. The office of the Vice President for Education is located at the Chesapeake Biological Laboratory in Solomons. The Vice President for Institutional Advancement is located at the IMET site in Baltimore. Additional administrative offices are in Annapolis, MD. The UMCES administrative officers comprising the President, Vice Presidents and Laboratory Directors are responsible for oversight and coordination of the Laboratories, including graduate students, and external representation to the USM, its clients and constituents. The UMCES President is a member of the Council of University System Presidents, with responsibilities delegated by the Board of Regents and Chancellor that are equivalent to those of Presidents of other USM institutions.

## **II. Nature and Conduct of the Visit**

The visit was conducted by a team of 7 peer evaluators as part of the institution's self-study.

Documents provided by the institution as part of the evaluation included an UMCES Self-Study Report and more than 300 supporting documents. A comprehensive list of these can be found on pages 54-59 of the self-study report.

In addition, the team met with the following individuals/groups during the site visit (some multiple times).

- Dr. Jennifer Franke, Assistant Secretary of Higher Education, Maryland Higher Education Commission
- Dr. Robert Caret, Chancellor USM (by phone)
- Dr. Donald Boesch, President, UMCES
- Dr. Edward Houde, VP for Education, UMCES
- Ms. Erica Kropp, VP for Administration, UMCES
- Dr. William Dennison, VP for Science Applications
- Mr. David Balcolm, VP for Institutional Advancement
- Mr. David Nemazie, Chief of Staff
- Ms. Amy Pelsinsky, Director of Public Relations
- Ms. Lisa Ross, Director of Human Resources
- UMCES Lab Directors
  - IMET-Dr. Russell Hill
  - CBL- Dr. Thomas Miller
  - HPL- Dr. Michael Roman (by phone)
  - ARL- Dr. Eric Davidson (by phone and IVN)
- UMCES Faculty Senate Chair, Dr. David Secor
- USM Vice-Chancellor for Academic Affairs, Dr. Joann Boughman
- MD Sea Grant Director, Dr. Fredrika Moser
- UMCES Comptroller, Ms. Beth Pinder
- UMCES Director of Facilities Administration, Mr. Ray Cho

- UMCES Manager of Budget Operations, Ms. Gerri Moore
- Member USM Board of Regents, Mr. Barry Gossett
- Member UMCES Board of Visitors, Mr. Thomas Langan, Esq
- Key Members of the Steering Committee
- UMCES Executive Council
- UMCES Board of Visitors Chair, Mr. Charles Monk, Esq
- MEES Director, Dr. Kennedy Paynter
- UMCES Faculty (at each location visited and via IVN)
- UMCES Staff (at each location visited and via IVN)
- UMCES Graduate Students (at each location visited and via IVN)

### **III. Affirmation of Compliance with Requirements of Affiliation**

Based on a review of the institution's self-study and appendices, interviews, and other institutional documents, the team affirms that the institution meets the Requirements of Affiliation.

### **IV. Commendations and Summary of Institutional Strengths**

The institution's strengths can be summarized as follows:

*Mission.* There is a clarity of mission among UMCES faculty and staff. People can articulate the mission in a simple clear manner.

*Integration.* UMCES is comprised of four disparate, but synergistic, units located in geographically separate places that see themselves as part of one entity. This sense of integration and synergy, of the whole being more than the individual sum of its parts, occurs at all levels (faculty, staff, students) and across all units.

*Culture of Collegiality and Transparency.* Despite a governance structure in which all policy making authority is vested in the president, a culture of collegiality seems to characterize policy development at UMCES. Embedded in this is a culture of research excellence and community engagement (outreach). There is an established culture of transparency in communicating administrative decisions to faculty, staff and students that no doubt enhances the sense of collegiality within the UMCES community.

*Students.* Faculty and staff have an excellent relationship with students. The graduate students feel supported and feel that they are part of a positive research and learning environment. They are treated like colleagues and clearly benefit from and appreciate faculty collegiality.

*Sponsored Programs Unit.* This function is highly effective and integrative.

## V. Compliance with Accreditation Standards

### Standard 1: Mission and Goals

*The institution's mission clearly defines its purpose within the context of higher education and indicates who the institution serves and what it intends to accomplish. The institution's stated goals, consistent with the aspirations and expectations of higher education, clearly specify how the institution will fulfill its mission. The mission and goals are developed and recognized by the institution with the participation of its members and its governing body and are used to develop and shape its programs and practices and to evaluate its effectiveness.*

The team's judgement is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** UMCES mission is defined broadly under Maryland legislative statutes. The UMCES Institutional Mission Statement is approved by the USM Board of Regents and by the Maryland Higher Education Commission. This three paragraph statement can be summarized as follows: UMCES will advance knowledge through scientific discovery, integration, application, and teaching that results in a comprehensive understanding of our environment and natural resources, helping to guide the State and world toward a more sustainable future.

