College of Engineering
& Information Technology

ASEE Deans Diversity Initiative

April 30, 2019

UMBC

1. a. College of Engineering and Information Technology (COEIT)
   b. University of Maryland, Baltimore County
   c. Keith J Bowman, Dean
   d. Amy Heckhaus, Chief of Staff

Office of the Dean
University of Maryland, Baltimore County (UMBC)
College of Engineering and Information Technology
1000 Hilltop Circle
Information Technology & Engineering, Room 217
Baltimore, MD 21250

Phone: 410-455-3270
Fax: 410-455-3559
Email: coeit@umbc.edu
UMBC COEIT https://coeit.umbc.edu/
UMBC COEIT's Center for Women in Technology https://cwit.umbc.edu/

2. a. ***Please indicate that you have completed the basic elements of the Dean's Diversity Pledge***
The basic elements of the Dean's Diversity Pledge have been completed between the efforts of the prior dean, Dr. Julia Ross, and the current leadership of the college. For our college, diversity and inclusion work has historically occurred primarily through centralized campus resources and the Center for Women in Technology (CWIT). CWIT was founded in 1998 and has been instrumental in advancing diversity and inclusion well beyond its initial role of serving women in computing, and has expanded activities to include engineering students and a broad range of demographic groups. During the next two years, the college's new Diversity and Inclusion Committee will be tasked to develop a robust and detailed Diversity and Inclusion Plan. This plan will represent the potential of this college with a mix of engineering, computing and information programs at a minority-serving institution, wherein there are already a large number of programs focused on broadening participation. This plan will build upon our current plan (see Appendix A) and will be expected to elevate our capacity to deliver inclusive practices to all students, elevate our success in advancing an inclusive faculty and staff atmosphere, and reach across all contexts wherein the college conducts its work. This will occur in concert with UMBC's vision of social justice and inclusive excellence and UMBC's extensive set of partners.

Dean Keith J Bowman joined UMBC in Fall, 2017 and the current dean's office was completed with its current full team in April, 2019. Since joining UMBC, Dean Bowman has been engaged in sustaining existing diversity and inclusion work across the departments and CWIT, while also seeking to find ways to create stronger synergy across a considerable number of previously unlinked efforts in the college. Hiring and reorganization of the dean's office and staffing in support of departments has been a major theme, and doing so in a way that shows leadership in advancing diversity and inclusion has also been important. Across this time, the college Leadership Council has been expanded and revised so that it is now comprised of nine members with faculty appointments, including four women, and four staff, including two women. The college dean's office team consists of seven women and three men with two of the office team members coming from underrepresented minorities.

Since August, 2017, the college has undertaken substantial efforts to advance community and connectivity across the college with a series of initiatives for faculty, staff and students. This partial list of initiatives has been used across the college to ensure a stronger foundation for collective work, improve our workplace, and advance our success in education and research:

1) *Dean's office hours for faculty, staff and students (~monthly).*
2) *"State of the College" presentations have been given provided to staff and faculty along with time for socializing each semester. A large focus of the presentations is data, including diversity and inclusion, and transparency.*
3) *Completely restructured Welcome Week event for new undergrads as an all-college event focused on the success of all incoming undergraduates.*
4) *A college faculty awards/advisory committee*
5) *A college staff awards/advisory committee*
6) *College-based professional development funding for staff.*
7) *A college undergrad council to connect our undergraduate program directors*
8) *A college grad council to connect our graduate program directors*
9) *Ensured the college is inclusive of our part time instructors*
10) *Initiated and carried out a retention/equity plan for faculty*
11) *An all-college spring celebration*
12) *Initiated a Council of Student Org Presidents and funding to support college-related student organizations in their work*
13) *A college diversity/inclusion committee of faculty and staff and have revised our external Advisory Board to be more diverse*

COEIT also serves as a strong partner for many efforts across UMBC's campus located in other colleges, undergraduate academic affairs, and graduate school. One key initiative to broaden the connectivity of the college to students, and especially students from underrepresented backgrounds, was the 2017 founding of a Council of Student Org Presidents for COEIT-related student organizations. This initiative brings together student leaders from demographic-related student organizations, including SWE, NSBE, SASE, and SHPE, with student chapters of professional societies, including AIChE, ACM, EWB, IEEE, SAE, AIAA, and ASME, and UMBC-based student organizations such as HackUMBC, ISCOM and Retriever Robotics. In 2017, the Council of Student Org Presidents was asked to seek ways to collaborate across student organizational boundaries for events and activities and develop service projects or activities that advance UMBC and our community.

