

**Department of Emergency Health Services
College of Arts, Humanities, and Social Sciences
University of Maryland, Baltimore County**

**Academic Program Review Self-Study
2010-2017**

**Prepared by
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EXECUTIVE SUMMARY

The Department of Emergency Health Services (EHS) is an academic department within the College of Arts, Humanities, and Social Sciences (CAHSS). The EHS program was formed at UMBC by one of the early visionaries in EMS, Dr. R Adams Cowley of University Hospital, University of Maryland, and many of our alumni excel in strong state and national leadership roles in EMS, public health and disaster.

Mission and Relationship to UMBC

The EHS Department strives to combine teaching, research, and service within a dynamic framework of educational excellence and scholarly leadership. It is the vision of the department to be "the international leader in emergency health services' education". This is accomplished through the "*integration of research, teaching and learning and civic engagement.*" Research by the department's faculty addresses issues in disaster medicine, emergency public health, mobile integrated health, and clinical simulation.

Organization and Specialties

The EHS Department offers a ***Bachelor's of Science in Emergency Health*** in either a Management Track or a Paramedic Track. The Management Track is designed to meet the needs of students who plan to focus their career on the development and management of emergency health care systems at the local, state, and federal levels. Paramedic Track also enrollees complete a vigorous regimen of science. The ***Emergency Management Post-Baccalaureate Certificate*** is a 5-course stand-alone option.

The graduate program in EHS offers a ***Master's of Science in Emergency Health Services*** with three tracks: *Administration, Planning and Policy; Preventive Medicine and Epidemiology; and Education.* An *Emergency Management* concentration can be merged with any of the existing tracks or can be taken alone as a post-graduate certificate program.

The ***Emergency Services Concentration within the Public Policy, PhD*** has two pathways: health and management. The ***emergency health*** pathway includes courses in disaster health, catastrophes, and systems design. The ***emergency management*** pathway includes courses in disaster mitigation, catastrophe preparation and response, and strategic planning.

The department also administers a ***Professional and Continuing Education (PACE) program*** for prehospital and hospital allied health providers with the intent of providing additional funds to for education and research. The program provides nationally recognized curricula such as Critical Care Paramedic (CCEMT-P) and Paramedic Refresher.

Educational Goals, Learning Outcomes, and Program Assessment Plan

The EHS Department regularly **assesses the learning outcomes** of its majors and alumni through the CAHSS Student Assessment Plan in addition to supplementary techniques. The assessment of the Undergraduate Paramedic Track is through the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). Applied skills and knowledge assessment of the Management Track occurs through the internship and the Senior Capstone Project. Students in the Graduate Master's Program complete either a

comprehensive examination, thesis, or capstone project as their final assessment. Assessment of doctoral students in the Graduate Program will be completed through a Field Examination and a Doctoral Dissertation Defense.

The ***Program Assessment*** in the APR Self Study describes how the department and program Student Learning Objectives align strategically with UMBC's Functional Competencies. The ***Educational Goals and Learning Outcomes*** are reflected within the EHS Department's Student Learning Objectives and include the ability to apply competency within the major, demonstrate oral and written communications, and be prepared for graduate and professional degree programs. Assessment of the ***graduate program's*** educational goals and learning outcomes has found that students are meeting their applied competency skills well through internships and GRA positions. The EHS Department carries three courses with ***General Education Designation*** including EHS 200 Concepts of Emergency Health Services, EHS 311 Stress and Burnout: Personal and Professional Issues, and EHS 345 Death and Dying, which all meet the competency requirement for information literacy for a General Education Course Competency in the Social Science category.

Curriculum and State of the Art

The undergraduate Management Track Curriculum includes courses in EMS history, EMT-Basic, EMS systems planning, management, stress, disaster, and a senior internship. Many students also choose a minor in Public Administration. The graduate program, available online and on-campus, has three curricula for the Administration, Planning and Policy Track, the Epidemiology and Preventive Medicine Track, and the Education Track. The Epidemiology and Preventive Medicine Track and the Education Track are offered jointly with the UM's School of Medicine and the UMBC Department of Education. Doctoral students take a combination of EHS graduate health or management classes and School of Public Policy classes.

Faculty Profile

Our department is currently in a marked state of change. We have a new chair, and the majority of our very small faculty are retiring in the next five years. In the past two years, the department has also taken on the responsibility of funding a portion or entirety of two faculty members' salaries. The department expects a potential for two tenure track retirements, two non-tenured retirements and one non-tenured track transition in the next five years. This constitutes almost the entirety of our faculty with the exception of one lecturer and the current Chair.

Faculty Research and Scholarly Activity

All EHS faculty members, tenured and non-tenured have an active research and publication agenda. This research is almost all multi-disciplinary in content, containing material, concepts, paradigms, and methods from medicine, public health, mental health, sociology, economics, policy sciences, emergency management, organizational planning and management, and history. Recent projects have been funded by the Maryland Department of Health and Human Services and the Centers for Disease Control and Prevention.

Emergency Health Services Research Areas of Excellence

After thorough review of the current major themes in EMS and Emergency Public Health education, the department has identified three current areas of excellence that correspond to

current faculty interest and skills. These include Mobile Integrated Health, Clinical Simulation and Education, and Emergency Public Health and Disasters.

Infrastructure Planning

The department is currently in need of increased administrative and faculty resources to support the new joint PhD program and research initiatives in disaster health and mobile integrated health. A multi-year growth initiative has begun with the planning of the new Clinical Simulation Laboratory for *innovative pedagogy* in health research. After completion of construction of the proposed space (in the Sherman Hall 2nd floor), the department plans to construct a modern healthcare simulation space. Currently the department has two pending joint research grants in simulation from the National Science Foundation with the UMBC Department of Information Systems. This work is *both multi-disciplinary and spans two colleges in scope and practice*.

Teaching Quality and Faculty Mentoring

It is the priority of all faculty and a mission of the department of EHS to provide excellence and innovation in EMS and emergency public health education. Our faculty are known for their dedication to students, teaching, and advising. Balancing faculty time with demands on teaching, research, grant application, and administration is a challenge given the current 3+2 course load for tenure track faculty. Total credit hours generated in FY12 were 2832 compared to last year FY16 of 2970. We would like to note that the majority of our faculty are teaching in overload despite the increased level of utilization of adjunct faculty for teaching.

Service

Service to the department, university and community is a hallmark of EHS. All faculty members participate in committee assignments at the department and University level. A majority of faculty in the department continue to serve the medical community in either a volunteer or paid capacity. Of our faculty members, four are licensed paramedics and another is an aviation/flight paramedic. Two faculty are mental health professionals who provide volunteer service on Critical Incident Stress Management Teams. Dr. Jenkins is an Emergency Physician and supervises our own paramedic students in clinicals.

Student Profile

Enrollment in the undergraduate EHS program has ranged from 92 (2013) to 112 (2011) with a five year average of 101 students. Part-time undergraduates continue to constitute approximately 10% of students over the past five years. These are most often Management Track students who are more likely to work full-time while attending school. Undergraduates also tend to be in-state students (66%), male (70%), and white (65%). Enrollment in the Graduate Program has been consistent over the past five years at approximately 30 students.

Student Advising

Undergraduate advisement is conducted by Dwight Polk for the paramedic track students and Diane Flint for the management track students. Mr. Polk and Ms. Flint make themselves available for extended office hours for three weeks as soon as the registration system is made available for class registrations. Therefore, there is advisement conducted in the fall and spring

semesters. The graduate program of the Department of Emergency Health Services has only two faculty whose primary responsibility is to graduate students (Bissell and Jenkins).

Financial Support for Graduate Students

The Graduate School supports one graduate research assistant (GRA) per year for our department. During most of the last seven years, the department has been able to support between three and five students per year with outside faculty research or project funding. Successful support of graduate students has been mostly found in the fields of emergency public health, disaster health and policy. Improved GRA funding will be necessary for the success of the Emergency Services Public Policy PhD program.

Student Research

Faculty routinely serve as mentors for one or two independent study students each semester and actively participate in the senior capstone project. EHS 430 Research Methods is also required coursework for all EHS undergraduate students. Currently Dr. Jenkins is also serving as mentor for two students who have just submitted their work for Undergraduate Research and Creativity Day. Faculty also involve graduate students in their research whenever possible.

Facilities

Currently laboratory space for the department is limited. The department is hopeful for the passage of its pending space request to acquire additional room in Sherman Hall, Floor 2-A Wing. This space achieves multiple educational and research goals as it would allow for the construction of a clinical simulation laboratory that has been deemed of marked importance by paramedic accreditation bodies. Office space for part-time and adjunct faculty, GRAs, RAs, and TAs is currently very limited. Medical teaching equipment and supplies are also aging and in need of replacement.

Climate

We are in the process of rebuilding and creating an interactive and interdependent working climate as we move into the third cohort of faculty and staff members, counting from the initiation of the EHS department in 1980. Currently, we have a new chair as of this year and the **majority of our very small faculty are retiring in the next five years**. Students and faculty in our department, *all see themselves as being part of an organized group of people, to be found around the globe, who strive to make life better for others*.

Profile of Graduates

The number of EHS undergraduate majors has sustained large fluctuations ranging from 6 in AY2014 to 35 in AY2013. Management Track graduations also met a low in 2013 and recently stabilized around 6 students. Nearly 73% of *management alumni* are working in an emergency health or management related field. The largest cohort of graduate alumni have found positions in academia followed by positions in emergency management.

Budget

Currently the department and the PACE program are operating in deficit. ***Our department's current annual operating deficit has run approximately 30-40k for the past 15 years***, which has in the past been offset by PACE. The department has undertaken an extensive budgetary

review to determine both the etiology of the deficit and the feasibility of earning increased profits from PACE to offset this deficit. The sources of this continue annual budget deficit include:

- the expense of running the paramedic clinical program
- increased adjunct expense
- department self-funding for a portion of two faculty members

After the *PACE budget analysis of the past five years*, it has been determined that the PACE deficit is likely the result of two large one-time expenses, research infrastructure (CEEDR), increased departmental faculty cost covered by PACE, and a paramedic cardiac monitor. The PACE personnel, expenses, and revenue have stayed largely consistent over the past five years.

Evaluation of Strengths and Opportunities

- Highly experienced faculty with field and clinical expertise and ongoing publications
- Involvement with EMS organizations at local, state, national and international levels
- Strong faculty, student and alumni network
- New Emergency Services Concentration in Public Policy PhD
- Opportunities for improved financial support from PACE
- Recruitment of community college transfers for the undergraduate management track
- Restructuring of Paramedic curriculum to accommodate pre-professional requirements
- Recognized call for online undergraduate Management Track in market analysis

Evaluation of Weaknesses and Threats

- Operating budget shortfall due to cost of Paramedic Track and faculty salary support
- Currently simulation and clinical skills labs share a space which is too small for both
- Insufficient faculty for the new Public Policy, Emergency Services PhD program
- Senior, tenured faculty will retire in less than 1-4 years
- Difficulty completing pre-professional requirements within four years
- Low enrollment numbers in the Management Track
- Need for new, innovative products and programs for the PACE Program
- No online payment system or educational delivery system in PACE

Future Directions

It is goal of EHS to produce national and world leaders in EMS and emergency public health. The *two major challenges for our department are the ongoing budget shortfall due to paramedic track expenditures and faculty salary support, and the faculty transitions or retirements of the majority of our department*. The department has developed these action items in conjunction with the goals of our mission and vision to serve our students, our university and the community in emergency health. Our major action items include ensuring financial stability of the Paramedic Track and improving PACE programming to offset the annual operating budget shortfall. Ensuring maintenance of current faculty staffing for undergraduate and graduate programs will require enacting our hiring plan for the next five years to manage retirements of the majority of our faculty. Our department will require the addition of at least two to three senior and at least one or two junior tenure track faculty during this time. Increasing undergraduate management track enrollment will be targeted through advertisements and community college agreements.

ACADEMIC PROGRAM REVIEW SELF STUDY

Note to Readers: The department has two undergraduate tracks, one of which concentrates on Emergency Health Services (EHS) Management and the other, which is a nationally accredited clinical program in EHS Paramedicine. Because the Paramedic track is currently being reviewed for re-accreditation in AY16-17, it is not specifically reviewed in this self-study.

However, because this track is integral to the department, it cannot be totally removed from the overall review of the department; therefore, reference to this track appears throughout this document.

DESCRIPTION OF THE PROGRAM

The Department of EHS is an academic department within the College of Arts, Humanities, and Social Sciences (CAHSS). The department provides undergraduate education resulting in the Bachelor of Science degree and graduate education at the Master of Science and Doctor of Philosophy level (in conjunction with the UMBC Department of Public Policy). Today the department's academic focus is in EHS curriculum in the clinical, management and emergency public health arenas.

The discipline of EHS, and the more common term, emergency medical services (EMS), is a young and dynamic field of health care. Although the provision of transportation for the sick and injured can be found in antiquity, the modern era of EHS dates back to the latter part of the 1960s. It was at this time that death and disability from automobile crashes and coronary disease were recognized as a public health concern. The involvement of the federal government gave direction and funding to the development of a systems approach to EMS. This led to the development of regional EMS systems nationwide and the acceptance of EMS as a valued and necessary community service.

HISTORY OF THE PROGRAM

It was within a framework of developing regional and statewide EMS systems that the EHS Program, and later the Department of EHS was formed at UMBC. One of the early visionaries in EMS, Dr. R Adams Cowley of University Hospital, University of Maryland, and director of the Clinical Shock Trauma Unit, envisioned the need for an "EMS school." The purpose of this school was to develop leaders for newly formed EMS systems. Dr. Cowley wisely reasoned that the development of effective EMS systems would require not only medical personnel, but trained, professional managers and administrators.

It is apparent that the continued development of EHS as a discipline is contingent on the support and development of adequately funded academic research. In addition, professionals entering the field need to have a well-rounded education to prepare them to address the clinical,

administrative, policy, educational, and research dimensions of the dynamic health care field of EHS. Fortunately, Dr. Cowley and the Department of Emergency Health Services' first chair, Dr. Dorothy Gordon, had the foresight to take a broad perspective in developing the program. By adopting the perspective of EMS being more than just prehospital care, they formed the concept of emergency health services. This total approach to patient care extends from pre-event to post-event rehabilitation. Although they did not realize it at the time, this approach foreshadowed the recognition of EMS as a public health initiative.

The organization of undergraduate education offerings by the Department of EHS follows closely the historical development of the EHS discipline. Overall, the undergraduate program prepares graduates to assume leadership positions in a variety of EHS and related fields. The graduate program prepares students to work at higher levels of leadership and in a broader context including the fields of public health and emergency management. All graduate students learn both the principles and practice of research, which addresses a chronic weakness in EHS. Many of our graduate alumni excel in strong state and national leadership roles in EMS, public health and disaster management such as the Federal Emergency Management Agency, Department of State and in the office of the Assistant Secretary for Preparedness and Response. Our department also has a strong history in preparing students for pre-professional school and counts numerous nationally and internationally known alumni physicians specializing in EMS and disaster medicine.

The discipline of EHS is a dynamic and changing field influenced by both clinical and economic factors. Much of what occurs in EHS had traditionally been anecdotal and not based on sound science. Lack of funded research has stymied the development of a theoretical basis for the effective and efficacious delivery of EMS services. However, the efforts of programs such as the Department of EHS have contributed research and more importantly, an educated cadre of EHS professionals who are establishing themselves in leadership positions within the field. Because the department has been able to remain dynamic and opportunistic, it has been able to meet the changes and challenges of a developing discipline while maintaining its core educational mission and values.

MISSION

The mission statement of the University of Maryland, Baltimore County attests to the university's ambition to "*be one of the finest of the new American research universities that effectively blend high-quality teaching, advanced research, and social responsibility.*" In like fashion, the Department of EHS strives to effectively combine teaching, research, and service within a dynamic framework of educational excellence and scholarly leadership. It is the vision of the department to be "the international leader in emergency health services' education. This vision will be obtained through excellence in education, research, and service." The department's mission statement, like that of the university's, addresses issues of scholarly activity, excellence, service, and human ideals.

The Department of Emergency Health Services, as an integral part of the University of Maryland, Baltimore County, provides leadership in the field of emergency health services through excellence in education. This educational excellence is supported by an

active research agenda, service to the university and EMS communities, and provision of professional continuing education. We recognize as our constituencies the university and the Maryland, national, and international EMS communities. Our activities, carried out in concert with the ideals of the University System of Maryland, are guided by the values of human dignity and diversity of those served by EMS and in an organizational culture based on equality, collegiality, and the pursuit of personal and professional excellence for students, faculty, staff, and external constituencies.

As a department whose undergraduate program is devoted to the development of entry-level professionals and the development of offerings in an emerging discipline, the department places great emphasis on social responsibility and human services with a special emphasis on the public policy implications of such responsibility within the contemporary discipline of emergency health services (EHS). This is accomplished through the "*integration of research, teaching and learning and civic engagement.*" As a fundamental public service, EHS, like UMBC, strives to "*actively connect its intellectual and research capacity to significant social, economic, and technological challenges in a search for understanding, applications, and solutions.*" Research projects by the department's faculty address issues of expanded scope of practice, educational curricula, online education, post-disaster medical care, critical incident stress, geriatric issues, abuse, and EMS worker injury and death. In the last 20 years, the EHS graduate program has also offered class-leading courses in the field of emergency management, accompanied by substantial contributions to the emergency management and combined emergency management/emergency public health fields. Seminar and class discussions challenge students to move beyond the limited perspective of EHS as the prehospital response to medical and trauma incidents to the view of EHS as a public health initiative. Working with the Maryland Institute for Emergency Medical Services Systems (MIEMSS), the state lead agency for EMS, EHS faculty and students have linked research priorities *to the economic and social needs of the region and state.*

RELATIONSHIP TO UMBC MISSION

The implementation of national educational standards for EMS professionals exposes students to a different aspect of EHS with a strong humanistic and cross-cultural perspective. This is consistent with UMBC's mission statement: "*UMBC will continue to strengthen and support programs and activities that promote cross-cultural understanding and global perspectives.*" This dedication is evidenced in multiple international research projects with data collection currently occurring in South Africa, Saudi Arabia, London and Puerto Rico in the arena of emergency public health.