The Mission Statement outlines five institutional goals that include strengthening capacity for: scientific discovery, integration and synthesis, graduate education, community engagement, and scientific leadership at local to global levels.

The Mission's goals and objectives are converted into actionable items in the Strategic Plan (most recently updated in 2012). The Strategic Plan articulates core values that tie directly back to the Institution's Mission statement. Specific goals and objectives are set forth in the Strategic Plan. The five science focus areas outlined in the plan are directly related to the Institutional Mission and are relevant to the legislative mandate.

Faculty, staff and students are aware of and can articulate the major elements of the UMCES mission statement.

UMCES appears to meet the MSCHE standard for **Mission and Goals** having demonstrated:

- A clearly defined purpose within the context of higher education, and
- Stated goals that fulfill the institutional mission and shape its direction.

**Recommendations:** None

**Suggestions:** None

**Standard 2: Planning, Resource Allocation, and Institutional Renewal**

***An institution conducts ongoing planning and resource allocation based on its mission and goals, develops objectives to achieve them, and utilizes the results of its assessment activities for institutional renewal. Implementation and subsequent evaluation of the success of the strategic plan and resource allocation support the development and change necessary to improve and to maintain institutional quality.***

The team's judgement is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** The goals and objectives, both institution-wide and for individual units operated by UMCES, are clearly stated in the institution's Master Plan. The Master Plan provides a framework for initiating solutions to the many physical plant and development matters confronting the three laboratories operated by UMCES: UMCES Appalachian Laboratory, UMCES Chesapeake Biological Laboratory and UMCES Horn Point Laboratory. The Master Plan indicates the Maryland Sea Grant College in College Park and the Annapolis office are leased facilities and the Institute of Marine and Environmental Technology is operated by the University of Maryland Baltimore County and therefore are not included in the Master Plan.

The Master Plan is closely tied to the institution's mission, identifies the vision, discusses the planning principles, identifies major capital projects, establishes renewal plans and deferred maintenance schedules for the three laboratories operated by UMCES. UMCES has a clear focus on establishing sustainable designs approaches and sets environmental stewardship goals. UMCES is committed to safe, responsible and sustainable facility design and operations, including in its capital and facility renewal projects and practices in four major sectors: (1) greenhouse gas reductions, (2) storm water management and domestic water conservation, (3) resource conservation, and (4) education, civic engagement and communication. UMCES became a signatory to the American College and University Presidents Climate Commitment (ACUPCC) in December 2007 submitting its Climate Action Plan (CAP) in 2010. UMCES has submitted Public Greenhouse Gas Reports every two years since 2008 and filed two progress reports in 2012 and 2014 indicating an investment to fund its CAP from grant sources of \$240,000 along with access to funding obtained through the Maryland Energy Administration low-interest state loan program (SALP) for energy performance contract projects.

Capital plans include the facility and infrastructure projects for the next ten years, which are divided into two five year funding periods. One funding period covers 2012 to 2017 while the other period covers 2018 to 2022. The capital plans include detailed descriptions of each capital project including its cost, purpose and justification. The plans are available for the three

laboratories operated by UMCES. The R.V. Truitt Laboratory replacement project is on track for completion in 2016 while the Information & Communication Services Building is currently in the planning stages and funding for this project has not currently been identified. Planned resource renewal projects are included in the Master Plan and the institution indicated all of the renewal projects in the Master Plan have already been completed. UMCES recently established a Facilities Renewal and Deferred Maintenance process for its labs; however, the policies and procedures for this process have not been formally documented and communicated to all constituents of the institution. The renewal project identification process identifies renewal projects for the current fiscal year including estimated costs and prioritization of each project. The funding source for capital projects is not clearly detailed in the Master Plan and primarily depends on the success of state budget requests.

UMCES appears to meet the MSCHE standard for **Planning, Resource Allocation, and Institutional Renewal** having demonstrated:

- Clearly defined goals and objectives within the institution's Master Plan, and
- Ongoing planning and resource allocation for capital projects, renewals, and deferred maintenance.

**Recommendations:** UMCES should complete implementation of their Facilities Renewal and Deferred Maintenance process by adopting formal policies and procedures that are made available to all constituencies.

UMCES should identify both short and long term Facilities Renewal and Deferred Maintenance Plans. The institution would benefit from a planning process that identifies renewal projects beyond the current fiscal year.

**Suggestions:** UMCES should evaluate the effectiveness and success of their planning, resource allocation, and institutional renewal and capital plans to help ensure appropriate changes necessary to improve and maintain institutional quality are implemented.

### **Standard 3: Institutional Resources**

***The human, financial, technical, facilities, and other resources necessary to achieve an institution's mission and goals are available and accessible. In the context of the institution's mission, the effective and efficient uses of the institution's resources are analyzed as part of ongoing outcomes assessment.***

The team's judgement is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** The human, financial, technical, facilities and other resources necessary to achieve the institutions mission and goals are available and



accessible. In the context of the institution's mission, the effectiveness and efficient use of the institution's resources are generally analyzed as part of assessing outcomes.