During the 2018-2019 year, COEIT also founded a new unit within the dean's office, the Engineering and Computing Education Program (ECEP). ECEP brings together many interdisciplinary, beginning engineering and computing, and outreach activities of the college along with serving as a forum for the large number of engineering education and computing education efforts taking place across the college. On March 14, 2019, the college held its first ECEP Symposium. Nearly all activities in education, education research and/or training within the college are strongly themed in broadening participation of underrepresented groups in engineering and computing and currently comprise nearly one third of the sponsored project expenditures for the college. The college is also strongly tied to one of the most robust sets of diversity and inclusion infrastructures for any similar-sized campus. The college has students that participate in a broad set of undergraduate scholar programs and graduate scholar programs, e.g. Promise, that attract and sustain students from diverse backgrounds and perspectives. The college leads or partners with UMBC's McNair Scholars, NIH STEM BUILD, Cyber Scholars, CWIT Scholars, Sherman Scholars, Grand Challenge Scholars, Meyerhoff Graduate Fellows and Meyerhoff Scholars. An overview of UMBC Scholar Programs is given in Appendix B.

b. ***Commit to at least one K-12 or Community College Pipeline Activity***

The college and its UMBC-based partners have a good number of external partnership initiatives and some are quite large-scale. Perhaps the newest of these initiatives came about in 2018 when the college became the base for the Maryland Center for Computing Education (MCCE). MCCE is a multi-year, statewide computing initiative focused on advancing computing education for all students. Elements of MCCE include professional development for K-12 teachers and pre-service university programs to prepare future teachers. This places MCCE staff on the frontlines in working with every school district and every place that trains sciences, technology, engineering, and mathematics (STEM) teachers in the state. Some others are discussed later in this document. The MCCE initiative was led and advocated for the state by former COEIT Associate Dean Dr. Marie desJardins. Dr. desJardins has moved from UMBC to continue her work in advancing computing education for all as a dean at Simmons University, but one of her real lasting contributions was the case made for creation of the MCCE. That legacy is continued by Dr. Megean Garvin and Ms. Dianne O'Grady-Cunniff, who lead the ongoing program based in our college in partnership with the University System of Maryland (USM) central office. In addition to advancing the computing and cybersecurity workforce, MCCE was founded to address the underrepresentation of girls and underrepresented minorities or low socioeconomic status students in K-12 computing tracks. MCCE's team reports to COEIT's new Director of Education and Outreach, Dr. Maria Sanchez. Dr. Sanchez brings fifteen years of experience in teaching, research and advocacy to her new role.

c. ***Commit to developing strong partnerships between research-intensive engineering schools and non- PhD granting engineering schools serving populations underrepresented in engineering.***

UMBC has led the USM-based effort to advance STEM doctoral education. PROMISE: Maryland's AGEP is a university system-wide effort for the state of Maryland to facilitate underrepresented STEM graduate student and postdoctoral professional development and pathways to careers. UMBC has led the alliance that consists of science and engineering colleges across the USM universities, regional education centers in the University System of Maryland, four community colleges, and a former National Science Foundation(NSF) Model Institution of Excellence Hispanic Serving Institution in Puerto Rico. Until her departure for the University of California, Davis, last month, Dr. Renetta Tull, a Professor of Practice in COEIT was leader of this effort. Dr. Tull is continuing her work in diversity and inclusion in her new role as Vice Chancellor for Diversity and Inclusion at the University of California, Davis. Ongoing components of Maryland's PROMISE and associated programs will maintain efforts to increase enrollment, retention, and graduation rates of underrepresented minorities. The program has contributed to the higher education literature on retention and professional development for graduate students and postdocs.

d. ***Commit to the development and implementation of proactive strategies to increase the representation of women and underrepresented minorities in our faculty.***

In partnership with UMBC's faculty-led STRIDE program, the college has expanded its search training from search committees to include all faculty for searches. Under the leadership of new Associate Deans Dr. Helena Mentis (Academic Programs and Learning) and Dr. Erin Lavik (Research and Faculty Development), COEIT is deeply engaged in revising and elevating its approaches to hiring, mentoring, and sustaining faculty from all backgrounds. The college is also an active and engaged participant in the extensive activities outlined in Appendix C that were derived from prior NSF ADVANCE funding.

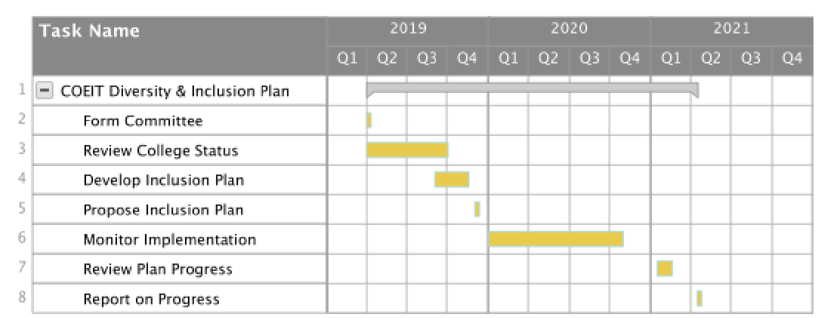
3. a. ***Please affirm that your college/school/program's dean/program head (or their predecessor) has signed the pledge.***
UMBC's Dean in 2016, Dr. Julia Ross, is a signatory to the letter, as is Dr. Keith J Bowman on behalf of his prior institution, San Francisco State University.