Because the undergraduate curriculum is designed to produce entry level supervisors and paramedics for emergency services organizations, the program further supports UMBC's mission: "*UMBC will continue to contribute to Maryland's economic future through academic programs, workforce training, and applied research in ...health care...public policy, education...*"

Faculty and students work closely with other educational, governmental, and industrial organizations in Maryland and the region. Several department faculty have joint appointments at other USM campuses. Students are regularly placed in internships with MIEMSS, FEMA, local municipal fire departments, Maryland State Police, and Maryland Emergency Management Agency. Again, from the UMBC Mission Statement: "*UMBC cooperates with other educational segments in Maryland and collaborates with other USM institutions to provide access for citizens to high-quality educational services and to meet the educational, economic, and cultural needs of Maryland.*"

UMBC places emphasis on the role of faculty in the delivery and integration of teaching, research, and service. Department faculty actively pursue a similar role. Faculty serve on local, state, regional, national, and international committees and boards. Faculty have served in leadership roles in national professional associations including president and board member. Faculty serve on editorial boards of major publications in the field and routinely present at national and international meetings. This high level of involvement allows faculty to "*apply their knowledge and scholarship in advancing institutional partnerships with government, non-profit organizations, and industry*" and "*UMBC faculty seek to integrate research, teaching and learning, and civic engagement so that each advances the other for the benefit of the State and society.*"

In addition, continued excellence and growth within the department is integral to the continued accomplishment of UMBC's institutional mission. Through shared ideals and goals, the department and university have the potential to grow together to "*effectively blend high-quality teaching, advanced research, and social responsibility*" so that UMBC can truly become "*the finest of the new American research universities.*"

[*Italic denotes direct quote from UMBC Mission Statement.*]

ORGANIZATION AND SPECIALIZATIONS

The EHS Department has two *undergraduate tracks*, each representing a "specialization." They are: 1) the Management Track, and 2) the Paramedic Track.

The Management Track is designed to meet the needs of students who plan to focus their career on the development and management of emergency health care systems. This can range from playing a supervisory or directive role in a local private or public EMS organization, to working as state or national level EMS system directors. The "EMS Workforce for the 21st Century: A National Assessment" (2008) concluded that the issue of poor management practices and lack of career ladders has a significant negative impact on EMS recruitment and retention. The UMBC EHS undergraduate and graduate EHS management programs are one of the few academic programs in the nation designed to contribute to the professionalization of EMS management practices. Many of our graduates serve in important leadership roles. For example, several alumni work as state EMS directors, and others work within the federal government on EMS governance and reimbursement issues. Several alumni are also now using the skills from this track in international assignments.

Graduates of the Paramedic Track are highly educated prehospital medical professionals who have extensive science and medical backgrounds. Students must complete a vigorous regimen of science (chemistry, biology, anatomy, and physiology) prior to entering the paramedic program. Paramedic students enter this track in the junior year following a competitive selection process, which includes transcript evaluation, personal statement, recommendations, and two interviews. Additionally, Paramedic Track students graduate with the basic skills needed to plan, manage, and evaluate emergency health services including system design, personnel management, EMS finance and reimbursement, resource deployment strategies, fleet management, proposal writing, policy analysis, and research methods. Students who select this track are typically clinicians who envision themselves in a management or educational role at some point in their career.

The *graduate program in EHS* offers a Master of Science with three tracks and an overlapping concentration. The tracks are *Administration, Planning and Policy; Preventive Medicine and Epidemiology;* and *Education*. In addition, there is a concentration on *Emergency Management*, which can be merged with any of the existing tracks, or can be taken alone as a post-graduate certificate program. We intend to propose elevating this emergency management concentration to a full track status in the next couple of years.

Each program option is centered on a common core of coursework offered through the Emergency Health Services Department; the options then diverge into the described specialty. In special cases, option requirements are combined to meet an individual's need for such program design. Students must take a minimum of 30 credit hours of course and seminar work. Students in the preventive medicine track must complete a satisfactory research project either in seminar work or, in a more formal manner, through the thesis option. Non-thesis students must complete written comprehensive exams or a capstone project. With continuous full-time enrollment each semester, students may expect to complete the degree in about two years, depending upon the option chosen and course availability. A three-year time frame will be typical for many distance-education students.

The *Emergency Management Post-Baccalaureate Certificate*, mentioned above, provides a 5-course (minimum) option for those interested in the growing profession of emergency management. This certificate can be obtained as a stand-alone option, or as part of the MS degree. Under the guidance of the program advisors, combinations of these tracks may be possible. The EHS emergency management course offerings are unique among US graduate programs in the emergency management arena, in that we bring a strong dose of public health principles and methods into the emergency management realm. It is only in multi-speciality collaboration that the full needs of a population in emergency can hope to have an effective collaborative response.

The *Emergency Services Concentration within the Public Policy, PhD* is targeted towards the professional specializing in public health, disaster care, and emergency management. There are two pathways: health, and emergency management. The *emergency health* pathway includes courses in disaster health, catastrophes, and systems design. The *emergency management* pathway includes courses in disaster mitigation, catastrophe preparation and response, and strategic planning. Rick Bissell is the track advisor.

ADMINISTRATIVE STRUCTURE AND OPERATIVE COMMITTEES

The EHS Department operates under the leadership of a Chair, Graduate Program Director and two Undergraduate Track Directors. We have one Administrative Assistant in our program. Key personnel are listed here for reference. Please refer to the *Appendix A* for graphical representation of administration structure.

Department Chair - J Lee Jenkins, MD, MS, FACEP
 Graduate Program Director - Richard Bissell, PhD, MS, MA
 Undergraduate Management Track Director - Diane Flint, MS, PhD(c)
 Undergraduate Paramedic Track Director - Dwight Polk, MSW

The EHS department has three main committees, which align with the above administrative structure. Given the small size of the department, the committees often consist of the track or program director, department chair and one other faculty member.

Graduate Program
Management Track
Paramedic Track

DEGREES OFFERED

List of Degrees Offered	First Year Offered
<i>Bachelor of Science in Emergency Health Services</i>	<i>1980</i>
Management Track	
Paramedic Track	
<i>Master of Science in Emergency Health Services</i>	<i>1981</i>
(Classes offered online and on-campus)	
Administration, Planning and Policy Track	
Preventive Medicine and Epidemiology Track	
Education Track	
<i>Doctor of Philosophy</i>	<i>2017*</i>
Public Policy, Emergency Services Concentration	

* New approved degree in cooperation with Department of Public Policy available FALL 2017

List of Non-Degree Programs Offered	First Year Offered
<i>Continuing Education</i>	<i>Early 1980s</i>
Clinical and Non-Clinical Courses	
<i>Emergency Management</i>	<i>2007</i>
<i>Post-Baccalaureate Certificate</i>	

EDUCATIONAL GOALS, LEARNING OUTCOMES, AND PROGRAM ASSESSMENT PLAN

The EHS Department regularly assesses the learning outcomes of its majors who participate in departmental courses and afterward as undergraduate and graduate alumni. To fulfill this goal, the department utilizes the assessment planning model provided in the CAHSS Student Assessment Plan in addition to supplementary techniques outlined below.

The assessment of the Undergraduate Paramedic Track is accomplished through completion of the nationally recognized and required process within the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). The Paramedic Track is currently undergoing CoAEMSP Accreditation in AY 2017. The result of this accreditation process will be available at the completion of the Spring 2017 semester.

The applied skills and knowledge in the Undergraduate Management Track is assessed through the internship experience in EHS 450, the Senior Capstone Project, and the Senior Field Experience. Students in the Graduate Master's Program have the opportunity to complete either a comprehensive examination, thesis or capstone project as their final assessment. Assessment of upcoming doctoral students in the Graduate Program will be completed through a Field Examination and a Doctoral Dissertation Defense.

The *Program Assessment* below will outline and describe how the department and program Student Learning Objectives align strategically with UMBC's Functional Competencies including the following:

1. Written and Oral Communication
2. Scientific and Quantitative Reasoning
3. Critical Analysis and Reasoning
4. Technological Competency
5. Information Literacy

The *Educational Goals and Learning Outcomes* are reflected within the EHS Department's Student Learning Objectives outlined below:

1. Integrate knowledge, attitudes, and skills acquired in the major.
This objective correlates with (2) scientific and quantitative reasoning and (3) critical analysis and reasoning.
2. Demonstrate applied competency in the major.
This objective correlates with (4) technological competency and (5) information literacy.
3. Demonstrate effective oral and written communications.
This objective correlates with (1) written and oral communication.
4. Be prepared for graduate and professional degree programs.
5. Value and defend the importance of ethics, diversity, and empathy in Emergency Health Services.

A summary of the *program assessment plan* for each educational goal and learning outcome is presented below:

Undergraduate Program Assessment

1. *Integrate competently knowledge, attitudes, and skills acquired in the major.*

- The majority of employers give EHS students a score of *excellent* to *very good* on evaluations.
- In addition, a majority of employers would also hire a UMBC EHS graduate.
- Most students complete the Senior Capstone EHS 450 and Senior Field Experience with a grade of "A" as a result of the positive feedback from employers.

2. *Demonstrate applied competency in the major.*

- Field rotation preceptors and senior internship agencies continue to express confidence in our students' abilities to produce the necessary work products acceptable to their organizations.
- Addition of curricula more germane to Emergency Management may benefit a subset of students, especially those interested in continued study and professional development in planning and disaster resource utilization.
- Through coursework, students obtain crucial skills in operations, planning and management theory, which provide key tools necessary to function in the real-world environment of internships.
- The addition of a Mobile Integrated Health (MIH) or Community Paramedicine curriculum would benefit many of our students as they enter the workforce. This has been echoed by one recent alumnus, Jared Smith, who currently manages the Mobile Integrated Healthcare team in Queen Anne's County, Maryland.

3. *Demonstrate effective oral and written communications.*

This section of educational goals and assessment was the major focus of our most recent program assessment in Fall 2016 and thus, it contains the largest amount of information and feedback regarding the state of educational assessment in the department.

- Assessment of the Written and Oral Communication objective was through the following direct and indirect measures.
 - Writing intensive coursework that challenges students to improve their writing skills through direct feedback and a staged draft process for students including EHS 450, EHS 301, and a Senior Capstone Project.
 - Student oral and affective communications in the field and clinical environment under the direct supervision of preceptors.

- Students enrolled and completing the Senior Capstone Project were interviewed with regards to self-perceived deficiencies when preparing an academic health writing project. Self-perceived deficiencies were compared against staged draft essay proposals.
 - The data from the comparison between the self-perceived deficiencies and the staged draft proposals were utilized to create a gap analysis in the current syllabus and learning materials for the class.
 - Perceived and documented deficiencies were measured in project formulation, hypothesis generation, paper layout and structure, and research methodologies.
- Direct, mentored observations of student's oral and affective communications skills with patients in the real-world field clinical environment were measured.
 - Existing clinical observational assessment tools were reviewed and compared with guidelines and best practices for patient and inter-healthcare provider communication.
 - Direct, observational shifts with emergency physicians were instituted during which feedback was gathered from practitioners regarding the utility of the existing clinical observational tool.
- Findings from the assessment of the Self-Perceived and Observed Writing Deficiencies in the Senior Capstone Project included the following:
 - Self-perceived deficiencies most often reported included project formulation and paper layout/structure. Students reported they required assistance with the "nuts and bolts" of how to formulate a paper.
 - Students who visited the writing center reported mild to moderate amount of assistance, however they requested more straightforward instructions in "how-to" actually write the papers.
 - Observed staged draft proposal assessment highlighted deficiencies in hypothesis generation and research methodologies that students did not express in their reports.
 - The gap analysis of the content and syllabus found these areas above including 1) Paper layout/structure, 2) Hypothesis generation, and 3) Suggested and feasible research methodologies were lacking.

Findings from the assessment of the direct, mentored observations of student's oral and affective communications skills with patients and other healthcare providers in the real-world field clinical environment were the following:

- The current evaluation sheets for oral communication assessment in the field/clinical environment do not adequately address the full scope of the current ongoing learner assessments.
- Examples of inadequate assessment include- completeness of report, thoroughness of hand off and expression of consequential emergency medical patient information.
- Direct, one-on-one, observational shifts have the ability to provide hands-on and real time feedback. This real-time feedback regarding oral communication skills with patients and other health care providers gives a shorter turn around for behavioral correction than non-real time feedback.

Suggested curricular additions or changes made as the result of the communication assessment:

- Redesign of the didactic material and syllabus of the Senior Capstone Writing course to reflect the gap analysis. This includes paper layout and structure, hypothesis generation, and suggested and feasible research methodologies.
- Development of a new affective and communication feedback form and methodology for field and clinical reviews to include the following focus areas for oral communication between providers and patients.

4. Be prepared for graduate and professional degree programs.

Graduates from the undergraduate program have a successful record of accomplishment in employment or continuation of education. The department as a whole also has a strong record of accomplishment in sending graduates into professional schools or graduate schools. Paramedic Track graduates, by the nature of their education, are more likely to obtain clinical positions as paramedics. However, 10% of paramedic track graduates go on to graduate school and 15% continue to professional school such as Medical School, Allopathic and Osteopathic, or Physician Assistant School.

Paramedic Track Alumni Placement

Position	Percentage from UMBC50 Event Survey
Local Fire/EMS Jurisdiction	60%
State Government	10%
Federal Government	5%
Professional School (medical, PA, RN)	15%
Graduate School	10%
Other	0%

As the Management Track is in more focus during this assessment and given the small size of the graduates, a survey of every undergraduate Management Track alumnus was entered into a database from 2012-2016. From Management Track alumni over the past five years (totaling 34), 23 locations or dispositions in employment were found (68% rate). It should be noted that approximately 12% of these graduates are also attending graduate school while employed at the locations below. The database may be found in **Management Track Alumni Placement Appendix B**, however the below summarizes the table. (See next page)

Management Track Alumni Placement

Employment or Disposition	Number	Percentage	Notes
Local Fire or EMS Jurisdiction	5	20%	Clinical and Administrative Positions
Local Government	1	4%	County Police Officer
State Government	8	32%	
Federal Government	4	16%	Includes Peace Corp and Red Cross
Private Enterprise	1	4%	Continuing education provider
International	3	12%	University faculty and clinical positions internationally
Graduate school matriculation simultaneous with the above employment	3	12%	Includes PA school

5. Value and defend the importance of ethics, diversity, and empathy in EHS.

- Employers continue to report that EHS graduates and students demonstrate ethical principles in the treatment of patients, co-workers and supervisors.
- Although the diversity of the program in regards to women and minorities has improved slightly, much work continues to be needed both in the EHS Department and in the fields of EMS and emergency health.

Graduate Program Assessment

1. *Integrate competently knowledge, attitudes, and skills acquired in the major.*
 - Graduate internship employers such as the Maryland Department of Health and Human Services, Baltimore City Health Department, Maryland Institute for Emergency Medical Services Systems (MIEMSS) and the University of Maryland Shock Trauma Center have all had positive feedback in regard to students and Graduate Research Assistants assigned to their organizations and agencies.
 - The EHS Department could develop improved student and employer feedback regarding the internship experience.

2. *Demonstrate applied competency in the major.*
 - Students are often reported to have contributed truly worthwhile work during graduate internships and GRA experiences.
 - One such example was Sako Narita, a graduate student with professional experience in the Japanese Fire Department. During the Baltimore Riots, Sako was positioned in the Baltimore Emergency Operations Center. She provided crucial feedback and recognition of the need for emergency pharmacy assistance to the city's citizens.
 - Alumni report significant job placement and advancement.

A survey of 15 graduate program alumni from the past five years yielded the following information regarding their placement after graduate school. Please refer to the appendix for detailed information such as student names and place of employment.

It is notable that 3 of the 15 graduate program alumni are in allopathic or osteopathic medical school or practicing physicians. The largest number 4/15, are now either university faculty or post-doctoral fellows. The remainder of graduate program alumni have found positions in health departments or state and county emergency services roles. Please see **Graduate Program Alumni Placement Survey Results Appendix C** for detailed table of recent graduate program alumni. (See next page)

Graduate Program Alumni Placement

Position	Number
Physician or matriculation to medical school	3
Non-physician, University faculty	3
Post-doc researcher, School of Medicine	1
Epidemiologist, Health Department	1
Paramedic and prehospital researcher, jurisdictional	1
Doctoral studies, continued graduate school	1
County EMS administrator	1
County Emergency Services Manager	1
State Emergency Planner	2
State police, supervisor position	1

3. *Demonstrate effective oral and written communications.*

EHS graduate program students demonstrate oral and written competency through their master's thesis projects, comprehensive exams or graduate capstone. Students who complete thesis projects (approximately 2 per year) undergo extensive review of their project through thesis proposal oral defense and thesis final defense to a panel of subject matter experts. Students who choose to complete comprehensive exams or a graduate capstone undergo extensive 1:1 faculty review through multiple development phases of their project. The graduate capstone is only considered appropriate for completion when it meets the level of competency consistent with publication in an academic peer-reviewed journal.

In addition to the thesis or capstone project, each EHS graduate course syllabus lists subject-matter learning objectives. In many of our courses, because of the human service core of what we in EHS do, there are explicit learning components regarding ethical issues in health care and population-level emergency management. However, some courses do not list ethics as a specific learning objective; we are working to change this, going forward. Most, but not all of our graduate courses also specifically list "professional level writing" as an objective, and this objective's completion is gauged through intensive instructor critiques of each student's written work. Again, going forward, we will make sure that *all* of our graduate courses explicitly list in the syllabus the high expectations we have for professional-level writing, along with a description of the kinds of feedback students can expect from instructors. (Professional level writing is operationalized as writing that could be effectively submitted for publication in a peer-reviewed scientific or academic journal.)