UMCES has access to financial resources through the policies of the University System of Maryland Board of Regents (USM BoR) capital budget plan, bond funds through the University System of Maryland and their annual operating budget request to the USM BoR.

Annual appropriations from the State require constant evaluation and assessment of funded programs by institutions in the USM, including UMCES. UMCES relies on state allocations to meet their operating expenses and fund capital and renewal projects. The government budgeting process in Maryland only requires annual budgets for approval by the legislature; therefore, multiple year budget forecasts are not required or prepared for all operating units. UMCES prepares budgets for each of the four laboratory units, research fleet operations and center administration along with a consolidated budget for all operations that include one year of actual for FY15, one year of appropriations from the University System of Maryland Board of Regents (USM BoR) for FY16 and one year that reflects each unit's budget request for FY17. The budgets indicate UMCES has the ability to fund operations without using any portion of its unrestricted fund balance.

Performance based funding was initiated as a pilot program by the Maryland legislature in FY14 and performance measures for UMCES were evaluated by the University System of Maryland (USM). To date, the state has not pursued this any further.

UMCES is in the final stages of implementing a process to evaluate the effectiveness of the institution reaching its research grant and contract award goals. The institution established a center wide goal of \$26.5 million in sponsored programs for FY16. To establish the metrics for evaluating the effectiveness of meeting its goal the institution analyzed the prior five years of actual awards by month to determine the timing of grant awards and establish a historical trajectory of when grant awards are received by the institution. The institution then compared actual grant awards by lab versus the monthly targets it established from its historical analysis to ascertain whether it is meeting its goal. This process is relatively new with its first report being completed in FY16; however, the results of this assessment have not yet been communicated to individual labs. This metric will play an important role in determining whether the institution is meeting its sponsored program goals.

A budget process that included multiple years would assist in evaluating possible impacts to the financial stability of the institution and would help to ensure the financial planning process is aligned with the institutions mission and goals including its ability to fund capital and renewal projects. The institution has evaluated the benefits of implementing this process and believes it doesn't add value because funding requests are dependent upon state funding. The institution relies heavily on sponsored programs, so a process that incorporates sponsored programs beyond the current year would help ensure that students enrolled in programs at the institution are adequately funded.

UMCES exhibits an understanding of the challenges of funding capital projects and maintaining an investment in its renewal of capital assets fund because projects are ultimately funded by the state and depend on successful budget requests. Despite budget cuts, the institution has been able to make capital investments and fund renewal projects and clearly identifies an understanding of its opportunity to increase the level of investment in renewal projects and deferred maintenance.

The USM is independently audited annually and the consolidated results for USM include UMCES. There is no indication in the financial statements that USM and its components have a going concern issue regarding its continued financial stability and viability.

UMCES appears to meet the MSCHE standard for **Institutional Resources** necessary to achieve goals having demonstrated:

- Availability and accessibility of resources, and
- Efficient and effective use of resources.

**Recommendations:** UMCES should complete implementing its process to evaluate the effectiveness of the institution reaching its research grant and contract award goals, communicate the results of this assessment with individual labs and formalize the process with written procedures that are shared with the institution's constituents.

UMCES should begin a multiple year operating budget planning process for its sponsored programs to understand the funding available to support students in funded research projects. This process will assist the institution in their planning to implement the Strategic Plan in a more thorough and thoughtful manner.

#### **Standard 4: Leadership and Governance**

***The institution's system of governance clearly defines the roles of institutional constituencies in policy development and decision-making. The governance structure includes an active governing body with sufficient autonomy to assure institutional integrity and to fulfill its responsibilities of policy and resource development, consistent with the mission of the institution.***

The team's judgement is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** UMCES is a unit of the University System of Maryland. The Maryland Board of Regents serves as the governing body for the System. Each of the System institutions reports to the System Chancellor, who in turn reports to the Board of Regents. The Board of Regents makes System policies.

Within UMCES, the President is responsible for authorizing all new policy following consultation with the UMCES Administrative Council, which includes representation from the Faculty Senate, the Staff Council, and the Graduate Student Council. Each of the four councils has by-laws that articulate their membership and authority. Interviews during the site visit confirmed the collegial nature of policy development including faculty, staff, and student input.

UMCES has a Board of Visitors, which serves in an advisory role to the President and is active in philanthropic fundraising. It has no role in institutional governance.

UMCES appears to meet the MSCHE standard for **Leadership and Governance** having demonstrated:

- A clearly defined structure of governance,
- Constituents that share in policy development, and
- A defined role for each constituent body.