4. *Value and defend the importance of ethics, diversity, and empathy in EHS.*

- Please see the above paragraph regarding ethics.
- Graduate students continue to excel in positions of public service and the provision of essential health services to a variety of communities, with a number of graduates working in underserved populations and austere environments. The point is that we don't just talk about service, diversity, and ethics; we work with these concepts and values in our many years of professional service to the public.
- The gender and racial diversity in the graduate program students is becoming a closer approximation of the population at large, with a major improvement in the percentage of females in the current roster of students. The EMS field has long been traditionally male-dominated and largely Caucasian. Our department has been , and continues to be, well ahead of the field in attracting and educating females and people from a broad variety of ethnic backgrounds and provides them with the skills to become leaders.
- The graduate program has consistently had numerous international students. That has decreased in the last year, due to the Saudi drawback, and new US policies may further threaten the international enrollment. The presence of our international students has played an important role in helping domestic students gain understanding of cultures, behaviors, and ethics that they may not have experienced prior to entering our program.

EHS Courses with General Education Designation

1. *EHS 200 and EHS200Y Concepts of Emergency Health Services*

- This is a survey course that provides an overview of the operation of emergency health service systems. The history of EMS, the interface of public and private organizations, and review of the various personnel who constitute these systems are examined in relation to their impact on the health care delivery system.
- Students in EHS 200 have noted that additional assistance and guidance is necessary when completing the written assignment in this course. For many students, this course represents some of their first writing experiences. While students are encouraged to visit the library and writing centers on campus, many have noted that they require more detailed instructions regarding the assignment such as outlines and examples of successful projects.

The course syllabus explicitly describes learning objectives and methods of assessing student progress regarding these objectives:

Course Objectives

By successfully completing this course, the student:

- 1) Will demonstrate through examinations the ability to identify, understand, describe, and differentiate the components of an Emergency Medical Services (EMS) system
- 2) Will effectively communicate through written assignments based on the readings how EMS is an integral component of the health care system as well as its intersection with Public Health, Public Safety and other social support systems*

- 3) Will access, report on and summarize information about Emergency Health Services through reading the text, government documents and reports, scientific journals, industry trade journals and websites
- 4) Will demonstrate skills summarizing a published peer-reviewed original research projects introductory knowledge of fundamental components published scientific research*
- 5) Will research a topic of interest concerning EMS and write a paper in APA or MLA format accessing information from scientific journals, industry, trade journals, daily press and websites*

**meets competency requirement for information literacy for a General Education Course Competency in the Social Science category.*

Additionally, in the on-campus version of EHS 200 class discussion allows the opportunity for instructors to evaluate the affective domain of the students by assessing peer interactions and information assimilation. Please note also that the “Y” section of this class is taught in conjunction with the UMBC “Freshman Academic Success Team”.

2. *EHS 311 Stress and Burnout: Personal and Professional Issues*

- This course provides detailed information on the types of stress that affect one’s personal and professional life. The causes and effects of stress and the recognition of stress symptoms in personal and professional settings is emphasized, as is a broad spectrum of stress-management strategies and stress control techniques. The course focuses on general stress, cumulative stress, critical incident stress (CIS) and post-traumatic stress disorder. Case examples from military, emergency services and other work settings enhance the course material.
- This course is noted by students to have benefits both professionally and in building life skills. The work conditions in EMS are often challenging emotionally and physically with our students experiencing these first hand. Students often note their careers in EMS would not be possible without the content provided within this course.
- In addition to the normal course requirements regarding writing and effective expression, the syllabus in this course expressly requires students to both know and work within the ethical norms and laws pertaining to information regarding identifiable individuals’ psychological, emotional and physical conditions.

3. *EHS 345 Death and Dying*

- This course is a broad multidisciplinary approach that examines the theoretical, philosophical and social origins of past and present death attitudes and behavior. Topics include death throughout the life cycle, suicide, euthanasia, grief and bereavement, funeral customs, and the impact of religion and culture on death perspectives.
- Sociology is currently the lead for this course that is offered jointly between the two departments. EHS 345 is cross-listed as Sociology 359. Sociology’s instructor Kim DeMichele is responsible for the content of the course, the method used for grading, as well as the methods for judging functional competencies.

CURRICULUM

Undergraduate Management Curriculum

Management track students take the following major courses:

Course	Course Name	Credits	Offered
EHS 115	Medical Terminology	3	Spring, Fall, Winter, Summer
EHS 200*	Concepts of EHS	3	Spring, Fall, Summer
EHS 200Y*	Concepts of EHS for Incoming Students	4	Fall
EHS 202	Clinical Concepts and Practice I (EMT-B)	3	Fall, Summer
EHS 203	Clinical Concepts and Practice II (EMT-B)	3	Spring, Summer
EHS 301	Planning Emergency Health Systems (WI)	3	Fall
EHS 311	Stress and Burnout	3	Fall
EHS 320	Disaster Management	3	Spring
EHS 351	Financial Management and Budgeting	3	Spring
EHS 360	Instructional Issues in EHS	3	Spring
EHS 400	EHS Theory and Practice	3	Spring
EHS 430	Research Topics in Emergency Health Services	3	Fall
EHS 450	Emergency Health Services Practicum (Internship)	3-15	Fall, Spring

*Student chooses either EHS 200 *or* EHS 200Y

EHS Elective

EHS 345	Death and Dying	(3)	Cross-listed with Sociology as lead for this course.
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- The foundation course in the major is EHS 200, Concepts of Emergency Health Services, where students are introduced to the discipline of emergency health services. In EHS 200, students are required to review discipline specific literature and complete a journal review. An introductory lecture on research in EMS introduces the student to modes of inquiry and methodology used in EMS research as well as the limitations of such approaches.

- In addition to general education requirements and courses specific to the major, management track students take courses in sociology, psychology, political science, and economics. Two semesters of accounting are required. Majors are also encouraged to complete the minor in Public Administration and Policy offered in cooperation with Political Science.
- The Management Track culminates in a 15-credit capstone management internship (EHS 450) with an EHS agency at the local, national, or international level. During this 350 hour experience, student interns participate in the workplace under the direct mentorship of an EMS professional. Students meet routinely with our management coordinator and report on activities at the internship site. During the internship, students must prepare and present a staff study, and a final project that is an actual agency project that the intern produces individually or as part of a workplace team.

State of Knowledge in the Discipline

Students gain a unique depth of experience in EHS through this baccalaureate degree. The program stresses academic and clinical abilities, interpersonal and leadership skills, and the capacity for appropriate judgment. The major objective of the degree program is to prepare students for work in various occupational settings relating to EHS systems. Primary emphasis is placed upon developing leadership skills and promoting personal and professional growth.

Graduates are prepared to:

1. Coordinate and manage emergency health systems
2. Interact effectively with other professionals in the emergency medical services system, as well as with community agencies and the general public
3. Satisfy certification requirements for EMT-Basic or EMT-Paramedic
4. Conduct or use research
5. Pursue graduate study

The Department of Emergency Health Services offers a unique perspective for the education of future EMS professionals. This is accomplished by providing a broad liberal arts and sciences education, which enhances the graduates' employment opportunities as pre-hospital providers and managers. The Department of Emergency Health Services also prepares graduates for advancement to graduate and professional studies.

Career and Academic Pathway

Federal, state and local efforts in the past decade have resulted in innovative programs designed to improve the quality and efficiency of emergency health care services. As a result, several career fields have been created. Health professionals are needed at all levels in today's emergency medical services system.

Depending on experience and education, EMS health professionals will serve as emergency medical technicians, educators, supervisors, coordinators, planners, consultants, managers and directors. Additionally, EMS activities are relevant to ambulance providers, fire and rescue services, hospitals, industrial health services, military and volunteer EMS organizations.

The solid academic basis of the EHS baccalaureate degree also prepares students for advanced studies in the sciences, medicine, public health, hospital administration and other health management programs. Virtually all graduating classes have at least one student who is accepted to medical school. While this is not an intentional goal of the program, it speaks well for the robust and broad education our program demands of our undergraduate students.

There are no substantive changes to the program in the last six (6) years.

There are no courses not offered in the past five (5) years.

Emergency Health Services Minor Curriculum

To earn a minor in EHS, in conjunction with a Bachelor of Arts or Science degree in another discipline, students must complete a minimum of 18 credits, including:

Course	Course Name	Credits
EHS 115	Medical Terminology	3
EHS 200	Concepts of Emergency Health Services	3
	<i>Choose either EMT or EMR</i>	
EHS 202	Clinical Concepts and Practice I (EMT-B)*	3
EHS 203	Clinical Concepts and Practice II (EMT-B)*	3
	OR	
EHS 102	Emergency Medical Responder (EMR)	3

*MUST take both section for credit towards minor or possess a valid EMT Certificate.

Any two-three (depending on choice above) additional upper-division EHS courses, except internships, independent study and courses open exclusively to paramedic track students are required. Students interested in EHS as a minor should consult a department advisor for assistance. No courses taken on a P/F basis shall count toward the minor. A grade of "C" or better is required for all minor courses.

Graduate Program Curriculum

Course	Course Name	Credits	Offered
EHS 609	Guided Intro to EMS Research	2-3	Fall, Spring
EHS 630	Issues Analysis and Proposal Writing	3	Fall
EHS 632	Disaster Health Services	3	Spring (moving to Fall 17)
EHS 633	Refugee Health Services	2	Not scheduled/Needs faculty
EHS 634	Disaster Mitigation	3	Fall, Every 2 years
EHS 636	Disaster Response	3	Spring, Every 2 years
EHS 637	Disaster Recovery	3	Fall, Every 2 years
EHS 638	Disaster Preparedness	3	Spring, Every 2 years
EHS 639	Catastrophe Preparation and Response	3	Spring
EHS 640	Introduction to High-Performance EHS	3	Fall
EHS 641	EHS Law and Policy	3	Fall
EHS 642	Event-Driven Resource Deployment	3	Spring
EHS 650	EHS System Design and Contracting	3	Spring, Every 2 years
EHS 652	Human-Resources Deployment	3	Spring, Every 2 years
EHS 658	Materials and Fleet Management	3	Fall, Every 2 years
EHS 661	Educational Issues in Emergency Health Services	3	Spring
EHS 662	Educational Program Management	3	Fall
EHS 676	EHS Management of Reimbursement	3	Fall, Every 2 years
EHS 690	Information Systems for EHS Leadership	3	Not scheduled, should be dropped
EHS 691	Business Development and Strategic Planning	3	Spring
EHS 699	Independent Study	1-3	Fall, Spring
EHS 700	Systems Practicum	3	Fall, Spring
EHS 720	Emergency Health Services Quality Assessment	3	Fall
EHS 790	Research or Capstone Project	3	Fall, Spring
EHS 799	Master's Thesis Research	1-6	Fall, Spring

The *EHS Graduate Master's Level Degree Program* has three tracks and a graduate certificate, each representing a "specialization". They are: 1) administration, planning and policy; 2) preventive medicine and epidemiology; 3) education. In addition, the program offers a graduate certificate program in emergency management, which can either be taken as part of the degree program, or as a stand-alone certificate program. For all degree tracks, thirty (30) total credits are required to graduate. The certificate program, if taken independently from the degree, requires fifteen (15) total credits.

1. The ***administration, planning and policy*** track is designed to meet the needs of students who plan to focus their career on the development and management of emergency health care systems. This can range from playing a supervisory or directive role in a local private or public EMS organization, to working as state or national level EMS system directors. For example, we have several alumni working as state EMS directors, and others working within the federal government on EMS governance and reimbursement issues. Several alumni are also now using the skills from this track in international assignments. The track provides graduate-level review of planning and evaluation tools, personnel management, EMS finance and reimbursement, resource deployment strategies, fleet management, proposal writing, policy analysis, and disaster health services design and management. Students who select this track are typically clinicians ranging from paramedics to physicians, who envision for themselves (or currently occupy) a management role in an emergency health care organization. Total credits required: 30
2. The ***preventive medicine and epidemiology*** track is a joint effort with the UM School of Medicine's Department of Epidemiology and Preventive Medicine. Students take core courses in both departments and have an array of electives available on both campuses. This track is designed for individuals who wish to work on the public health side of emergency health care, often seeking or occupying positions in EMS policy (from a public health perspective), EMS medical direction, disaster health service planning and implementation, research, injury control, and international EMS. The track provides core courses in epidemiology and biostatistics, EMS system design and management, proposal writing and policy analysis, with electives ranging from advanced epidemiologic research methods to disaster and refugee health services. Students who take this track are typically physicians, nurses, or other clinicians who have some previous experience in disaster or public health work. Total credits required: 30

In the last year, we have had difficulty getting our students into some of the UMB core epidemiology and biostatistics course. We are now working with the UMBC departments of sociology and public policy to make equivalent courses available to our graduate students. Several students have had to take the epidemiology and biostatistics courses out of state and transfer them in.

3. The ***education*** track is a joint effort with UMBC's Department of Education. Students take core and elective courses in both departments as well as from other departments throughout UMBC. This track is designed for prehospital clinicians who wish to become EMS educators, but who want to do so based on a solid understanding of the principles and science of pedagogy. These students take the core EHS graduate courses and a series of the core graduate education courses, including the "adult learner" and instructional system design courses. Students in this program typically reach into the vast array of electives available in the UMBC Department of Education to fill out their program. This track is typically occupied by seasoned paramedics who wish to teach in, and manage, college-level EMS education and training programs. Total credits required: 30

4. Several *sub-specializations have emerged in the EHS graduate program*, as a result of faculty interest and expertise that are not bound to a particular track, but may be pursued, in cooperation with the mentor, within the current track structure. Those sub-specializations are *disaster and refugee health services (Bissell and Jenkins), volunteer agency management (Walz), emergency public health (Bissell and Jenkins), and Mobile Integrated Health Care (Flint)*.
5. The **emergency management certificate** program is designed such that it can be done simultaneously with any of the above described tracks, although it is most appropriate for individuals in the administration or preventive medicine/epidemiology tracks. The program consists of a minimum of five core courses representing the basic phases of emergency management (mitigation, preparedness, response and recovery, as well as catastrophe), and encourages program students to also take EHS 632 Disaster Health Services and EHS 633 Refugee Health Services. The five core courses in the program are not focused on health, but rather the field of emergency management. However, we tie the principles of emergency management back to health concerns and concepts in each course, thus creating a niche within the small number of graduate level emergency management programs, a niche that consists of the overlap of emergency management and public health. Students who have completed the five core courses will have covered all of the information needed for them to successfully pass the certification exam given by the International Association of Emergency Managers. All courses in this certificate program are taught by Bissell or adjunct instructor (and EHS MS degree alumna) Jennifer Ryan. It is also worth mentioning that Ms. Ryan is now a PhD-seeking student in the EHS concentration of the UMBC Public Policy PhD program. Total credits required: 15
6. All EHS courses are offered online and hybrid and are available nationally and internationally. We offer a weekly on-campus graduate seminar to augment and discuss the material covered in the online lectures and readings. We webcast these sessions live so that both distance and on-campus students can participate. These webcasts may also be viewed later, when convenient.

Emergency Services Concentration, Public Policy Doctoral Degree

In conjunction with the School of Public Policy, the EHS Department offers an Emergency Services Concentration within the Doctoral Program. Students may choose from a wealth of classes tailored either to Emergency Health or Emergency Management. The remainder of the doctoral curriculum is provided through the School of Public Policy.

Emergency Health Pathway, EHS Curriculum

Required Coursework (3 Courses in Concentration)

- EHS 630 Issues Analysis and Proposal Writing
- EHS 640 Intro to High Performance EMS
- EHS 642 Event-Driven Resource Development

Elective Coursework (2 Courses in Concentration, 1 Elective)

- EHS 632 Disaster Health Services
- EHS 633 Refugee Health Services
- EHS 639 Catastrophe Preparation and Response
- EHS 641 EHS Law and Policy
- EHS 650 EHS System Design
- EHS 691 Business Development and Strategic Planning
- EHS 720 EHS Quality Assessment

Emergency Management Pathway, EHS Curriculum

Required (4 Courses in Concentration)

- EHS 630 Issues Analysis and Proposal Writing
- EHS 640 Intro to High Performance EMS
- EHS 641 EHS Law and Policy
- EHS 642 Event-Driven Resource Development

Electives (1 Course in Concentration, 1 Elective)

- EHS 632 Disaster Health Services
- EHS 633 Refugee Health Services
- EHS 634 Disaster Mitigation
- EHS 636 Disaster Response
- EHS 637 Disaster Recovery
- EHS 638 Disaster Preparedness
- EHS 639 Catastrophe Preparation and Response
- EHS 650 EHS System Design
- EHS 691 Business Development and Strategic Planning
- EHS 720 EHS Quality Assessment

FACULTY PROFILE

Our department is currently in a marked state of change. We have a new chair as of this year and the majority of our very small faculty are retiring in the next five years. In the past two years, the department has also taken on the responsibility of funding a portion or entirety of two faculty members' salaries. (Crista Lenk and Diane Flint) In addition, our former Chair is also assisting in the Provost's office.

The department expects a potential for two tenure track retirements, two non-tenured retirements and one non-tenured track transition in the next five years. This constitutes almost the entirety of our faculty with the exception of one lecturer and the current Chair.

The following describes our current Faculty and the plans moving forward for growth and stability.

Current Tenured Senior Faculty 3

Current Tenured Track Junior Faculty 0

Chair - Emergency Public Health/Disaster Specialist, Dr. J Lee Jenkins

Management/Graduate Program - Educational Specialist, Dr. Bruce Walz

Also Special Assistant to the Provost

Graduate Program Director - Disaster/Preparedness Specialist, Dr. Richard Bissell

Current Non-Tenured Track Faculty Full Time

Management Track Director - Diane Flint (20% funded by department)

Paramedic Track Director - Dwight Polk

Paramedic Clinical Coordinator - Gary Williams

Dr. Jeff Mitchell (part time 60%, undergraduate courses in emergency management & critical incident stress)

Crista Lenk (teaches ½ course per semester, funded 100% by department)

Currently the EHS Department has three senior tenured faculty members, two of whom are likely to retire in the next one to five year time span. Dr. J Lee Jenkins, Department Chair, desires to have the department capable of appointing a new Chair in five years after completion of two terms as Chair. It also should be noted here that the Paramedic Track Director, who has served the department for over 20 years, may also retire in approximately 3-5 years. We should also note that our undergraduate faculty member who carries a 60% load, is advancing in age; we need to have some flexibility in replacing him should he suddenly separate for health reasons.

Given the above situation, to continue current staffing levels of Tenured Faculty in the next five years, the department will need to hire or promote three faculty members to Associate Professors. Currently, the department has no junior, Tenured-Track Faculty members.