**Recommendations:** None.

**Suggestion:** UMCES should develop by-laws for the Board of Visitors to clarify the Board's role and membership.

#### **Standard 5: Administration**

***The institution's administrative structure and services facilitate learning and research/scholarship, foster quality improvement, and support the institution's organization and governance.***

The team's judgement is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** A long-standing and highly qualified President, appointed by the Chancellor of the University of Maryland System and reviewed annually by the same, leads UMCES. Reporting to the President are four Vice Presidents, a Chief of Staff, the four Laboratory Directors and the Director of the Maryland Sea Grant program, each of whom appears to be qualified, effective, and respected by the UMCES faculty and staff. Faculty and staff complimented the administrative leaders for their exceptional transparency.

Beneath the vice president/director level, the administrative structure is lean, but seemingly appropriate to the institutional mission, which is focused on research, graduate education, and outreach related to the research mission.

The lean administrative structure is made possible because the University of Maryland College Park (UMCP) and other units of the System provide many administrative functions. For the present, this seems to be a mutually beneficial and stable arrangement with MOU's in place for

many, if not all, of the shared services. However, access to applicant and student records was singled out as a deficiency in the shared services arrangements with UMCP.

The responsibilities and authority of each administrative office appear to be well understood. Faculty members report that administrative units function effectively. The faculty especially praised the competence and helpfulness of the Sponsored Programs unit. Staff report that resources (including personnel, IT infrastructure, and operating funds) are adequate for execution of their administrative functions.

In 2013 the Maryland Board of Regents granted UMCES permission to confer graduate research degrees jointly with other degree granting institutions in Maryland. To date, only the joint degrees with UMCP have been pursued and activated. The degrees are offered through the MEES program in which the UMCES faculty play a leadership role, thus exerting the requisite institutional control. UMCES also added a Vice President for Education in 2012, providing oversight for academic programs at the executive level. The functions of this office are still being defined.

The President reviews the vice presidents and directors (and their units) annually; similarly, lab directors review their faculty and staff annually. In many, if not all cases, reviews are based on written goals tied to the institutional mission and strategic plan. However, formal Continuous Quality Improvement processes are not in place.

UMCES appears to meet the MSCHE standard for **Administration** having demonstrated:

- A well-defined organization appropriate to the institutional mission,
- Well-qualified administrative leadership throughout the executive ranks,
- Effective administrative units with adequate staffing and decision-making systems to effectively execute their functions, and
- Periodic assessment of administrative effectiveness.

**Recommendations:** UMCES should adopt a formal Continuous Quality Improvement Program for administrative units with written assessment plans defining objectives related to institutional goals and metrics/outcomes for assessing effectiveness.

UMCES should fully define the responsibilities of the Vice President of Education.

UMCES should document progress towards strategic and other institutional goals and the use of such results in setting annual performance programs.

**Suggestions:** UMCES should work with UMCP to provide faculty advisors and appropriate staff with easier access to applicant and student data. Establish systems for graduate program record-keeping and data analysis.

## **Standard 6: Integrity**

***In the conduct of its programs and activities involving the public and the constituencies it serves, the institution demonstrates adherence to ethical standards and its own stated policies, providing support for academic and intellectual freedom.***

The team's judgement is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** As a unit of the University System of Maryland, UMCES follows a set of consolidated USM and UMCES policies and procedures for faculty, staff and students. These policies are widely available and are highly detailed. Because UMCES is a small unit in the USM, policies are approved by and are consistent with the policies of the much larger USM and are overseen by the Board of Regents. Local issues related to academic freedom, professional misconduct, grievances and other topics are frequently discussed by the faculty, by UMCES Administrative and Executive Councils and at annual Faculty Convocations. There are clear policies about fair treatment of graduate students including fair grading and sexual harassment. Information for students about graduate admissions and about programmatic requirements and statistics are generally available and are designed to ensure consistent treatment of students across the various units of the UMCES. Clear policies are in place regarding intellectual property rights, and for ethical behavior of human and animal subjects.

Students are offered a course on Responsible Conduct of Research in alternate years, but this is not required and the frequency is such that many students may not take it. In the planned curriculum modification, students are apparently to take this as late as their final semester which is late to emphasize the needs for habits of integrity.

UMCES appears to meet the MSCHE standard for **Integrity** having demonstrated:

- That it follows a widely available and highly detailed set of system-wide guidelines with internal checks and balances.

**Recommendations:** UMCES should undertake periodic assessment of integrity as evidenced in institutional policies and procedures and implementation of these should be made and documented. This assessment should include records of students, faculty and staff RCR training as well as documentation of any cases of purported academic dishonesty and how they were handled. In addition there should be discussion within UMCES about issues of perceived fairness and equal handling of policies between different units of the UMCES. Data should be exchanged between the MEES office and the VP for education to the greatest extent allowable by confidentiality rules.

The team concurs with the recommendation in the self-study that Staff Council should meet regularly and get more involved in shared governance of UMCES.

The team concurs with the recommendation of the self-study that the role of the VP for Education should be better defined and that adequate staffing to support data collection, assessment and actions based on assessment be provided.

**Suggestion:** All members of the UMCES community should be required to take an RCR course or refresher annually. This is a requirement of a number of federal agencies now so this suggestion supports both integrity and research efforts.