Proposed Tenure-Track Faculty (4-5)

Chair

Graduate Program Director

Management/Graduate Program Faculty (Mobile Integrated Health)

Paramedicine Track Faculty (Simulation)

Graduate Program Faculty (Masters and New PhD Program Focused)

Hiring Plan AY18-AY22

To maintain currently staffing levels the department will need to hire two senior, Tenured Faculty members, one junior Tenure Track faculty member, and one Non-Tenured Track Paramedic Program Director.

Proposed New Faculty to Start Fall 2018

- Graduate Program Director, Senior Tenured Faculty, Specializing in Disasters/Emergency Public Health to replace a current full professor who will likely be retiring at the end of Spring 2018.
- Undergraduate Junior Faculty and Management Track Director, Specializing in Mobile Integrated Health to replace or promote Diane Flint who is finishing her PhD, Spring 2017.

Proposed New Faculty to Start Fall 2019-21

- Undergraduate/Graduate Senior Faculty, Specializing in Clinical Simulation and Education as the other faculty member in the department (who could potentially be chair) to replace current senior faculty member who may be retiring
- Non-Tenured Track, Paramedic Program Director, to replace our current instructor, who will be retiring.

To increase faculty by one, the department desires to hire an additional junior, Tenured-Track faculty member to specialize in teaching undergraduate courses and graduate coursework in management and emergency health. This plan does not account for the retirement of our current 60% clinical professor, which may also occur at the end of the next five years.

Program directors, who serve as the senior faculty for each of the department's undergraduate tracks as well as graduate program director, also teach full loads and provide advising and curriculum oversight for their respective tracks.

The paramedic track, which is nationally accredited, has specific staffing requirements. At present, a senior lecturer serves as the paramedic program director and principal didactic instructor. He is assisted by a lecturer who serves as the clinical coordinator, who is in his first year with the department and does not yet have a graduate degree. In addition, a physician medical director is retained by the department and given the faculty rank of clinical assistant professor, although his teaching responsibilities are minimal.

The current management track program director is in her third year and came to us from the private, non-governmental, EMS sector. She is currently a doctoral student in Public Policy and due to finish her PhD in the Summer 2017. It is her intention to seek a tenure-track position in

either EHS or another university department after completion of her doctorate. It is also the desire of the EHS Department to have a tenure-track faculty member who is the management track director for the undergraduate program. No such faculty member currently exists who is tenure-track and could fill this role. For this reason, the department will seek to request to hire a tenure-track faculty member with experience in private sector or hospital-based EMS to serve as a management track director of the undergraduate program. The department anticipates several challenges to the recruitment of such individuals given that they often receive six figures salaries in the private sector.

The department continues to offer its master's program both online and on-campus and by doing so benefits from the ability of utilizing industry experts to teach courses, especially through the administration, planning and policy track, which would otherwise be unavailable. In the future, the department will consider a market analysis of which program tracks are most applicable to today's marketplace.

In response to a significant request from the EMS and first responder community during market research at conferences, the department is currently working towards delivering the undergraduate management track online as well as in-classroom. Currently three of our courses are offered in online format:

EHS 115 Medical Terminology	Gary Williams
EHS 200 Concept of EHS	Diane Flint and Jae Yang (adjunct)
EHS 311 Stress and Burnout	Jeff Mitchell and Jae Yang (adjunct)

The department is struggling with how best to staff new online courses or sections, whether by current full-time faculty, new faculty, or a combination. The challenge is that introducing an online track would essentially double the teaching and administrative load of the current management track faculty.

The racial and gender composition of the department reflects that of the EMS profession in general which is predominately white male. However, with the percentages of women and minorities increasing in the EMS field, the department is committed to hiring a more diversified faculty. The graduate program and the fields of disaster health and emergency public health demonstrate a growing opportunity for the department in diversity, since these fields generally have a more diverse work pool from which to recruit.

FACULTY RESEARCH & SCHOLARLY ACTIVITY

Faculty Research and Scholarly Activity

Although the department has only three tenured professors, all EHS faculty members have an active research and publication agenda, all of which ties back to a focus on preparedness for, management and execution of, or evaluation of responses to or prevention of emergencies. For example, our Paramedic Track Director, Dwight Polk, is non-tenured, however he is well-known nationally for his conference presentations on the mental health of first responders and has published three textbooks during his career at UMBC.

This research is almost all multi-disciplinary in content, containing material, concepts, paradigms, and methods from medicine, public health, mental health, sociology, economics, policy sciences, emergency management, organizational planning and management, and history. Please refer to the attached publications summary for detail on titles.

Name	Research Topic Profile
Bissell	Evaluation of clinical effectiveness in EMS; epidemiologic profiles of emergency medical conditions; emergency public health; disaster epidemiology; long-term hazards assessment and related mitigation and preparedness; public health implications of global changes; public health preparedness; international EMS system design
Jenkins	Disaster medicine and emergency public health with emphasis on the delivery of healthcare during times of crisis, caring for internally displaced persons and refugees
Walz	EMS history; systems design and development; EMS education
Mitchell	Mental health; stress management; crisis management; PTSD consequences, mitigation, and treatment
Polk	Prehospital management of behavioral emergencies
Flint	Mobile Integrated Healthcare and community paramedicine

Recent projects have been funded by the Maryland Department of Health and Human Services and the Centers for Disease Control and Prevention.

Publications and funding for the past five years are listed here, with conference presentations found in the **Appendix D, Conference Presentations**.

Books

Stair, RS, **Polk, DA**, Shapiro, GL, and Tang, N: Law Enforcement Emergency Response: Principles of Medicine, Rescue, and Force Protection, Sudbury, MA, Jones and Bartlett Publishers, Inc., 2013, 546 pages.

Walz, B.J. and Zigmont, J.J. (2017). Foundations of EMS Systems, 3rd ed. Burlington, MA: Jones and Bartlett Learning. 306 pages.

Bissell, R.A. (2013) *Preparedness and Response for Catastrophic Disasters*. CRC Press/Taylor & Francis. 402 pages.

Mitchell, J.T. (2015). *Group Crisis Intervention (5th edition)*. Ellicott City, MD: International Critical Incident Stress Foundation. 142 pages.

Mitchell, J.T. and Visnovske, W.L. (2015). *Crucial Moments: Stories of Support in Times of Crisis*. Ellicott City, MD: Create Space. 158 pages.

Everly, G.S., Jr. and **Mitchell, J.T.** (2015). *Critical Incident Stress Management (CISM): Review Manual*. Ellicott City, MD: International Critical Incident Stress Foundation.

Everly, G.S. and **Mitchell, J.T.** (2017). *Psychological Crisis Intervention: The SAFER-R Model*. Ellicott City, MD: Authors (in press).

Everly, G.S. and **Mitchell, J.T.** (2017). *Critical Incident Stress Management: A Practical Review of CISM*. Ellicott City, MD: International Critical Incident Stress Foundation. (in press).

Mitchell, J.T. Visnovske, W.L. (2017) *Cost Of Freedom*. Ellicott City, MD (In progress)

Lenk Stathers, C (with Murphy, Michael; Pecora, Dawn; McEvoy, Mike; Rabrich, Jeffrey and Pollak, Andrew. (2011). *Critical Care Transport*. American College of Orthopedic Surgeons.

Grants, Funding

Maryland Department of Health and Mental Hygiene: \$249,646 to review and report on jurisdictional health risk factors and preparedness. 2013 with extensions through June 2014.
PI: Bissell

Maryland Department of Health and Human Services and the Centers for Disease Control and Prevention. *Development of Curriculum for First Responders in High Consequence Infectious Diseases*.
Amount 700,000, 2017-2019, PI: Jenkins, Co-PI: Bissell

Publications

J Teter, M Millin, **RA Bissell**. "Hand Hygiene in Emergency Medical Services". Prehospital Emergency Care. April 2015, Vol 19, No. 2, pp 313-319.

JV Nable, M Margolis, B Lawner, JM Hirshon, A Perricone, S Galvagno, D Lee, M Millin, **RA**

Bissell, R Alcorta. "Comparison of Prediction Models for Use of Medical Resources at Urban Auto-racing Events. *Prehospital and Disaster Medicine*, Sept 2014.

D Johnston, S Standring, K Ronan, M Lindell, T Wilson, J Cousins, E Aldridge, M Ardagh, J Deely, S Jensen, T Kirsch, **RA Bissell.** "The 2010/2011 Canterbury Earthquakes: Context and Cause of Injury. *Natural Hazards*, Sept 2014.

MJ Levy, KG Seaman, MG Millin, **RA Bissell, JL Jenkins.** "A Poor Association Between Out-of-Hospital Cardiac Arrest Location and Public Automated External Defibrillator Placement. *Prehospital and Disaster Medicine*, August 2013, Vol 28, No. 4, pp 342-347.

DL Lemkin, M Bond, D Alves, **RA Bissell.** "A Public Health Enforcement Initiative to Combat Underage Drinking Using Emergency Medical Services Call Data." *Prehospital and Disaster Medicine*, May 2012

A Al Amiry, **RA Bissell,** BJ Maguire, DW Alves. "Methicillin-Resistant *Staphylococcus Aureus* Nasal Colonization Prevalence among Emergency Medical Services Personnel." *Prehospital and Disaster Medicine*, August 2013, Vol 28, No. 4.

J Mitrani-Reiser, M Mahoney, WT Holmes, JC de la Llera, **R Bissell,** T Kirsch. "A Functional Loss Assessment of a Hospital System in the Bío-Bío Province. *Earthquake Spectra*, Vol 28, No. S1, June 2012: pp S473-S502.

TD Kirsch, J Mitrani-Reiser, **RA Bissell,** LM Sauer, M Mahoney, WT Holmes, N Santa Cruz, F de la Maza. "Impact on Hospital Functions Following the 2010 Chilean Earthquake." *Disaster Medicine and Public Health Preparedness*, 2010, Vol 4, No2, pp 122-128.

Jenkins JL, Mason M. A Long Night in the Emergency Department during the Baltimore, Maryland (USA) Riots. *Prehosp Disaster Med.* 2015,pp 1-2,DOI 10.1017/S1049023X15004914

Levy M, Broccoli M, Cole G, **Jenkins JL,** Klein EY. An Analysis of the Relationship between the Heat Index and Arrivals in the Emergency Department. *PLOS Currents Disasters.* 2015 Oct 29 . Edition 1. doi: 10.1371/currents.dis.64546103ed4fa0bc7c5b779dd16f5358.

RESEARCH INFRASTRUCTURE PLANNING

Emergency Health Services Research Areas of Excellence

After thorough review of the current major themes in EMS and Emergency Public Health education, the department has identified three current areas of excellence that correspond to current faculty interest and skills.

- Mobile Integrated Health
- Clinical Simulation and Education
- Emergency Public Health and Disasters

The department recognizes the importance of the hiring process and transition phase that is to occur in the next five years and the opportunity it may present to re-focus the research arenas within the department. It has been discussed and deserves further investigation to determine if other areas such emergency management research should be added to this list and which areas of research focus faculty hires should be recruited into.

Drs. Bissell and Jenkins specialize in Emergency Public Health and Disaster Health. It should be noted that this topic area is often split between Stateside Preparedness and International Disasters, and a subject matter expert is required in both. It should also be noted that the new, shared emergency health PhD program with Public Policy will require extra senior faculty time working with the new PhD students. The doctoral program has already enrolled its first student with 3 more students currently applying. We estimate an on-going census of 3-6 PhD students, in addition to our roughly 30-40 MS degree students. Dr. Walz currently fills the role of Educational Specialist and teaches in both the undergraduate and graduate track.

The research focus of Mobile Integrated Health is currently being fulfilled by our Non-Tenured Track Clinical Assistant Professor, Diane Flint, who will be completing her PhD in Spring 2017. She will be searching for a Tenured-Track position at that time and potentially will be leaving UMBC. It is the strong desire of the department to retain Ms. Flint given her content and research knowledge in Mobile Integrated Health Care and her extensive departmental and institutional knowledge and experience in Emergency Health.

Infrastructure Planning

Moving forward the department will require increased administrative and faculty resources to support the new joint PhD program, which is already begun to enroll students. Together the current research programs in Mobile Integrated Health, Disaster Health and the growing Graduate Program have a growing need for statistical computational and software support. Currently statistics support has been gathered through ad hoc relationships with other faculty such as HAPP (Health Administration and Policy Program), the Mathematics Department, and Sociology. A more formalized method for support or relationship building would greatly assist

the department. In addition, the department has struggled to purchase statistical programs such as STATA and SPSS for each faculty in need. The EHS department foresees increased infrastructure planning necessary in the following three areas:

- Administrative and faculty support for Joint PhD Program
- Statistical computation and software support
- Clinical Simulation Laboratory Planning

A more multi-year growth initiative has begun with the planning of the new Clinical Simulation Laboratory. The laboratory provides a high level of *innovative pedagogy* in health research. This laboratory would house simulation research programs as well as education clinical simulations, which are a required portion of the paramedicine curricula for accreditation. On this front, the department is hopeful for the acquisition of the necessary space, Sherman Hall 2nd floor space request, and construction funding.

After completion of rehabilitation construction of the proposed space (in the Sherman Hall 2nd floor), the department plans to construct a modern healthcare simulation space through acquisition of funds from a variety of granting sources. Currently the department has two pending joint research grants in simulation from the National Science Foundation with the UMBC Department of Information Systems. This work is *both multi-disciplinary and spans two colleges in scope and practice*. The EHS Department is also currently in negotiations with the United States Department of State to perform clinical simulation research for its tactical medical division and a Memorandum of Understanding is pending. The EHS department also plans to investigate other options such as university level and industry funding to support this innovative research.

The research performed by the tenured faculty in the department is augmented significantly by the non-tenured track faculty as well. Several of our non-tenured faculty, including Dwight Polk and Jeffery Mitchell, are national and international experts in the field and well-known book authors and conference presenters.

TEACHING QUALITY

It is the priority of all faculty and a mission of the department of EHS to provide excellence and innovation in EMS and emergency public health education. Our faculty are known for their dedication to students, teaching and advising. Balancing faculty time with demands on teaching, research, grant application and administration is a challenge given the current 3+2 course load for tenure track faculty. In addition, many of our non-tenure track faculty and instructors carry large teaching and advising loads while also publishing books and presenting at conferences.

One such example of personalized teaching and dedication to students was demonstrated by Dr. Bissell and Dwight Polk in regards to an upper level student who was noticed to be performing less than optimal on his exams in an EHS research class. After discussion with Dwight Polk, the student's advisor, Dr. Bissell was convinced that the student had more potential than he was showing in class. After some discussion, it was found that the student had an undiagnosed learning disorder. After examinations were delivered in a modified format, the student performed quite well and passed the class.

Unfortunately, except for the consideration of merit pay, there is no department incentive for teaching excellence. Rewards for teaching most often occur when the professor or instructor has an increased teaching load such as the case of Gary Williams whose Medical Terminology class has grown from 50 students, to now over 150 with demand increasing each semester.

Given the large anticipated turnover and retirement (almost the entirety of the department) anticipated over the next five years, the department anticipates an increased need for junior faculty mentoring. The department plans to review and revise, if necessary, its policy document "New Tenure Track Faculty Mentoring Guidelines." In addition, we will work in conjunction with the UMBC Faculty Development Center to utilize their resources

Total credit hours provided by faculty are generally stable over the past five years with some fluctuations in between. Total credit hours generated in FY12 were 2832 compared to FY16 of 2970. We would like to note that the majority of our faculty are teaching in overload despite the increased level of utilization of adjunct faculty for teaching.

Interviewees conducted with alumni during the UMBC 50 Event had the following feedback and suggestions for improvement regarding teaching quality and curriculum in the EHS Department.

- Continue to enhance the public administration and policy curriculum given the significant opportunities for EHS students in federal government positions such as FEMA, ASPR, Department of State and public health agencies.
- Expand the potential horizons to students with clinical experience to include federal and healthcare positions such as federal agent medics, federal agency medical planners, and state and federal emergency managers.

The response from students via the Student Course Evaluation Questionnaire (SCEQ) on the effectiveness of teaching is presented below for the last three academic years. Teaching effectiveness for EHS courses as measure through SCEQ and now Student Evaluation of

Educational Quality (SEEQ) has remained above average for the past 10 years.

SCEQ/SEEQ Results for evaluation of teaching effectiveness:

Semester	Department Mean	UMBC Mean
FA 2016*	4.24	4.10
SP 2016	4.30	4.17
FA 2015	4.38	4.17
SP 2015	4.20	4.17
FA 2014	4.37	4.14
SP 2014	4.27	4.14

***NEW SEEQ implemented**

SERVICE

Faculty members of the EHS department provide many hours of service to the University, public, and professional communities at a local, state, national, and international level. Faculty members are dedicated professionals who offer their experience and expertise as educators, consultants, and researchers.

Service to the University

As a small department at UMBC, many administrative assignments will fall upon the department chair. However, faculty members participate in committee assignments at the department and University level. Faculty have served on search, advising, disaster, and administrative committees and student clubs at both the department and University level. Given our small department size, every faculty and staff member is regularly available for advising and guidance of undergraduate and graduate students. However, two faculty, Dwight Polk and Diane Flint, are together responsible for advising between 142 and 242 undergraduate students each year (data from table 8). Our faculty serve on a number of university committees ranging between 12 and 52 over the past five years. In addition, Dwight Polk and Gary Williams often serve as additional advisors to students of all majors over the summer sessions.

Service to the Public

A majority of faculty in the department continue to serve the medical community in either a volunteer or paid capacity. Of our faculty members, four are licensed paramedics volunteering with community-based fire/EMS agencies and another works part-time as an aviation/flight paramedic. Two members are also licensed mental health professionals and provide volunteer service on multiple Critical Incident Stress Management Teams in the Baltimore region. Dr. Jenkins is a board-certified Emergency Physician who practices in an inner-city, urban emergency department and regularly supervises our own paramedic students in clinical rotations. Other faculty members are long-term volunteer advisors to county health departments and to the American Red Cross.