### **Standard 7: Institutional Assessment**

***The institution has developed and implemented an assessment process that evaluates its overall effectiveness in achieving its mission and goals and its compliance with accreditation standards.***

The team's judgment is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

#### **Summary of Key Evidence and Developments:**

At the institutional level UMCES has well-articulated goals in their Mission Statement and in their Strategic Plan. Goals identified in the Mission Statement derive from UMCES's legislative charter. Goals identified in the Strategic Plan are temporal and were derived from an inclusive strategic planning process.

Several metrics have been identified to measure effectiveness in meeting goals associated with the institutional mission. These are scored annually and reported to the System and legislature in the Managing for Results report. Achievement of strategic plan goals is to be assessed at the end of the strategic plan period. In the interim, the President reviews progress toward strategic goals with vice presidents and lab directors during annual performance and planning reviews. These discussions are undocumented.

Assessment of administrative unit effectiveness is conducted during annual performance reviews and in reviews at shorter intervals. However, these assessments are informal in the sense that written statements of unit objectives are absent; there are no unit assessment plans.

Faculty, staff and students reported satisfaction with the effectiveness of administrative units and with the directions that the institution was taking. Further, a number of examples of institutional investments to improve institutional effectiveness were evident. However, there is no evidence (in the Self Study or in the on-site interviews) of systematic data collection and analysis as a basis for institutional improvement. Assessment is largely *ad hoc* and undocumented, except where the System has specifically mandated outcomes assessment reporting.

UMCES appears to meet the MSCHE standard for **Institutional Assessment** having demonstrated:

- Metrics and processes that evaluate outcomes relative to institutional mission, and
- Annual performance reviews that address individual performance as it relates to the programmatic and institutional goals.

**Recommendation:** UMCES should establish formal Institutional Assessment processes in order to evaluate its overall effectiveness in achieving its mission. Faculty, staff and administration should work together to decide on clearly-articulated and purposeful goals consonant with the mission of UMCES. These goals should be developed at the UMCES-wide level, the unit level and the program level. They should be evaluated in a systematic and sustained manner using multiple qualitative and quantitative measures. A timetable should be presented and adhered to. The results and analysis should be shared and responded to by faculty, staff and administration. The plan and its effectiveness should be periodically reviewed and evaluated to ensure the institution's continued advancement in educating its students.

#### **Standard 8: Student Admissions and Retention**

***The institution seeks to admit students whose interests, goals, and abilities are congruent with its mission and seeks to retain them through the pursuit of the students' educational goals.***

The team's judgment is that, at this time, the institution appears to be compliant with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** UMCES partners with degree-granting institutions within USM (MEES, GPILS at UMB, BISI at UMCP, and programs at FSU) to offer graduate courses and research projects. Each of these institutions clearly state their admissions requirements on their websites.

UMCES is seeking accreditation to jointly award graduate degrees in marine and environmental sciences with UMCP through the MEES program.

UMCES currently does not have the administrative capacity to collect and maintain student information required by the standard. However, UMCES's Memorandum of Understanding with UMCP College of Computer, Mathematical, and Natural Sciences (December 2012) indicates that admissions to MEES will be granted but the UMCP Graduate School and degrees in MEES will continue to be conferred by the UMCP Graduate Dean. The Vice President for Education will certify to the Dean of the UMCP Graduate School any approvals required from UMCES for admissions to the joint program and completion of any joint degree requirements.

Student applications, registration and records of MEES applicants and student progress are maintained by the UMCP Graduate School and by the MEES office. Students are matriculated as UMCP graduate students responsible to UMCP for tuition and fees.

Students are eligible to join the UMCES Graduate program if an UMCES faculty member agrees to serve as an advisor or co-advisor. MEES provides access to faculty research interests and contact information on their website. Applicants are reviewed by MEES participating faculty, including UMCES faculty, from specific areas of specialization (AOS).

Availability of funding is a determining factor in the admissions process. Faculty rarely accept students as advisees unless there is grant money to support the position, or if students are willing and able to pay for the program. Matriculated students in UMCES receive equivalent levels of support, tuition and health benefits. A competitive Presidential scholarship, administered by the Vice President for Education office, is used to support top tier students.

The analysis of UMCES retention and graduate placements rates, provided by UMCP, indicate that students achieve high levels of retention, completion, and job placement.

UMCES has engaged outside consultants and has established a Communication office to help build brand awareness. Increased awareness in UMCES will assist potential students to help students to identify faculty as potential advisors and projects available for research.

UMCES appears to meet the MSCHE standard for **Student Admissions and Retention** having demonstrated:

- Strong partnerships within USM institutions for courses and research projects and with UMCP for a joint degree, and
- A long history of graduate student success that is coincident with the mission of the institution.

**Recommendations:** UMCES should define policies, procedures, and systems to collect and maintain student information required to manage student applications, registration, records, and student progress prior to offering any additional joint-degree partnerships with other institutions or stand-alone credential (certificate) programs.

UMCES should collect accurate data on applications, enrollment, and student progress and use those data to develop and effectively assess an enrollment management plan.

#### **Standard 9: Student Support Services**

***The institution provides student support services reasonably necessary to enable each student to achieve the institution's goals for students.***

The team's judgment is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with



contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** UMCES benefits from the comprehensive student support structures within the University System of Maryland. Support services are coordinated between the different UMCES laboratories, and grievance policies seem to be equitable.

Students have access to a student handbook, catalog, qualified professionals and other outreach materials that outline available resources. Joint-degree seeking students are matriculated into UMCP and therefore have access to support resources through the College Park campus. Because the students receive grant funding, they are considered to be employees and therefore they have access to employee benefits and healthcare. The Appalachian lab supplements UMCP support with resources provided through the FSU campus which is closer to their location.

Students in need of accommodations make use of the process defined within UMCP and there is evidence that these systems have met the students' needs. Support systems and networks for students from diverse communities have developed organically at different lab locations, but a systematic support structure at the lab locations does not exist.

Laboratory Directors are responsible for providing student support and for orienting new students to the institution. Student orientation is inclusive of safety, human resource policies and procedures, and other information to address a variety of student academic and employment needs. In some cases this orientation is facilitated by a returning graduate student. At some labs this orientation is a more informal introduction into the lab culture. Students rely on peers to navigate the system of support resources between the lab and the College Park campus. Each lab has a safety officer responsible for lab safety and Title IX reporting.

Students rely heavily on their advisors to guide them through the graduate process. Students indicate that relationships between faculty advisors and students are supportive and collaborative. Roles and responsibilities are understood and manageable. Advisors assist students with course selection, professional development and provide guidance for students to connect with sources for bridge funding and other support resources. If interpersonal concerns develop between faculty advisors and students, the students indicated that they are aware of who to contact to address these concerns and/or how to find an alternative advisor. The UMCP Graduate School via the MEES office provides students with progress support to completion and maintains published and implemented policies for the release of student information within FERPA guidelines.

Students actively participate in governance committees and are included in the decision making process for activities such as new hires. They indicate that their voices are valued in the process.

The college relies on an IVN distance learning communication tool for synchronous delivery of courses. Most material is recorded and made available for students through the institution's learning management system to accommodate different student needs.

Currently, UMCES does not systematically collect assessment data on student support services provided to UMCES students. The institution also does not systematically collect needs assessment data from the student population to identify the need for student services. The institution also does not house records of student complaints or grievances.

UMCES appears to meet the MSCHE standard for **Student Support Services** having demonstrated:

- Access to comprehensive student support services within USM.

**Recommendations:** UMCES should identify and track effectiveness of UMCES student needs for support services.

UMCES should develop a standard assessment cycle, which includes evaluation of current policies and services, methods for collecting and analyzing student data, and a process to use these data for decision making.

**Suggestions:** UMCES should consider developing a more intentional support structure for diverse students, especially international students and students with special needs.

UMCES should consider consolidating relevant policies, procedures, and services into a comprehensive UMCES student handbook that can be used to facilitate a more consistent student orientation process.

#### **Standard 10: Faculty**

***The institution's instructional, research, and service programs are devised, developed, monitored, and supported by qualified professionals.***

The team's judgment is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** UMCES has a distinguished faculty, consisting of both tenured and tenure track faculty and research faculty whose expertise covers the research areas identified in the strategic plan "Focus on the Future". Faculty are generally well-funded and actively involved in research, integration, education and service. A high proportion of the UMCES faculty has received state, national and international recognition including 11 Regents Awards from the state of Maryland. Since the program trains graduate students only, the

faculty are, appropriately, scientists with active research programs and active publication records. All faculty are reviewed annually for contributions to research, integration, service, and teaching and student advisement with comprehensive reviews of tenured faculty every 5 years. These reviews also include Directors, Vice Presidents and the President. Much of the classroom teaching is done by tenured faculty to allow junior faculty time to establish research programs, although more junior faculty are also very actively involved in curricular offerings. An annual Faculty Convocation is an opportunity for faculty to reflect and evaluate policies and progress toward institutional goals. Evaluation of faculty teaching is largely done through student course evaluations.

There have been a number of faculty hires to replace those who have recently retired. Currently women make up 31% of the UMCES faculty. By comparison, women are 58% of the UMCES staff and 65% of the UMCES student body. Representation of women in the faculty group is increasing but efforts so far have not been successful in widely improving faculty diversity. Ethnic diversity among the faculty remains a challenge.

As a geographically separated program, the UMCES has made extensive use of video conferencing technology for its courses, and enrollment includes students from the 4 UMCES labs as well as students at other USM campuses. Outreach programs within Maryland, as well as participation in national and international service, is recognized and supported by UMCES resources. Involvement in K-12 education and public science is supported by specialized faculty and staff at each laboratory to assist in science communication.