Service to the Profession

Dr. Jenkins and Diane Flint serve on the State Mobile Integrated Health Care Task Force for the MIEMSS. Drs. Jenkins and Bissell regularly peer review journal articles in the disaster and emergency public health arena for the journals *Injury*, *Prehospital and Disaster Medicine* and *Journal of Emergency Management*. Dr. Jenkins also sits on multiple national committees in disaster medicine including the American College of Emergency Physicians, Disaster Medicine Committee, which is an elected position in which she assists in developing national policy for disaster healthcare. She also leads the EMS Interest Group for the Society of Academic Emergency Physicians. Diane Flint has also just recently become an evaluator for CoAEMSP, the national accrediting committee for paramedic education programs. This position serves both profession and the department as the knowledge that she gains directly affects our own paramedic program development.

STUDENT PROFILE

Undergraduate Enrollment and Degrees

Enrollment in the undergraduate EHS program has ranged from 92 (2013) to 112 (2011) with a five year average of 101 students. This is above the five years average reported in the last APR of 89. This is potentially due to improved paramedic track retention efforts. Paramedic track enrollees continue to constitute the majority of undergraduate students, averaging 80 students in the Paramedic Track and 20 students in the Management Track.

Near term goals include raising the enrollment of the Management Track. Through interviews with attendees at professional conferences and practicing paramedics in the field, it appears as though the high market for the Management Track students is amongst those individuals who are currently working or have just graduated from community college with an Associates Degree in Paramedicine. To this end, we have stepped up our efforts to improve marketing and outreach to this potential student population, and we are near completion of our first updated Articulation Agreement to assist students in the transition from community college to university.

Most notably, in the past semester, our department is finalizing an Articulation Agreement with Howard County Community College to provide a framework for graduates of their Associates level Paramedic Program to finish their bachelor's degrees in Management at UMBC. Agreements with Anne Arundel County and Carroll County Community College are also being drafted.

It has also been noted during our interviews with conference attendees and working professionals that the availability of online classes, at least for a portion of their education would greatly facilitate their ability to attend UMBC. To this end, the EHS Department has brought two additional classes online this academic year, EHS 200 and EHS 311 (Summer 2017). This brings the total of undergraduate management classes available online to management students to three.

We are in discussion regarding which students would be allowed to take the on-line sections of the course, as it is our preference that on-campus students continue to take the on campus sections of these courses.

The department also has plans starting this semester, Spring 2017, to re-institute a marketing and outreach initiative to improve enrollment. The decision to allocate funding to marketing has been a challenging one given the current operating deficit of the department's budget, however we have decided to start this process for the long term benefit and sustainability of the department. We also believe that an analysis should soon occur that calculates the number of faculty needed to support a larger program with more management students given that many of our faculty are already working in overload.

Undergraduate Demographics

Part-time undergraduate continue to constitute approximately 10% of students over the past five years. These are most often Management Track students who are more likely to work full-time while attending school. Undergraduates also tend to be in-state students (66%), male (70%), and white (65%). Approximately 10% of students report African descent, 10% Asian descent, and 7% Hispanic descent. Female undergraduate students constitute approximately 30%. This appears to be stable over many years and is consistent with the general EMS employment data. The department believes strongly that all genders and ethnic backgrounds should have opportunities in EMS, and encourages all students to apply and consider careers in emergency health. This effort is most notable in the advising for general students that is performed by Gary Williams. He often finds students who are interested in emergency health but perhaps did not initially feel comfortable declaring as a major.

Due to political changes, the number of students (undergraduate and graduate students) originating from Saudi Arabia has decreased over the past five years. We currently expect no further students from Saudi Arabia in future years given the lack of funding from their country.

Graduate Enrollment and Degrees

Enrollment in the graduate program has been consistent over the past five years at approximately 30 students, with an average of 50% being online students. Online students are more likely to be part-time. The past two years has seen an increase in graduate students coming from the UMBC Health Administration and Policy Program (HAPP). The graduate program has also seen a decrease and now cessation of graduate students originating from Saudi Arabia as the funding for their out of country education has ended.

Graduate Demographics

The graduate program has a higher percentage of female students (40%). The increase in students coming from HAPP are also more likely female and interested in the Epidemiology and Preventive Medicine Track of the graduate program. Students in the graduate program are also likely to be more diverse with approximately half of students reporting minority race. Students taking online classes are more likely to be of Caucasian descent versus on campus students which are more likely to report African, Hispanic or other International descent.

STUDENT ADVISING

Undergraduate Student Advising

Undergraduate advisement is conducted by Dwight Polk for the paramedic track students and Diane Flint for the management track students. Mr. Polk and Ms. Flint make themselves available for extended office hours for three weeks as soon as the registration system is made available for class registrations. Therefore, there is advisement conducted in the fall and spring semesters. However, all EHS faculty maintain an open door policy so student advisement, both in terms of academic progress at UMBC and future career goals, is available and ongoing throughout the year.

Additionally, Mr. Polk and Gary Williams participate in almost all freshman and transfer student orientation sessions and thus advise new students as well who have already chosen EHS as their major or have some general interest in health services. Dwight Polk serves as the Academic Advisor to the Pi Kappa Phi Fraternity and provides another opportunity to mentor students from the general University population. This advising opportunity assists students with a personal interaction regarding academic issues, major/minor changes, and career options.

Two classes offered by the department serve in part to help students discover EHS as a career and their career path. EHS 115, Medical Terminology taught by Gary Williams, and EHS 200, Introduction to Emergency Health Services, are courses often taken by non-majors and serve to introduce students to the field. It is common that students in this course who are majors will engage the professors in questions related to their academic pathway. Additionally, and frequently, non-majors change to become EHS majors or minors as a result of taking EHS 200 and becoming interested in the field.

In addition, the Chair, Dr. Jenkins, maintains an open-door policy for undergraduate students seeking additional advising. This often takes the form of general career advice surround pre-professional programs and medical school. This is especially important given the number of our students and graduates who are also pre-professional (13% of undergraduate and 20% of graduate alumni matriculate to professional schools) in our latest survey.

Graduate Student Advising

The graduate program of the Department of Emergency Health Services has only two faculty whose primary responsibility is to graduate students (Bissell and Jenkins). In terms of general advising and progressions management, these two divide equally the students who are in the management and preventive medicine tracks, as well as the emergency management certificate program. Dr. Walz provides the same services for the students in the education track.

Advising consists of program orientation for new students, discussion of career and learning goals, joint decisions regarding courses to take and in which order, and management of the students' progression toward graduation. Each student's performance is reviewed at the end of each semester and considered before registration is finalized for the next semester's courses. Any deficits or trends that might lead to trouble are caught as early as possible, and the advisor begins with the student a discussion of plans for remediation. In some cases, more than one faculty member may be working with a given student to help overcome barriers. For online students, advisement is accomplished by a combination of email and phone calls.

Beyond this, the department takes seriously the mentorship role that faculty members fulfill, and all maintain an "open door" policy for discussing with graduate students a variety of issues related to their academic and career lives, and work as diligently as possible to help students overcome barriers they may have to achieving their goals. With foreign students, this also includes significant time spent with students helping them raise their spoken and written English to a professional level. While EHS faculty are not English professors, they recognize that the ability to express oneself well in English is important in many parts of the world if one wants to make an impact and achieve personal goals. Part-time instructors, likewise, are all encouraged to provide insightful and concrete feedback to all students, and frequently enter into mentorship activities when there is a consonance of interests between the instructor and student. The department also reaches out to alumni to provide guidance and openings to students to find good matches; feedback reveals that both students and alumni benefit from and appreciate this arrangement.

On-campus students frequently speak with their advisors face-to-face. Distance students conduct most of their communication via email, but faculty also make frequent use of the telephone to personalize the conversations. It is not unusual for faculty members to give their personal phone numbers to students who cannot communicate during normal business hours.

FINANCIAL SUPPORT FOR GRADUATE STUDENTS

The Graduate School supports one graduate research assistant (GRA) per year for our department. During most of the last seven years the department has been able to support between three and five students per year with outside faculty research or project funding

Successful support of graduate students has been mostly found in the fields of emergency public health, disaster health and policy. EMS, emergency management and EMS education remain challenging arenas to find funding supports for GRAs. Financial support from the EMS industry can at times be challenging, and federal support for traditional EMS research in the prehospital environment through traditional mechanisms such as the National Institutes of Health and the Department of Health and Human Services is nearly non-existent.

It is to this end that Drs. Bissell and Jenkins have successfully found GRA positions for students in the Baltimore City Health Department and Maryland DHMH through a partnership with MIPAR. In addition, the new contract with DHMH and CDC to provide online education for first responders in high consequence disease also provides for a funded GRA position.

At this time, the highest yield funding sources for GRAs continues to be in contracts with health departments, state government and federal disaster and public health contracts and grants. Drs. Bissell and Jenkins plan to continue their efforts to recruit funds and placement for graduate students. Just this past month, the EHS Department has also generously received a GRA funded from the School of Public Policy in a show of goodwill as a result of the new joint PhD in Public Policy, Emergency Services Concentration.

It is recognized by the department with the enrollment of our first PhD candidate in the Emergency Services Concentration of Public Policy that improved efforts will be necessary to obtain funding and recruit students. Given the anticipated faculty transitions occurring, we are hopeful that new additional graduate faculty will assist in the development of such funding opportunities.

STUDENT RESEARCH

Undergraduate Student Research

Faculty also routinely serve as mentors for one or two independent study students each semester and actively participate in the senior capstone project. EHS 430, Research Methods, is required for all EHS undergraduate students.

Currently two of our undergraduate students, Haley Bast and Anton "Matt" Yanker are preparing submission to the Undergraduate Research and Creative Achievement Day (URCAD). Both of these undergraduates are also preparing manuscripts based upon their work in international medicine and injury epidemiology respectively. Dr. Jenkins serves as the mentor for these students. Moving forward, it is encouraged by all faculty who participate in research to request funding for one Undergraduate Research Assistant and to elicit participation from one undergraduate for each of their projects. Other mechanisms for undergraduate participation may include the Senior Capstone or Independent Studies.

Graduate Student Research

The two most active faculty researchers in the department (Bissell and Jenkins) have made it their practice to involve graduate students in their research whenever possible. Graduate students are given an option of thesis or capstone, with approximately 1-2 students choosing to complete a thesis each year. Students completing a thesis are encouraged to compose their work in a fashion that lends itself to publication of 1-2 articles in a peer-reviewed journal.

The majority of thesis producing students are mentored by Drs. Bissell and Jenkins given that these students are in the Epidemiology and Preventive Medicine track. Given that Dr. Bissell also leads the Graduate Program, and Dr. Jenkins is Chair, the available time to mentor students can be a challenge. In light of the new joint Public Policy, Emergency Services PhD, the department would benefit from additional graduate faculty to allow appropriate availability of mentors.

Currently our graduate students and GRAs share one small office that is without a computer. Appropriate allocation of office for GRAs and students would certainly improve and assist in developing a culture of collaborative and interdisciplinary research as our students often come from varied backgrounds in health administration or clinical paramedicine.

Please refer **Appendix E, Graduate and Undergraduate Student Research Projects.**

FACILITIES

Office Space

Currently full-time faculty each have an office with some additional space need for storage. Each full-time faculty member has an individual office and is provided with a locking metal storage cabinet in the hallway adjacent to their office for additional storage.

Office space for GRAs, RAs and TAs is currently very limited. All student assistants must share one office and computer that are in a different wing of Sherman Building than the remainder of the faculty offices.

There is one small, shared office for adjunct faculty. Part-time faculty bring whatever materials they need with them and maintain class records and student assignments at their home or outside office. If part-time faculty members need to meet with a student outside of class, they try to use the general-purpose room, 318, the department conference room, or borrow an available faculty office. It is not uncommon to find a part-time faculty member sitting in the department's main office waiting area or out in the hall if early for class.

Administrative Space

Due to requirements for accreditation of the Paramedic Track, the department is required to store required records for five years' time. Taking into account the additional medical supplies and equipment required for the Paramedic Track, the storage needed requires the department unfortunately to utilize a large amount of hallway space. The department is hopeful for the passage of the additional space request by the Space Committee to allow for the acquisition of additional room in Sherman Floor 2.

The department reconfigured the main office area a few years ago to provide easier access to the department's copier and provide a waiting area for visitors. However, this eliminated a cubical that was available for use by part-time faculty. The department now has a conference room (Sherman 354) that is shared with the Learning Resource Center. The two departments coordinate the use of shared space and also help each other out with other occasional needs regarding photocopying, and basic supplies.

Room 318

Room 318, located on the third floor bridge between A and B wings of Sherman Hall, was a small classroom created when a larger space was divided to form the department's office and the chair's office. This room has been assigned to the department since our last re-accreditation as the accreditation agency cited the department for lack of clinical laboratory space. Since that time it has evolved into a multipurpose room being used for clinical training, conferences, small classes, and graduate seminars.

Room 303

The department has an active professional and continuing education department (PACE) that generates auxiliary funds for the department, which helps the department meet costs that are not provided through the university's departmental funding process. This enterprise is housed predominately in Room 303, which had been a special use classroom. The PACE operation is making full use of this space.

Graduate student space

As a result of the recent space reallocation process, the EHS department now has Sherman Hall 337 to use as an office space for graduate assistants. The addition of this space has made a significant difference for graduate assistants and as a place where adjunct faculty can meet with students.

Laboratories

There is limited space for clinical laboratory practice. The national accrediting body, noting a lack of sufficient laboratory space, has repeatedly cited the undergraduate program. This deficiency has been remedied through the repurposing of Room 304. We now have several fully computerized life-like mannequins to use in clinical procedure training without having to put actual human beings at risk, and we are now closer to being in compliance with our national accreditation organization. Because of tight space, the use of this new facility has to be carefully coordinated.

Equipment

Because there is no space, the department is unable to provide computer support and specialized software to students. Such resources must be obtained from individual faculty members if available. The department is currently developing a multi-year teaching equipment replacement and upgrade program for the paramedic track. The plan is to utilize the university equipment-financing plan to spread costs over a five-year period. It is anticipated that \$5000 will be earmarked for equipment each fiscal year provided there is no reduction in the department's operating budget allocation.

Pending Space Request

The department is hopeful for the passage of its pending space request to acquire additional rooms in Sherman Hall, Floor 2, A-wing. This space would achieve multiple educational and administrative goals for the department. This space would also allow for potential construction of a new clinical simulation laboratory, pending funding, that has been deemed of marked importance by paramedic accreditation bodies. This proposed clinical simulation laboratory would also serve to attract grant support for simulation funding. Along this research line, the EHS Department has submitted two interdisciplinary grants with the Department of Information Systems in the field of affective computing and clinical simulation.

CLIMATE

Recent Faculty Climate

The EHS department has struggled the last eight years or so, and we are now working to improve both our overall situation and our "climate". We are in the process of rebuilding and creating a more interactive and interdependent working climate as we move into the third cohort of faculty and staff members, counting from the initiation of the EHS department in 1980. The hard times experienced between the departures of faculty members Dean, Krumperman, and Maguire and the onset of calendar year 2016, has left this department faculty and staff exhausted and feeling under supported. The pure exhaustion of constantly being asked to do more with less led to a kind of "hunker-down" mentality, that kept us functionally meeting our responsibilities but without the enthusiastic "whole team" interdisciplinary attitude and behavior we had exhibited from about 1995 to about 2007. Of course, the 2008-12 recession and the subsequent loss of external funding sources during that period accentuated our frustrations.

It is important for campus leadership to know that we are now in the process of reinventing our intradepartmental relationships and finding new energy and enthusiasm for exploring new ways to meet the needs and challenges that will be facing the department in the next 15 or so years. One of our strategies is to collaborate more with fellow departments here at UMBC, particularly visible now with our growing interaction with the faculty and students of the Sociology/HAPP program, and the newly developed collaboration with the Public Policy PhD program. This later development will provide us with more than just an opportunity to guide our students into a collaborative in-house PhD program for our students, but will also give us a competitive advantage in the broader market in which students in our field are increasingly looking for PhD-level skills and degrees.

Obtaining the critical mass of necessary graduate faculty has been a challenge. For the majority of the past five years, the graduate program has primarily been constituted by one full time faculty member (Bissell) who is also the Graduate Program Director (and also teaches the undergraduate research methods course) and a large number of adjunct professors who are experts in the field and practice nationwide. Dr. Walz teaches three education track graduate courses and manages the students in the education track. Dr. Jenkins is now teaching one of the core graduate courses (EHS 632 Disaster Health Services) that plays a major role in helping graduate students combine the concepts and tools of emergency management with those of public health. Dr. Bissell teaches EHS 609 Guided Research, 630 Issues Analysis and Proposal Writing, and either teaches or co-teaches all of the disaster/emergency management courses except for EHS 632, as previously mentioned. He also supervises all the adjunct instructors who teach the management, finance, planning and human resources courses, and has chaired almost all of the Master's thesis committees over the last two decades. As our graduate faculty members are moving into retirement age, we expect that we need to anticipate the process of evaluating what our future needs will be in the graduate faculty. It is clear that our needs cannot be met by replacing senior-level leadership, research and teaching roles by hiring a single junior faculty member. It is urgent that the Department and the campus begin work now to assure a smooth and effective transition.

The changes we have described in the previous paragraph have been accompanied by new leadership in the department, with focus on the whole department, including our PACE Program, working together to develop and refine new offerings, using the skills of all of us.

Recognizing the opportunities we have with upcoming changes, and taking advantage of the uptick in faculty-staff enthusiasm and energy, we are initiating a process of evaluating trends and needs for the next two decades, and will be using the insights gained from this process to prioritize the skills we will be looking for in new faculty, as well as offerings we can now start developing in the PACE program. The sequelae of climate change are expected to bring about huge changes in health status and environmental emergencies in many parts of the country and the world at large, and our department may be well poised to address some of these issues through research, teaching, and targeted externally funded research and service projects. UMBC has numerous faculty in other departments who could productively collaborate with our department's new research directions.

Student Climate

Moving now to the question of the esprit de corps of our students, we think it is fair to say that our students have traditionally been among the most active, energetic, and engaged student groups on campus, and continue to be so. This may be due to the characteristics of people who purposely go into dangerous situations in order to be of assistance to others, and part of it may be embedded in the French term "esprit de corps"...in that our students at both undergraduate and graduate levels, whether oriented to emergency clinical work, public health work, or emergency management, ***all see themselves as being part of an organized group of people, to be found around the globe, who strive to make life better for others.*** Thus, more so than is likely to be found in a department focused on a single academic specialty, our students and faculty find themselves drawn together by common values, goals and objectives, many of which are not self-centered. Our international students come from the same philosophical background, in this context, and find it easy to be accepted into the work and struggles of our domestic students, rapidly forming a strong bond.

Faculty members in our department, like in any department, share their work and experiences with our students, and often involve them in field training and hands-on experiences that do not show up in credit reports or academic journals but serve to help the students and faculty to share a common core of values and experiences, which helps the bonding process.

One area of student engagement that we have targeted for improvement is in the realm of interaction between our undergraduate and graduate students. It is rare that they take a class together. Although we open many of our graduate seminars to attendance by undergraduates, few attend, because many of them have clinicals at the same time as the graduate seminars. Another barrier is that many of our graduate students attend by distance, while all of our undergrad students are on campus. Thus, we are seeking alternative ways of building interaction between our undergraduate and graduate students.

Department Transition

Our department is currently in a marked state of change, with considerable opportunity embedded in those changes. We have a new chair as of this year and the ***majority of our very small faculty are retiring in the next five years***. Knowing that two senior tenured faculty and two non-tenured faculty are likely to retire in the next 5 years, gives us the opportunity to evaluate what educational and research trends are likely to be, and then accordingly review and revise the skill sets we will be looking for in new hires. Additionally, in terms of research, our new chair has the skills and a record of accomplishment to deepen our already strong publication portfolio in the areas of emergency public health and disaster health services. Altogether, these new forward-looking opportunities are raising the levels of enthusiasm and energy in the department as a whole.

PROFILE OF GRADUATES

Undergraduate Program Graduates

The total number of EHS undergraduate majors over the past five years has sustained large fluctuations over the past five years. The number of undergraduate graduates has ranged from 6 in AY2014 to 35 in AY2013. The Paramedic Track graduate number has most recently increased to 11 with anticipated graduating students at 13 this year. Management Track graduations also met a low in 2013 and recently been stable around 5 to 6. It is a major priority of the department to maintain Paramedic Track graduations at approximately 20 and raise management track graduates to the same number. Both of these goals are discussed more in detail in the Future Directions and Strategic Plan Section.

Undergraduate Major (Paramedic and Management) Graduates 2012-2016

<i>AY</i>	<i>Paramedic</i>	<i>Management</i>
AY 2012	16	6
AY 2013	20	15
AY 2014	3	3
AY 2015	5	7
AY 2016	11	6
AY 2017 anticipated	13	5

The alumni survey indicated that nearly 73% of *management graduates* are working in an emergency health or emergency management related field. The chart below indicates the distribution: (see Next Page)

Undergraduate Management Track Graduates 2012-2016

Occupation	Percentage of Respondents
Paramedic	17%
EMS supervisor or manager	17%
Other emergency service	11%
EMS education	11%
Allied Health or hospital	17%
Graduate school	17%
Research	6%
Other	14%

*PLEASE NOTE: Percentages are greater than 100% due to the fact that our graduates often simultaneously fulfill multiple roles (e.g. Paramedic and Graduate School, EMS Educator and EMS Manager, Emergency Physician and EMS Educator and Researcher, etc.)

Graduate Alumni Profile

The department conducted interviews with visiting alumni during the 2016 UMBC50 Alumni EHS Celebration as well sending out a survey to our graduate student listserv. We received a total 16 responses from Graduate Program alumni in the past five year. The largest cohort of Graduate Program Alumni in the past five have found positions in academia through university level positions and many are actively performing research. The next most common placement for graduates is in positions of emergency management. It should also be noted that 30% continue with clinical work either as physicians or paramedics. The full list of survey respondents may be found in **Appendix C, Graduate Program Alumni Placement.**

Graduate Program Alumni Placement

Occupation	Percentage of Respondents
Academic/Researcher	29%
Emergency Management	19%
Paramedic or Paramedic Supervisor	14%
Physician	14%
Healthcare Management	10%
Public Health	5%
Law	5%
Other	4%

BUDGET

The department's operating budget presents challenges for the department's goal of providing a quality and contemporary educational experience. The operating budget, like that of most other departments on campus, has not increased. In reality, it is decreasing yearly due to inflation.

The main expense for the Paramedic Track is clinical training equipment, both capital items and disposable items. Much of the current educational equipment has been in use since the formation of the department or the result of donations, often of "hand-me-down" equipment from local services. The one major addition to the department has been an ambulance simulator and MegaCode Kelly donated by the R Adams Cowley Shock Trauma Center Board of Visitors. In 2009, the department received permission to impose a clinical lab fee (\$50) on students enrolled in the introductory EMT program and one course in both the fall and spring semesters of the junior year paramedic classes.

Currently the department and its Professional And Continuing Education (PACE) program are operating in deficit. ***Our department's current annual operating deficit has run approximately 30-40k for the past 15 years.*** The department has undertaken an extensive budgetary review the past two months to determine both the etiology of the budgetary deficit and the feasibility of earning increased profits from PACE to offset this deficit. This amount has in the past been augmented through the PACE program at approximately \$20-40k per year. The sources of this continue annual budget deficit include:

- the expense of running the paramedic clinical program
- increased adjunct expense
- department self-funding for a portion of two faculty positions

After the ***PACE budget analysis of the past five years***, it has been determined that the PACE deficit is likely the result of two large one-time expenses in research infrastructure (CEEDR) and a paramedic cardiac monitor. The PACE personnel, expenses and revenue have stayed largely consistent over the past five years.

The major source of revenue for the EHS Department has been the establishment of PACE which is an entrepreneurial endeavor formed to generate funds needed to fill the financial gap between university funding and department needs. The ***PACE operation remains a viable source of additional funds***, having routinely provided \$20-30k per year to the department for over a decade. Considerable efforts and planning are current occurring to ensure the development of new online course and initiatives for PACE.

The EHS Department and PACE have a longstanding role in augmenting the necessary funding for the Paramedic Track given that clinical health educational programs are inherently expensive to run with medical equipment supply and laboratory needs. It is our desire to work with the Dean's office to explore options for future solvency and funding stability for the educational programs.

EVALUATION

In the Fall of 2016, the faculty was asked to engage in a SWOT analysis of the department with special emphasis on the undergraduate management track and the graduate program. Below are the results of that analysis, presented in a non-ranked order.

Strengths

Department

- Professional And Continuing Education (PACE) office within EHS Department
- Prestige of clinical and CCEMTP programs
- Strong public service component
- Location in Baltimore-Washington corridor
- Proximity to federal governmental agencies and healthcare networks such as ASPR
- Collaboration with other programs and agencies in the area
- Placement in CAHSS and broad interdisciplinary support from other departments, especially HAPP, Sociology, and Psychology
- Opportunities for improved financial support from PACE through the development of new and innovative continuing education programs for working professionals and utilization of PACE for governmental contracts

Faculty

- Highly experienced
- Ongoing research and publication, even in times of teaching and administrative overload
- Collaborative approach with students and other departments
- Involvement with EMS and EMS organizations at local, state, national and international levels
- Research opportunities for interdisciplinary work with other social science departments

Students and Alumni

- Broad backgrounds and diverse students (international, diverse specialities)
- EMS experience
- Maryland tuition reimbursement program
- Academic Common Market
- Close knit cohorts of students and alumni
- Education and internships provides for opportunities in federal and national security positions
- Our students are often hired into leadership positions in the industry
- Alumni performing well in leadership positions

Curriculum

- Liberal arts education for professional administrators, managers, and researchers in the healthcare field

- Internship program with high percentage of successful hires
- Balance and interaction between clinical and management tracks
- Flexibility of graduate program
 - Online and On campus
 - Focus on application of science to EMS management
- Accreditation of Paramedic Track

Graduate program

- Use of subject matter experts and applied part-time faculty
- Niche: Overlap of public health and emergency management
- Flexibility of course delivery
- Only full EHS program available at the graduate level
- Excellent national and international reputation
- Attracts diverse national and international students
- New Emergency Services Concentration in Public Policy PhD, with four applicants

Climate

- Networking
- Close-knit faculty and alumni provides for increased opportunities for internships
- Advising
- Student oriented

Weaknesses

Space

- Lack of space and technology, in addition to old and outdated facilities
- Current lack of clinical simulation laboratory space (awaiting final recommendation from space committee)

Budget

- Stagnant operating budget
- Operating budget not sufficient for annual teaching needs
- Long-term operating budget shortfall due to cost of Paramedic Track and faculty salary support by the department

Faculty

- Size of department, small faculty size
- Not enough current faculty to teach and mentor students in the new Public Policy, Emergency Services PhD program
- 1 confirmed senior, tenured faculty retiring in less than 2 years
- 2 other senior, tenured faculty potentially retiring in 1-4 years
- Large amount of adjuncts

Curriculum

- Difficulty completing pre-professional requirements and Paramedic Track requirements for graduation within four years

High cost of Paramedic Track

- Need for equipment, capital and disposable, medical devices, etc.
- Need for increased resources to adequately teach clinical simulation to our paramedic students.

Limited undergraduate research

Program not housed on an allied health oriented campus

- Department does not share or benefit from synergies of being housed within a school or medicine or health campus
- Downtown campus less willing to partner on training, research and education efforts

Graduate program

- Need for large amount of adjuncts
- Some courses are outdated and need revision
- Very limited graduate student work space (1 small office)
- No additional resources (faculty, administrative, or technology) have been allocated for the new PhD program
- Dependence on external funds with poor predictability

Opportunities

- Increase enrollment of all Tracks and Graduate Program
- URCAD involvement
 - This Spring 2017, two undergraduates are applying
- Pre-professional student recruitment
 - Pre-medicine, pre-nursing, pre-physician assistant students are often interested in our program
- Recruitment of community college transfers for the undergraduate management track
 - Articulation agreements with Howard Community College, Anne Arundel Community College, Community College of Baltimore County
- Relationship with HAPP
 - Students from HAPP with interest in the Graduate Program
 - Research shared interest and synergy
- Increase research and grants for Clinical Simulation Laboratory to provide for synergy with Paramedic Track and need for simulation resources
- Restructuring of Paramedic Track curriculum to allow completion of pre-professional requirements within four years.

- Recognized call for online undergraduate Management Track in market analysis at conferences
- Access to local, state, and federal agencies
- Future funding opportunities related to complex disasters/catastrophes
- Growth of EMS as an international focus of planning and implementation
- Growth of requirement for a degree for promotion in EMS and fire service
- Growing funding for emergency public health

Threats

Paramedic Track

- Equipment and supply costs to operate the Paramedic Track
- High number of TAs needed in Paramedic Labs

Management Track

- Low enrollment numbers in the Management Track since increase in Paramedic Track retention

Budget

- Faculty salary support provided by the department
- Faculty salaries lower than industry standard
- Paramedic Track does not benefit from funding generally available to other paramedic programs across the state such as those in community colleges
- Low operating budget that does not meet the minimum funding needs to run the department causing an annual budget shortfall of approximately \$40,000
- Decreasing faculty and staff morale due to increasing budget restraints

Faculty Transitions

- The entire faculty, except for one instructor and the Chair plan to transition or retire within five years
- No current faculty who could assume Chair position in five years
- No current faculty who could assume Graduate Program Director position in Fall 2018 after the current director's planned retirement
- No current faculty who could assume the Management Track Director position when or if the current director finishes her dissertation

Curriculum

- Difficulty completing pre-professional requirements and Paramedic Track requirements for graduation within four years.

PACE

- Need for new, innovative products and programs for the PACE Program
- No online payment system
- No online educational delivery system

FUTURE DIRECTIONS

The current strategic priorities and planning initiatives have been developed with the intent to address the two major challenges in the department for the next five years. These *two major challenges are the ongoing budget shortfall that occurs every year as a result of the paramedic track expenditures and salary support and the faculty transitions or retirements of the majority of our department*. The department has developed these action items and plan in conjunction with the goals of our mission and vision to serve our students, our university and the community in emergency health.

Strategic Priority: Ensure solvency and financial stability of the undergraduate paramedic track

- Action Item: Determine current paramedic track expenditures over the past three years.
 - Collect budget data and expenditures for the past three years of the Paramedic Track
 - Perform regular inventory of disposable and other medical supplies
- Action Item: Assess expenditures and determine which are necessary for continuation of the program given the current vision to develop innovative pedagogy and educate future emergency health leaders
 - Forecast future expenditures for all budget categories including supplies, accreditation expenses, clinical laboratory cost and medical equipment
- Action Item: Assess paramedic curriculum and laboratory time for opportunities to improve teaching efficiency and number of courses required
- Action Item: Develop three-year budget cycle for the program taking into consideration the short and long term budgetary needs such as disposable, long term and capital expenditures needed.

Strategic Priority: Ensure adequate faculty staffing for undergraduate and graduate programs

- Action Item: Receive feedback from Dean regarding faculty hiring plan
 - Arrange regular monthly meetings with Dean's office
- Action Item: Carry through the Faculty Hiring Plan as described above to begin hiring process for transition of the majority of our faculty.
 - Submit search request for a Senior and Junior faculty hire February 2017 to start Fall 2018.
- Action Item: Explore the concept of using some of the new EHS/Public Policy PhD students to co-teach or fully teach some of our courses, as part of their PhD program

Strategic Priority: Increase undergraduate Management Track enrollment

- Action Item: Increase Management Track Enrollment
 - Continue and strengthen partnership with community colleges
 - Direct recruitment of community college paramedic students
 - Continue the development of articulation agreements

- Action Item: Evaluate Management Track curriculum
 - Ensure its contemporary focus
 - Adding and dropping a small number of course requirements
 - Better usage and articulation with appropriate courses offered by other UMBC departments
 - Establish dedicated internship sites at appropriate local, state, and federal agencies
- Action Item: Deliver management track courses online
 - Develop path for transfer and working students to take Management Track curriculum online
- Action Item: Advertise Management Track to currently practicing paramedics who desire to finish an undergraduate degree
 - Booth advertise at state level conferences
 - Booth advertisement at national conferences
 - Community college visit days by EHS faculty

Strategic Priority: Increase Paramedic Track Enrollment

Paramedic track enrollment is capped at 25 junior year students due to availability of laboratory faculty, laboratory space, and external clinical and field sites.

- Action Item: Maintain alignment of curriculum with National EMS Education Standards
- Action Item: Maintain CoAEMSP accreditation of program
- Action Item: Demonstrate state of the art pedagogy and available learning technologies to recruit students who would otherwise choose community colleges that may have these resources
 - Development of clinical simulation laboratory
 - Ensure adequate funding for laboratories through PACE and ongoing grant initiatives
- Action Item: Advertise Paramedic Program to high school students
 - Develop marketing plan for Mid-Atlantic high school student recruitment, including those southern states who participate in the Academic Common Market, resulting in in-state tuition.
 - Develop relationship with pre-professional programs to ensure that these students consider EHS
 - Develop pathway by which pre-professional students may finish Paramedic Track and prerequisites within four years

Strategic Priority: Increase Graduate Program enrollment

- Action Item: Evaluate Graduate Program concentrations to ensure that they are meeting the needs of students
 - Perform market analysis of students seeking emergency health graduate degrees
- Action Item: Work within the university to provide pathway for students in other departments such as pre-professional or HAPP to continue with graduate school.
 - Meet with HAPP faculty and advisors to discuss continued opportunities for those students to continue graduate curriculum in EHS

- Action Item: Ensure continued interest in Emergency Services Concentration in Public Policy PhD.
 - Advertise new Emergency Concentration Public Policy PhD program concentration. Start with formal announcements, then contact publishers of college/university guides. Educate personnel in the UMBC Graduate School and the Public Policy program so that they can effectively inform potential students of this new offering.