Curricula and program goals are developed by the Graduate Faculty and are currently being reviewed by Program and Curriculum Committee of the College of Computer, Mathematics and Natural Sciences at UMCP. A major curriculum revision is being considered by the appropriate UMCP curriculum committee and is under review by the Associate Provost at UMCP.

UMCES appears to meet the MSCHE standard for **Faculty** having demonstrated:

- A faculty distinguished according to independent metrics of excellence, and
- Curricula developed by a graduate faculty and reviewed collaboratively by partners at UMCP.

**Recommendations:** UMCES should clearly articulate standards for teaching performance and for mentorship of students by faculty and be consistent across labs, and faculty should be evaluated based on those standards.

UMCES should work in collaboration with other institutions participating in the MEES Program explicitly to include assessment of achievement in those areas in reviews of individuals responsible for educational components. Standards should be set for different levels of involvement (faculty mentor, instructor, members of MEES program committee (including the current Program Director), VP for education)).

**Suggestions:** UMCES should be sure that opportunities for faculty development in terms of education as well as research are widely available. We concur with the self-study recommendations for additional training and advice on improving strategies for distance learning.

Mentorship of young faculty should be strengthened and made consistent across labs. This should include peer evaluation of teaching for faculty and mentoring of associate professors to achieve full professor status.

### **Standard 11: Educational Offerings**

***The institution's educational offerings display academic content, rigor, and coherence that are appropriate to its education mission. The institution identifies student learning goals and objectives, including knowledge and skills, for its educational offerings.***

The team's judgment is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** Academic content and rigor are in accordance with the institution's mission to *"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."* In reflecting the mission in its graduate curricula and syllabi, the academic content and presentation are very closely linked to the institutional goals as reflected in the strategic plan and goals as they are embodied in the delineated four strategic directions as they are embedded in the MEES graduate program in environmental and marine sciences.

The formal education programs at UMCES are primarily associated with graduate MS and PhD degrees. As such, education consists of preparation of a thesis or dissertation as well as some formal course work. Mentoring for graduate research is a strength of this program with excellent preparation for a career as a research scientist.

Research is well-integrated with coursework and both MS and PhD students are required to take formal courses that cover skills, specialized courses, interdisciplinary courses and applications of material to real world problems. Courses being offered cover an appropriate range of subjects and are offered in a timely manner. Each student has an advisory committee that oversees satisfactory progress of the student toward achievement of program outcomes.

The evaluation process has been relatively informal but recently a more systematic format permitting regular and more quantitative assessment has been added.

The self-study document takes a critical stance in evaluating UMCES's own strengths and weaknesses, and the institution should be commended for this.

UMCES appears to meet the MSCHE standard for **Educational Offerings** having demonstrated:

- Evidence for strong academic content and rigor,
- Research that is well-integrated with coursework, and
- An established, albeit informal, evaluative process.

**Recommendations:** The team concurs with the self-study's own recommendations as stated.

UMCES should articulate, measure and use learning outcomes for program improvement. These learning outcomes should fit organically within an integrated structure of *strategic, institutional, programmatic* and *course-level* learning outcomes that flow from and support the institutional mission.

**Suggestions:** UMCES should accelerate the proposed 5-year horizon for standardizing and evaluating learning outcomes given the importance of sound curriculum/syllabus/course development and evaluation, together with increasing emphasis on learning outcomes and learning objectives on all levels. Similarly, having identified the necessity of developing sound and educationally justifiable decision-making structures, based on lessons learned from the revision of the MEES curriculum, an aggressive timeline for these and related issues should be worked out with all stakeholders.

### **Standard 13: Related Educational Activities**

***The institution's programs or activities that are characterized by particular content, focus, location, mode of delivery, or sponsorship meet appropriate standards.***

The team's judgment is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** Acting in accordance with both the institutional mission and the strategic plan, UMCES offers multiple educational experiences across a broad spectrum to all its students, extending some of these opportunities to a pre-college audience.

There are linkages for feedback and input to a wider public that includes all stakeholders. The broader implications of graduate research are thus made available and communicated to all who have an interest in, and can benefit from, such research.

Educational opportunities and activities offered as distance learning offerings meet the same exacting and rigorous standards as in-person teaching and learning offerings.

The REEF Program is an example of how entrepreneurship and scientific research can be integrated to further the interests of graduate students in their quest to pursue a career, while influencing public policy and offering company's access to UMCES developed technology through licensing.

UMCES has been found to be in compliance with the 9 guidelines proposed in *Inter-regional Guidelines for the Evaluation of Distance (Online Learning.)* There is, specifically, a low-level system in place for authenticating students in distance learning courses and programs

UMCES appears to meet the MSCHE standard for **Related Educational Activities** having demonstrated:

- Multiple educational experiences for its students that extend, per its mission, to external stakeholders, and
- Multiple approaches for disseminating information to interested and otherwise relevant parties.

**Recommendations:** The team has no recommendations at this time.

**Suggestions:** UMCES should continue to foster these relationships and to actively seek even wider opportunities for connecting with an audience outside. Currently, UMCES has in place a robust menu of credit and noncredit offerings that are available to its students, and also to interested stakeholders external to the institution, and those in a pre-college environment. The value of such enterprises for the students, UMCES itself and society at large cannot be overstated.

#### **Standard 14: Assessment of Student Learning**

***Assessment of student learning demonstrates that, at graduation, or other appropriate points, the institution's students have knowledge, skills, and competencies consistent with institutional and appropriate higher education goals.***

The team's judgment is that, at this time, the institution appears to be in compliance with this standard. This judgement is based on reading of the Self Study and conversations with contributors to that study, along with students, faculty and staff, as well as documents referenced in the Self Study.

**Summary of Key Evidence and Developments:** At the present time UMCES is authorized to issue degrees only as a partner with UMCP in the graduate MEES program. In the MEES program a customized curriculum is designed for each student based on a unique set of objectives defined by the student and his/her graduate committee. Student learning outcomes are assessed by faculty graduate committees through individualized comprehensive exams and thesis/dissertation defenses.

While such practice is commonplace in graduate research degree programs, and may serve to assure some level of educational quality, it fails in many respects to meet student learning outcomes assessment best practices and Middle States expectations. Learning objectives (expressed as outcomes) have not been articulated (in documentable fashion), programmatically or for individual students, nor has student performance in any specific objectives been reported. The MEES faculty, as a group, has not been provided with student performance data and has not undertaken assessment of student learning outcomes in the program as a whole. There is no plan to do so.

The MEES faculty has recently undertaken a major program review that has resulted in a proposal for significant curricular change. We observe, however, that the proposed curricular change was driven by the perceived need to change program objectives and to assure course availability rather than analysis of effectiveness in achieving outcomes for the existing program. We further observe that the new curriculum proposal does not articulate student learning outcomes even though the presence of required courses and tasks suggests that the faculty has some in mind. MEES faculty should take this opportunity to define their expectations for student learning in terms of measurable outcomes, and develop a sustainable plan for collecting, analyzing, and reacting to student performance data.

Examples of student learning outcomes assessment in individual courses were presented. However, learning outcomes have not been articulated for all MEES courses. At the present time, instructors are “encouraged” to include learning objectives/outcomes on their course syllabi, but are not required to do so. Without articulated student learning outcomes it is not possible to undertake or document meaningful student learning outcomes assessment.

UMCES appears to meet the MSCHE standard for **Assessment of Student Learning** having demonstrated:

- A baseline of outcomes as assessed by faculty graduate committees, individualized comprehensive exams, and theses/dissertations.

**Recommendations:** UMCES, in collaboration UMCP and other MEES partners, should develop clearly articulated statements of expected student outcomes for both their master’s and Ph.D. programs. The faculty and administration should work to create a systematic, sustained process using multiple measures to inform decisions about ways to continue to improve student learning. A timetable should be established. Outcomes assessment should be faculty driven. Faculty are most qualified in knowing what their students should learn. Faculty should collaborate to link UMCES’s mission with programmatic goals, then measure the level of success in achieving those goals using reliable and valid data. Evaluation of those data and decisions for allocation of resources should be shared and discussed with all constituents of the campus and be a regular part of the activities of UMCES.

## VI. Summary of Compliance

Based on a review of the institution's self-study and appendices, interviews, and other documents reviewed during the visit, the team draws the following conclusion.

UMCES meets the baseline expectations of Middle States for compliance and therefore for accreditation to offer a joint degree (MEES) with UMCP. The institution is imbued with a culture of excellence as it relates to the mission and students feel supported.

The strong desire among UMCES administration, faculty, staff and students to share in the ownership of the MEES program and enable the option to offer other degrees and certificates does mean that they will need to address many recommendations in order to meet responsibilities engendered in full spectrum of applicable Middle States Standards. UMCES has made progress in understanding and embracing its responsibility, but there is more that needs to be done alone and in collaboration with MEES partners.

At this time UMCES relies heavily on its partner institution for many of the compliance requirements. And while the efficiencies gained by that are to be lauded it is clear that as UMCES evolves toward certificate programs and other potential degree programs there will need for purposeful consideration to be given to the infrastructure that is needed within UMCES to effectively serve the student population. Centralizing platforms that contain student information across the UMCES campuses will help.

Documented outcomes assessment and formalized institutional planning (financial, academic, facilities) are also essential to the successful evolution of UMCES as it looks to maintain and expand its degree program and move into other kinds of educational programs (e.g. certificate programs, professional training programs). Learning outcomes should be articulated for all programs. These learning outcomes should fit organically within an integrated structure of *strategic, institutional, programmatic* and *course-level* learning outcomes that flow from and support the institutional mission.