Strategic Priority: Enhance research by faculty and students

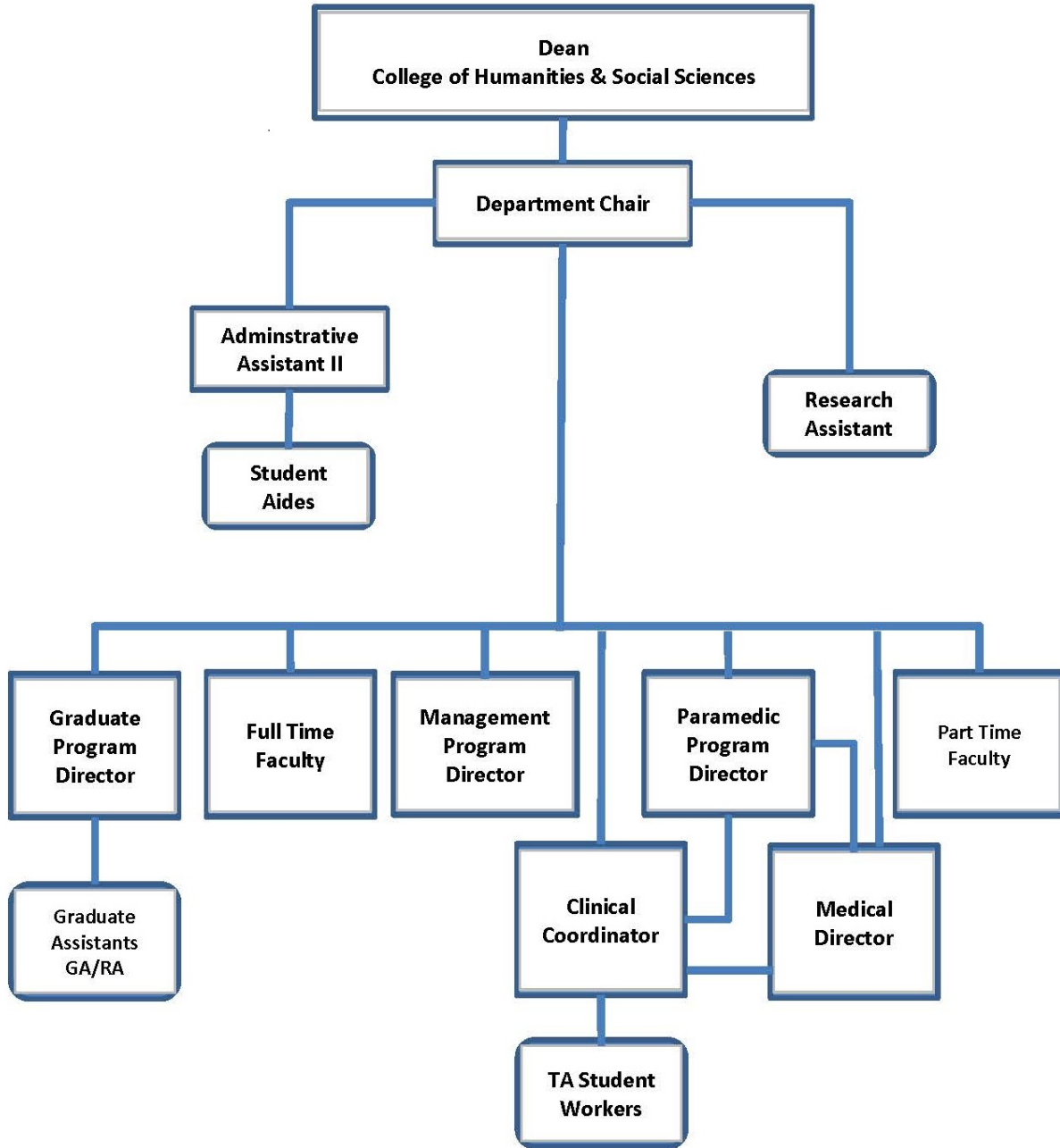
- Action Item: Develop research agendas/plans for each faculty member
 - Examine long-term trends and resulting research needs
 - Team with MIPAR to seek external funding and project management
 - Participate in national committees to keep abreast of research needs and funding opportunities
 - Work with Dean and Provost's offices to ensure funding for faculty research and travel
- Action Item: Increase student participation in research
 - Encourage students to seek publication before graduating
 - Provide periodic presentations of faculty research and collaboration opportunities
 - Encourage undergraduate students to participate in Undergraduate Research Program sponsored by the Office of Undergraduate Education
 - Encourage faculty to require research projects in their classes

Strategic Priority: Continue to deliver professional and continuing education through PACE to improve ability of the department to provides funding for the annual operating budget shortfall

- Action Item: Development of new educational programs
 - Perform curriculum market analysis at conferences
 - Continue development of continuing education courses with MIEMSS certification
- Action Item: Develop online educational delivery system
 - Work within TechSmith Relay system and UMBC technology department to develop online educational delivery model for off campus, non-UMBC clients
- Action Item: Develop online payment model for PACE
 - Allocate initial set-up funds for online payor system

Appendix A: Organizational Structure

Department of Emergency Health Services - Organizational Chart



Appendix B: Undergraduate Management Track Alumni Placement 2012-2016

KEY	2012	2013	2014	2015	2016	
Name	Federal	State	Local	Fire & EMS	Other	Unknown
Alageel, Mohammad S					Saudi Arabia	
Aljubair, Fahad Abdulleh M					Saudi Arabia	
Amornkitwanit, Phongphat						X
Bentsen, Walter						X
Bryson, Katie W		X				
Bumejdad, Husain M. J. A.					Kuwait	
Case, Lee R				X		
Crisostomo, Shane C				X		
Enzler, Gregory C				X		
Fogarty, Carson E					Carroll County PD	
Garman, Scott	X					
Ge, Liam T						X
Gonzalez, Luis-Pedro	X					
Harbitz, Alexander				X		
Haskin, Danielle M			X			
Johnson, Sean						X
Lacey, Scott					PA School	
Lambert, Michael L			X			
Long, Aaron M		X				
Lowman, James						X
Manzoor, Saad T		X				
Miller, Ryan M				X		
Nguyen, Ngac D						X
Nunn, Randolph	X					
Panduro, Judith		X				
Patelunas, Robert L						X
Placek, James						X
Richardson, Naia G						X
Sarfo-Mensah, Lois K					Private Enterprise	
Swaminathan, Sambavi		X				
Tawasha, Ghneim Y						X
Telang, Aniket S		X				
Tingley, Christopher					Peace Corp	
Traylor, Kenneth		X				
Wakar, Christine						X
Warchal, John A		X				
Young, Christopher D	X				Red Cross	

Appendix C: Graduate Program Alumni Placement Survey Results January 2017

Erin Wittman (2015)	Faculty, Temple College Med student class 2019 Texas A&M Coll. Med.
Kevin Pearl (2015)	Emergency Physician & EMS medical director Talbot County MD
Adnan Alsulami (2016)	Lecturer, Kind Saud Bin Abdulaziz University for Health Sciences, Saudi Arabia
Jon Teter (2014)	Program Administrator Infection Control, JHU Hospital Infection Control Epidemiologist, Florida DOHealth
Ilwoong Woo (2014)	Paramedic for AMR in California Researcher, Seoul National University Hospital, Seoul, South Korea
Zainab Alqudah (2015)	Instructor, Jordan University of Science and Technology, Irbid, Jordan
Oluremi Adejumo (2015)	PhD student, Johns Hopkins University School of Nursing
Michele Burkhammer (2016)	Paramedic, training program coordinator, Montgomery County MD
Jeremy Goldman (2011)	County Manager and Director of Emergency Services Dorchester County, MD
Joseph Anelli (2010)	Emergency Response Planner, Maryland State Health Department
Ali Aledhaim (2009)	Completed PhD Morgan St U; Post-doc researcher U of MD School of Medicine/Shock Trauma
Margarita Tsionsky (2012)	Medical student, Edward Via College of Osteopathic Medicine, Blacksburg, VA
Sandra Medina (2016)	Clinical Coordinator, Blinn College EMS Program, Texas
Nathan Wheelock (2015)	Acting Commander (Lieutenant) in Aviation Command, Maryland State Police
Jenelle Masterson (2012)	Emergency Preparedness Coordinator, Cities of San Mateo and Foster City, California
Jose V. Nabel (2014)	Assistant Professor of Emergency Medicine, University of Maryland, Baltimore

Appendix D:

Conference Presentations

EHS faculty are frequently presenters at academic conferences nationally and internationally. This includes both tenure and non-tenure track faculty.

Bissell

National Preparedness Summit

Atlanta, GA April 2014

Beyond the Metropolitan Statistical Area: A Statewide Approach to Public Health Risk Assessment

Jenkins, Bissell

World Association of Disaster and Emergency Medicine

Toronto, Canada, April 2017

Development of an Education Program for First Responders on High Consequence Infectious Diseases

Polk

37th Annual Arrowhead EMS Conference & Expo

Duluth, MN, January 2017

"De-Escalation Techniques – Let's Talk About It"

"Youth Suicide: When Kids Do The Unthinkable"

"Crisis in the Field: Managing Behavioral Emergencies"

"The Unspoken: Child Abuse and Neglect"

40th Annual "The Summit" EMS & Emergency Services Conference

Provo, UT, November 2016

"Perinatal Behavioral: When New Life Brings New Challenges"

"Line of Duty Deaths – When It's One of Our Own"

"Suicide – Not Your Typical General Session"

"The Many Faces of Alcohol – Your Life, Your Health"

Crisis Intervention Team (CIT) Training (Howard County Police Department)

Marriottsville, MD, June 2016

"De-escalation Techniques for LEOs"

Long Hot Summer Conference

Brooklyn Park, MN, March 2016

"Lessons Learned from a Dying Mother: From Provider to Caregiver"

"Ethics in Healthcare: Making the Right Choice"

"Youth Suicide: When Kids Do The Unthinkable"

"Crisis in the Field: Managing Behavioral Emergencies"

"The Unspoken: Child Abuse and Neglect"

Crisis Intervention Team (CIT) Training (Howard County Police Department)
Marriottsville, MD, January 2016

"De-escalation Techniques for LEOs"

39th Annual "The Summit" EMS & Emergency Services Conference
Salt Lake City, UT, December 2015

"Lessons Learned from a Dying Mother: From Provider to Caregiver"

"Depression and Mood Disorders"

"Dying to be Thin: Assessment and Management of Eating Disorders"

"Youth Suicide: When Kids Do the Unthinkable"

16th Annual Altru Healthcare Horizons
Grand Forks, ND, October, 2015

"Ethics in Healthcare: Making the Right Choice"

"De-escalation Techniques: Let's Talk About It"

Louisiana Emergency Nurses Association Annual Education Conference
New Orleans, LA, August 2015

"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"

Crisis Intervention Team (CIT) Training (Howard County Police Department)
Marriottsville, MD, June 2015

"De-escalation Techniques for LEOs"

Polk- North Dakota EMS Association - EMS Rendezvous
Bismarck, ND, April 2015

"Youth Suicide: When Kids Do The Unthinkable"

"Homelessness in America: No Place to Call Home"

"De-escalation Techniques: Let's Talk About It"

"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"

"Eating Disorders: Dying to be Thin"

The Long, Hot Summer Conference on Trauma and Emergency Care
Minneapolis, MN, March 2015

"Youth Suicide: When Kids Do The Unthinkable"

"Danger Zones: Responding to Violence Scenes"

"Ethics and EMS"

"I Believe...A Lifetime of Lessons Learned"

21st Annual National Collegiate EMS Conference
Baltimore, MD, February, 2015

"Provider Suicide: It's Not Supposed to Happen to Us"

South Carolina EMS Symposium
Myrtle Beach, SC, February 2015

"Ethics and EMS"

"Provider Suicide: It's Not Supposed to Happen to Us"

"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"

35th Annual Arrowhead EMS Conference & Expo (Arrowhead EMS Association)
Duluth, MN, January 2015

"Eating Disorders: Dying to be Thin"

"Ethical Decision Making: Making the Right Choice"

"Line of Duty Death: When It's One of Our Own"

Crisis Intervention Team (CIT) Training (Howard County Police Department)
Marriottsville, MD, January 2015

"De-escalation Techniques"

"Responding to Suicidal Individuals"

38th Annual "The Summit" EMS & Emergency Services Conference (formerly Prehospital
Emergency Care and Crisis Intervention)
Salt Lake City, UT, November 2014

"Crisis in the Field: Managing Behavioral Emergencies"

"The Many Faces of Alcohol: Your Life, Your Health"

"Down in the Dumps: The Depressed Patient"

"HIV and AIDS: Why Don't We Talk About It Anymore?"

"Mental Health Aspects of the Aging Mind"

"Psychosis and Schizophrenia: Not Your Typical Day at the Office"

Big Sky EMS Emergency Medicine Symposium
Billings, MT, November 2014

"Balancing the Volunteer Lifestyle"

"De-escalation Techniques: Let's Talk About It"

"Provider Suicide: It's Not Supposed to Happen to Us"

"Psychosis and Schizophrenia: Not Your Typical Day at the Office"

"A Look Back, A Look Ahead: Challenges Faced by EMS Providers"

13th Annual Life Star of Kansas Emergency Care Symposium
Topeka, KS, September, 2014

"De-escalation Techniques"

"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"

"HIV and AIDS: Why Don't We Talk About It Anymore?"

Nebraska Statewide EMS Conference

Kearney, NE, July, 2014

"Ethical Decision Making: Making the Right Choice"

"HIV and AIDS: Why Don't We Talk About It Anymore?"

"Provider Suicide: When It's One of Us"

"Homelessness in America: No Place to Call Home"

"De-escalation Techniques: Let's Talk About It"

"Mental Health Aspects of the Aging Mind"

Crisis Intervention Team (CIT) Training (Howard County Police Department)

Marriottsville, MD, July 2014

"De-escalation Techniques"

"Responding to Suicidal Individuals"

Concordia Trauma Education Symposium

Concordia, KS, April 2014

**Kinematics: When Things Go Bump in the Night"*

"Crisis in the Field: Managing Behavioral Emergencies"

"Geriatric Trauma: When Everything Old Is New Again"

Shawnee County Education Forum (Lifestar of Kansas)

Topeka,, KS, April 2014

"Crisis in the Field: Managing Behavioral Emergencies"

"I Believe: A Lifetime of Lessons Learned"

"Line of Duty Death: When It's One of Our Own"

Emergency 2014

Sioux City, Iowa, March 2014

"I Believe: A Lifetime of Lessons Learned"

"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"

"HIV and AIDS: Why Don't We Talk About It Anymore?"

Working Together: Emergency Services Midwest, Wisconsin EMS Association Conference

Milwaukee, WI, January 2014

"Provider Suicide: When It's One of Us"

"I Believe: A Lifetime of Lessons Learned"

"Kinematics: When Things Go Bump and Boom"

34th Annual Arrowhead EMS Conference & Expo (Arrowhead EMS Association)

Duluth, MN, January 2014

"Provider Suicide: It's Not Supposed to Happen to Us"

"Homelessness in America: No Place to Call Home"

"Good Grief!! A Look at Death and Dying"

Maryland EMS Leadership Symposium
College Park, MD, November 2013

"Provider Suicide: It's Not Supposed to Happen to Us"
"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"

16th Annual Red Desert Trauma Conference
Rock Springs, WY, June 2013

"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"
"Balancing the Volunteer Lifestyle"
"I Believe: Lessons Learned in 30 Years of EMS"
"Geriatric Trauma: When Everything Old is New Again"

Crisis Intervention Team (CIT) Training (Howard County Police Department)
Marriottsville, MD, June 2013

"De-escalation Techniques"
"Responding to Suicidal Individuals"

Iowa EMS Association Conference
Des Moines, IA, November 2012

"The Unspoken: Child Abuse and Neglect"
"Crisis Response-More Than Psychological Band-aids"
"I Believe: Lessons Learned in 30 Years of EMS"
"Homelessness in America: No Place to Call Home"
"HIV and AIDS: Why Don't We Talk About It Anymore?"

EMS Expo 2012
New Orleans, LA, November 2012

"De-escalation Techniques"
"Suicide: When Things Get Bad"

Firehouse Expo 2012
Baltimore, MD, July 2012

"Provider Suicide: It's Not Supposed to Happen to Us"
"Homelessness in America: No Place to Call Home"

Crisis Intervention Team (CIT) Training (Howard County Police Department)
Marriottsville, MD, July 2012

"De-escalation Techniques"
"Responding to Suicidal Individuals"

Fire Rescue Med Conference, International Association of Fire Chiefs
Las Vegas, NV, May 2012

"Provider Suicide: It's Not Supposed to Happen to Us"
"Line of Duty Death: When It's One of Our Own"

35th Annual ND EMS Association - EMS Rendezvous
Bismarck, ND, April 2012

"Adolescent Suicide: When Kids Do The Unthinkable"
"Things That Go Bump in the Night: The Kinematics of Trauma"
"Psychosis and Schizophrenia: Not Your Typical Day at the Office"
"The Unspoken: Child Abuse and Neglect"
"Crisis Response-More Than Psychological Band-aids"

Johns Hopkins School of Medicine, Division of Special Operations, (for US Immigration & Customs Enforcement)
Baltimore, MD, March 2012

"Law Enforcement Suicide: The Ultimate Suicide by Cop"

Johns Hopkins School of Medicine, Division of Special Operations, (for US Marshals Service)
Baltimore, MD, February 2012

"Law Enforcement Suicide: The Ultimate Suicide by Cop"

18th Annual National Collegiate EMS Foundation Conference
Baltimore, MD, February 2012

"Provider Suicide: It's Not Supposed to Happen to Us"
"HIV and AIDS: Why Don't We Talk About It Anymore?"

Prehospital Emergency Care and Crisis Intervention
Salt Lake City, UT, November 2011

"Mental Health Aspects of the Aging Mind"
"Crisis in the Field: Managing Behavioral Emergencies"
"Homelessness in America: No Place to Call Home"
"Geriatric Trauma: When Everything Old Is New Again"

Rescue Me Conference
Boise, ID, October 2011

"Crisis in the Field: Managing Behavioral Emergencies"
"If Helping Others Is So Easy, Why Can't We Take Care of Ourselves?"
"Adolescent Suicide: When Kids Do The Unthinkable"

15th Annual LEGAL International Conference of GLBT Criminal Justice Professionals
Las Vegas, NV, October 2011

"De-escalation Techniques"
"Things That Go Bump in the Night: The Kinematics of Trauma"

EMS Expo 2011
Las Vegas, NV, August 2011

"HIV and AIDS: Why Don't We Talk About It Anymore?"
"Homelessness in America: No Place to Call Home"
"The Last Straw: Stress in the Emergency Services"

Nebraska Statewide EMS Conference

Kearney, NE, July, 2011

"Things That Go Bump in the Night: The Kinematics of Trauma"

"Balancing the Volunteer Lifestyle"

"Psychosis and Schizophrenia: Not Your Typical Day at the Office"

"Dying to Be Thin: Assessment and Management of Eating Disorders"

"Suicide: When Things Get Bad"

Long Hot Summer EMS Conference (North Memorial EMS)

Brooklyn Park, MN, March, 2011

"Things That Go Bump in the Night: The Kinematics of Trauma"

"I Believe: Lessons I've Learned in 30 Years in EMS"

"Psychosis and Schizophrenia: Not Your Typical Day at the Office"

Working Together: Emergency Services Midwest, Wisconsin EMS Association Conference

Milwaukee, WI, January 2011

"Down in the Dumps-the Depressed Patient"

"Homelessness in America: No Place to Call Home"

"Balancing the Volunteer Lifestyle"

Appendix E:

Graduate and Undergraduate Student Research Projects

Haley Bast (In progress)

Issues in Honduras Emergency Medical Services and Potential Solutions. Paper in progress and URCAD application in progress. Mentor: Jenkins

Anton (Matt) Yanker (In progress)

Injury Patterns in Trampolines

Hanna Jardel (present)

Master's thesis proposal defense (2016) *Challenges of Managing Diabetes While Experiencing Homelessness*

Becca Scharf (present)

Master's thesis proposal defense (2016) *Queen Anne's County Mobile Integrated Community Health Pilot Program Descriptive Study: Disease Prevalence among Program Participants and Implications for Provider Training*.

Alaa Sairafi (2016)

Master's Thesis: *Jeddah's Red Crescent System: Job Satisfaction*

Abdulhadi Al Ruwaithi (2016)

Master's Thesis: *Dengue Infection in Jeddah: The Demographics of Infected People*

Jonathan Teter, MS, BA (2013)

Master's Thesis: *Hand Hygiene and Infection Control in Emergency Health Services*.

Alaa Al Amiry (2010)

Master's Thesis: *Methicillin-resistant Staphylococcus-aureus (MRSA) Prevalence Among Emergency Medical Technicians (EMT): Can Screening of Colonization Address EMTs as Carriers of MRSA?*

Graduate Student presentations, papers, articles, books, etc.

Justin Yurong (2015)

- 2013 - Yakima County Resuscitation Academy - High Performance CPR
- 2015 - Interior Alaska EMS Symposium - Turning the Alphabet into an Assessment

Jennifer Ryan (2011)

- Risk Assessment & Management: The Overlooked Component published in *Domestic Preparedness* in September 2013

- 2016 – Presenter at the Maryland Emergency Management Symposium – Resource Management; Next Steps for the Future

Jose V. Nable (2014)

Original Papers in Refereed Journals

1. Jeffery RM, Dickinson L, Ng ND, DeGeorge LM, **Nable JV**. Naloxone administration for suspected opioid overdose: An expanded scope of practice by a basic life support collegiate-based emergency medical services agency. *J Am Coll Health*. 2017 Jan 6:1-5. doi: 10.1080/07448481.2016.1277730. [Epub ahead of print] PubMed ID: 28059635.
2. Millin MG, Comer AC, Nable JV, Johnston PV, **Lawner BJ**, Woltman N, Levy MJ, Seaman KG, Hirshon JM. Patients without ST elevation after return of spontaneous circulation may benefit from emergent percutaneous intervention: A systematic review and meta-analysis. *Resuscitation*. 2016 Nov;108:54-60. doi: 10.1016/j.resuscitation.2016.09.004. PubMed PMID: 27640933.
3. Lawner BJ, Hirshon JM, Comer AC, **Nable JV**, Kelly J, Alcorta RL, Pimentel L, Tupe CL, Vanhoy MA, Browne BJ. The impact of a freestanding ED on a regional emergency medical services system. *Am J Emerg Med*. 2016 Aug;34(8):1342-6. doi: 10.1016/j.ajem.2015.11.042. PubMed PMID: 26686934.
5. Stefos KA, ***Nable JV**. Implementation of a high-performance cardiopulmonary resuscitation protocol at a collegiate emergency medical services program. *J Am Coll Health*. 2016 May-Jun;64(4):329-33. doi: 10.1080/07448481.2016.1138480. PubMed PMID: 26822142.
6. Brady WJ, Gehle BD, **Nable JV**. In-Flight medical Emergencies. Author reply. *N Engl J Med*. 2016 Jan 21;374(3):292-3. doi: 10.1056/NEJMc1512716. PubMed PMID: 26789893.
7. Hirshon JM, Galvagno SM Jr, Comer A, Millin MG, Floccare DJ, Alcorta RL, Lawner BJ, Margolis AM, **Nable JV**, Bass RR. Maryland's Helicopter Emergency Medical Services Experience From 2001 to 2011: System Improvements and Patients' Outcomes. *Ann Emerg Med*. 2016 Mar;67(3):332-340.e3. doi: 10.1016/j.annemergmed.2015.07.503. Epub 2015 Sep 30. PubMed PMID: 26433494.
8. **Nable JV**, Margolis AM, Lawner BJ, Hirshon JM, Perricone AJ, Galvagno SM, Lee D, Millin MG, Bissell RA, Alcorta RL. Comparison of prediction models for use of medical resources at urban auto-racing events. *Prehosp Disaster Med*. 2014 Dec;29(6):608-13. doi: 10.1017/S1049023X14001046. Epub 2014 Sep 26. PubMed PMID: 25256003.
9. **Nable JV**, Greenwood JC, Abraham MK, Bond MC, Winters ME. Implementation of a team-based physician staffing model at an academic emergency department. *West J Emerg Med*. 2014 Sep;15(6):682-6. doi: 10.5811/westjem.2014.5.20700. PubMed PMID: 25247043; PubMed Central PMCID: PMC4162729.

10. Pham TV, Sorenson CA, ***Nable JV**. Acquired factor VIII deficiency presenting with compartment syndrome. *Am J Emerg Med*. 2014 Feb;32(2):195.e1-2. doi: 10.1016/j.ajem.2013.09.022. Epub 2013 Sep 30. PubMed PMID: 24176587.
11. Pham TV, ***Nable JV**. Aortic dissection presenting with pancreatitis. *Am J Emerg Med*. 2013 Jul;31(7):1153.e1-2. doi: 10.1016/j.ajem.2013.02.034. Epub 2013 Apr 17. PubMed PMID: 23602744.
12. Mehta CK, Hu KM, **Nable JV**, Brady WJ. Expanding the role of percutaneous coronary intervention in patients resuscitated from cardiac arrest. *Am J Emerg Med*. 2013 Jun;31(6):974-7. doi: 10.1016/j.ajem.2013.02.028. Epub 2013 Mar 26. PubMed PMID: 23541172.
13. Farzad A, Radin B, Oh JS, Teague HM, Euerle BD, **Nable JV**, Liferidge AT, Windsor TA, Witting MD. Emergency diagnosis of subarachnoid hemorrhage: an evidence-based debate. *J Emerg Med*. 2013 May;44(5):1045-53. doi: 10.1016/j.jemermed.2012.10.001. Epub 2013 Jan 24. PubMed PMID: 23352866.

Reviews or Editorials in Refereed Journals: Nable

1. **Nable JV**, Lawner BJ, Brady WJ. 2016: emergency medical services annotated literature in review. *Am J Emerg Med*. 2016 Nov;34(11):2193-2199. doi: 10.1016/j.ajem.2016.07.024. PubMed ID: 27592723.
2. **Nable JV**, Graham AC. Gastrointestinal Bleeding. *Emerg Med Clin North Am*. 2016 May;34(2):309-25. doi: 10.1016/j.emc.2015.12.001. PubMed PMID: 27133246.
3. **Nable JV**, Tupe CL, Gehle BD, Brady WJ. In-Flight Medical Emergencies during Commercial Travel. *N Engl J Med*. 2015 Sep 3;373(10):939-45. doi: 10.1056/NEJMra1409213. PubMed PMID: 26332548.
4. **Nable JV**, Lawner BJ. Chameleons: Electrocardiogram Imitators of ST-Segment Elevation Myocardial Infarction. *Emerg Med Clin North Am*. 2015 Aug;33(3):529-37. doi: 10.1016/j.emc.2015.04.004. Epub 2015 Jun 4. PubMed PMID: 26226864.
5. Lawner BJ, **Nable JV**, Mattu A. Novel patterns of ischemia and STEMI equivalents. *Cardiol Clin*. 2012 Nov;30(4):591-9. doi: 10.1016/j.ccl.2012.07.002. Epub 2012 Sep 14. PubMed PMID: 23102034.
6. Lawner BJ, **Nable JV**, Brady WJ. 2010: the emergency medical services literature in review. *Am J Emerg Med*. 2012 Jul;30(6):966-71. PubMed PMID: 22930842.
7. **Nable JV**, Lawner BJ, Stephens CT. Airway management in cardiac arrest. *Emerg Med Clin North Am*. 2012 Feb;30(1):77-90. doi: 10.1016/j.emc.2011.09.009. Epub 2011 Oct 7. PubMed PMID: 22107976.

8. Cooney DR, Millin MG, Carter A, Lawner BJ, **Nable JV**, Wallus HJ. Ambulance diversion and emergency department offload delay: resource document for the National Association of EMS Physicians position statement. *Prehosp Emerg Care*. 2011 Oct-Dec;15(4):555-61. doi: 10.3109/10903127.2011.608871. PubMed PMID: 21870947.

Books or Chapters in Books: Nable

1. Bass R, Lawner BJ, Lee D, **Nable JV**. "Medical Oversight of EMS Systems", in *Emergency Medical Services: Clinical Practice and Systems Oversight*, 2nd Edition. Volume 2: Medical Oversight of EMS. Edited by Cone DC, Brice JH, Delbridge TR, Myers JB. Wiley, Hoboken, New Jersey, 71-84, 2015.
2. Kenez E, **Nable JV**. "Cyanide toxicity", in *PressorDex*, 2nd Edition. Edited by Greenwood JC, Emlet LL, Mallemat HA, Winters ME. Emergency Medicine Residents' Association, Irving, Texas, 89, 2015.
3. Kenez E, **Nable JV**. "Cyanide toxicity", in *PressorDex*. Edited by Greenwood JC, Emlet LL, Mallemat HA, Winters ME. Emergency Medicine Residents' Association, Irving, Texas, 85-86, 2012.
4. Kenez E, **Nable JV**. "Alcohol withdrawal", in *PressorDex*. Edited by Greenwood JC, Emlet LL, Mallemat HA, Winters ME. Emergency Medicine Residents' Association, Irving, Texas, 80, 2012.

Other Publications : Nable

1. Nable JV, Tupe CL, Gehle B, Brady WJ. "In-Flight Medical Emergencies." *Medscape* (<http://www.medscape.com/viewarticle/871431>), 2016.
2. Nable JV, Tupe CL, Mattu A. "In-Flight Medical Emergencies." *EMCast Podcast*, 2015.
3. Tupe CL, Nable JV. "Backboards: do they really have your back?" *Emergency Medicine Resident*, 41: 24-25, 2014.
4. Tupe CL, Nable JV. "Field termination of resuscitation: should we stay, or should we go?" *Emergency Medicine Resident*, 41: 8-9, 2014.
5. Lawner BJ, Nable JV. "Pump, blow, where to go: 21st century management of cardiac arrest." www.emedhome.com, 2013.
6. Nable JV. "Career pathways in emergency medical services." *Emergency Medicine Resident*, 40: 30-31, 2013.

7. Lawner BJ, Nable JV. "Trauma Case Series Review." University of Maryland Shock Trauma Center Webinar Series, 2013.
8. Bond MC, Greenwood JC, Nable JV, Mattu A. "Fluid resuscitation in trauma." EMCast Podcast, 2014.

Abstracts for Conference papers and posters: Nable

1. Nable JV. "Medic 5 Calling: Teaching On-Line Medical Direction via Simulation." Ann Emerg med. 2015 Oct;66(4):S157. Presented at the American College of Emergency Physicians Scientific Assembly on 10/26/2015, Boston, Massachusetts.
2. Nable JV, Greenwood JC, Abraham MK, Bond MC, Winters ME. "Implementation of a team-based physician staffing model at an academic emergency department." Acad Emerg Med. 2014 May;21(S1):S169. Presented at 1) Council of Residency Directors Academic Assembly on 2/12/2014, New Orleans, Louisiana, 2) Society for Academic Emergency Medicine Mid-Atlantic Regional Meeting on 2/22/2014, Philadelphia, Pennsylvania, and 3) Society for Academic Emergency Medicine Annual Meeting on 5/15/2014, Dallas, Texas.
3. Tupe C, Hirshon JM, Lawner BJ, Kelly J, Comer A, Nable JV, Pimentel L, Browne B. "The impact of a new freestanding emergency department on a county emergency medical services system." Ann Emerg Med. 2013 Oct;62(4):S145. Presented at the American College of Emergency Physicians Scientific Assembly on 10/15/2013, Seattle, Washington.
4. Margolis AM, Nable JV, Millin MG, Hirshon JM, Comer A, Floccare D, Bass R. "The effects of statewide protocols on helicopter EMS utilization in Maryland." Acad Emerg Med. 2013 May;20(S1):S269-S270. Presented at the Society for Academic Emergency Medicine Annual Meeting on 5/17/2013, Atlanta, Georgia.
5. Nable JV, Margolis AM, Lawner BJ, Perricone AJ, Galvagno SM, Lee D, Millin MG, Alcorta RL. "Comparing two prediction models for mass gathering events." Prehosp Emerg Care. 2013 Jan;17(1):111. Presented at the National Association of Emergency Medical Services Physicians Conference on 1/10/2013, Bonita Springs, Florida.

Invited Lectures: Nable

1. "Hot Topics in Emergency Medical Services" Regional Continuing Medical Education Lecture. Virginia Emergency Medical Services Annual Symposium, Norfolk, VA. Nov 2016.
2. "Is There a Doctor On-Board? In-Flight Medical Emergencies" National Lecture, New Speaker's Forum, American College of Emergency Physician's Scientific Assembly, Las Vegas, NV. Oct 2016.

3. "Opiate overdoses in the collegiate environment" Continuing Medical Education Lecture, Georgetown University, Division of Student Affairs, Washington, DC. Aug 2016.
4. "In-Flight Medical Emergencies for the Emergency Physician" Grand Rounds Lecture, University of Maryland Medical Center Emergency Medicine Residency, Baltimore, MD. May 2016.
5. "EMS Literature Update: 2016" Grand Rounds Lecture, MedStar Georgetown University Hospital / Washington Hospital Center Emergency Medicine Residency, Washington, DC. Apr 2016.
6. "The Inconsolable Infant" Grand Rounds Lecture, MedStar Georgetown University Hospital / Washington Hospital Center Emergency Medicine Residency, Washington, DC. Apr 2016.
7. "In-Flight Medical Emergencies for the EMS Provider" Paramedic Continuing Medical Education Lecture, University of Maryland Baltimore County Paramedic Refresher Program, Catonsville, MD. Feb 2016.
8. "Is There a Doctor On-Board? In-Flight Medical Emergencies for the Emergency Physician"
9. Grand Rounds Lecture, MedStar Georgetown University Hospital / Washington Hospital Center Emergency Medicine Residency, Washington, DC. Nov 2015.
10. "Prehospital Termination of Resuscitation" Regional Continuing Medical Education Lecture, Virginia Emergency Medical Services Annual Symposium, Norfolk, VA. Nov 2015.
11. "High Performance Cardiac Arrest Resuscitation" Continuing Medical Education Lecture, Georgetown University, Division of Student Affairs, Washington, DC. Aug 2015.
12. "Hemodynamic Monitoring" Paramedic Continuing Medical Education Lecture, University of Maryland Baltimore County Critical Care Emergency Medical Transport Program, Catonsville, MD. Jul 2015.
13. "Introduction to Emergency Medical Services" Grand Rounds Lecture, MedStar Georgetown University Hospital / Washington Hospital Center Emergency Medicine Residency, Washington, DC. Jun 2015.
14. "Is There a Healthcare Provider on Board? In-Flight Medical Emergencies for the EMS Provider" National Continuing Medical Education Lecture, National Collegiate Emergency Medical Services Foundation Annual National Conference, Baltimore, MD. Feb 2015.
15. "Push Hard, Drive Fast? Prehospital Cardiac Arrest Termination of Resuscitation" Grand Rounds Lecture, MedStar Georgetown University Hospital / Washington Hospital Center Emergency Medicine Residency, Washington, DC. Dec 2014.

16. "Hemodynamic Monitoring" Paramedic Continuing Medical Education Lecture, University of Maryland Baltimore County Critical Care Emergency Medical Transport Program, Catonsville, MD. Jul 2014.
17. "Top 10 Emergency Medicine Articles this Year" National Continuing Medical Education Lecture, American College of Osteopathic Emergency Physicians' Emerge Spring Conference, Scottsdale, AZ. Apr 2014.
18. "Is There a Doctor on Board? In-Flight Medical Emergencies for the Emergency Physician" National Continuing Medical Education Lecture, American College of Osteopathic Emergency Physicians' Emerge Spring Conference, Scottsdale, AZ. Apr 2014.
19. "Traumatic Brain Injury for the Prehospital Provider" Continuing Medical Education Lecture, Peninsula Regional Medical Center Annual Topics on Trauma Conference, Ocean City, MD. Sep 2013.
20. "Medical Preparedness for the Baltimore Grand Prix" Seminar Lecture, University of Maryland Baltimore County Department of Emergency Health Services Graduate Seminar Series, Catonsville, MD. Sep 2013.
21. "Clinical Pathologic Case Conference: Altered Mental Status" Grand Rounds Lecture, University of Maryland Medical Center Emergency Medicine Residency, Baltimore, MD. Aug 2013.
22. "Traumatic Brain Injury Panel Discussion" Grand Rounds Panel Discussion, University of Maryland Medical Center Emergency Medicine Residency, Baltimore, MD. Mar 2013.
23. "Is There a Doctor on Board? In-Flight Medical Emergencies" Grand Rounds Lecture, University of Maryland Medical Center Emergency Medicine Residency, Baltimore, MD. Feb 2013.
24. "Mastering Capnography" Paramedic Continuing Medical Education Lecture, University of Maryland Baltimore County Paramedic Refresher Program, Catonsville, MD. Feb 2013.
25. "Altered Mental Status for the EMS Provider" Continuing Medical Education Lecture, Eastern Shore Emergency and Critical Care Symposium, Easton, MD. Oct 2012.
26. "Fluid Resuscitation of the Multi-Trauma Patient" Combined Grand Rounds Lecture, University of Maryland Medical Center Departments of Emergency Medicine and Trauma Surgery, Baltimore, MD. July 2012.
27. "Deadly Causes of Chest Pain" Paramedic Continuing Medical Education Lecture, University of Maryland Baltimore County Paramedic Refresher Program, Catonsville, MD. Nov 2011.

28. "Advanced Airway Management" Paramedic Continuing Medical Education Lecture, University of Maryland Baltimore County Critical Care Emergency Medical Transport Program, Catonsville, MD. Jul 2011.
30. "A Confusing Headache: A Case of Neurosyphilis" Combined Grand Rounds Lecture, University of Maryland Medical Center Departments of Emergency Medicine and Neurology, Baltimore, MD. May 2011.

Invited Lectures: Other

Becca Scharf (present)

Master's thesis proposal defense (2016) *Queen Anne's County Mobile Integrated Community Health Pilot Program Descriptive Study: Disease Prevalence among Program Participants and Implications for Provider Training.*

Kevin Pearl (2014)

- K Pearl and D Isenberg. "Lights and Sirens Responses Are Rarely Needed for Patients with a Chief Complaint of Abdominal Pain". NAEMSP Annual Meeting. Jan 2014.
- "Blood Goes Round And Round, Any Variation On This Is A Bad Thing", Winterfest EMS Conference, Tilghman Island, MD. January 2016.