b. ***Please affirm that you have developed a Diversity and Inclusion Plan, and also indicate any national organizations with whom you worked to develop the diversity plan.***
The current version of the college diversity and inclusion plan is given in Appendix A. UMBC is an institutional member of WEPAN. COEIT's diversity and inclusion efforts are integrated with the college strategic plan and the university strategic plan, and strongly supported by CWIT. UMBC's extensive work in diversity and inclusion is a manifestation of its values, which are expressed best in the University Vision:

Our UMBC community redefines excellence in higher education through an inclusive culture that connects innovative teaching and learning, research across disciplines, and civic engagement. We will advance knowledge, economic prosperity, and social justice by welcoming and inspiring inquisitive minds from all backgrounds.

At UMBC, every element of the words in the vision is experienced from the top to the bottom. The words and actions of the university are tested every day against the vision. Beginning in Spring, 2019, the college initiated a Diversity and Inclusion Committee that brings together a broad cross-section of faculty and staff from across the college. A preliminary timeline for the first two years of the committee's work is shown below.

COEIT Diversity & Inclusion Inaugural Timeline



c. ***Please indicate which, if any, K-12 or community college pipeline activity you have committed with explicit targeted goals and measures of accountability. Please indicate those goals and the accountability measures.***

Our college has made a substantial effort to engage with partners and seek external support to better serve our increasing number of students transferring from community colleges with a particular focus on diversity and inclusion. Two NSF-funded programs, the Transfer Scholars in IT and Engineering (T-SITE) program (S-STEM; DUE-1458343) and a DUE-IUSE Pathways Project (DUE-1626413), are both being conducted through leadership by our CWIT and faculty across the college.

T-SITE provides scholarships, academic support, professional development and community building for transfer students at UMBC from Maryland community colleges. T-SITE is focused on increasing the diversity and success of transfer students in technological majors (computer engineering, computer science, information systems, and business technology administration) at UMBC. As of the 2018-2019 academic year, T-SITE has served 44 students. Forty-four percent of T-SITEs have been women and 50% from underrepresented minority groups. All T-SITE scholars have demonstrated financial need. The average time to graduation for T-SITEs is three years after transferring to UMBC and 97% of all T-SITE Scholars were retained in engineering or computing majors. T-SITE Scholars have completed internships with employers such as IBM, General Electric, Exelon, National Security Agency, Northrop Grumman, Noblis, HughesNet, M&T Bank, and Skyline Technology Solutions. Additionally, T-SITEs have completed undergraduate research experiences at the University of Pittsburgh, Worcester Polytechnic Institute, and the University of Arizona. T-SITE is supported by the NSF.

Specifically, the T-SITE-C project will achieve the following objectives and outcomes:

- Apply the highly successful CWIT support structure and community-building scholar model to transfer students in computing majors with financial need to increase their success. *Expected outcomes: A total of 25 transfers students majoring in computing will be recruited to receive scholarships of up to $7,000 annually. At least 90% will be retained and graduate within computing majors.*

- Provide the T-SITE-C scholars with academic and professional development information and opportunities, including internships and research opportunities. *<u>Expected outcomes:</u> 100% of T-SITE-C Scholars will participate in at least one internship or research experience before graduation. At least 80% of T-SITE-C scholarship participants who persist to graduation will obtain employment or enter a graduate program in computing-related field within six months of graduation.*

- Solidify relationships with computing faculty and staff at five Maryland community colleges with a focus on expanding the pipeline of transfer students pursuing computing majors, especially women and underrepresented minorities. *Expected outcomes: We will increase the number of T-SITE-C applicants from the five community colleges involved in the STEM Transfer Student Success Initiative by 50% overall. In the current T-SITE project, we have had an average of 15 applications from new transfer students pursuing computing majors. We will increase that to a minimum of 22 annually.*

DUE-IUSE Pathways Developing, Implementation, and Evaluating a Post-Transfer Pathways Program for Computing and Engineering Majors. The project is a collaboration between four departments in COEIT and six community colleges in the vicinity of UMBC. The project intends to address the national need to increase the number and diversity of new computing and engineering majors from community colleges to four-year public research universities, with a focus on women and underrepresented minorities. The overarching goal of this four-year project is to design, implement and evaluate a post-transfer Pathways Program that will increase the retention and graduation rates of transfer students in computing and engineering majors, particularly women and underrepresented minorities, and increase inter- and intra- institutional collaboration for longer-term change and improvements for transfer students. More specifically it will design, implement and evaluate:

- An innovative, holistic model of individual pre- and post- transfer success coaching
- A new first-year experience (FYE) course for first-semester post-transfer students in computing and engineering. Separate versions for engineering and computing majors will be developed.
- A collaborative inter-institutional learning community comprised of computing and engineering faculty, advisors, and administrators that will support longer-term departmental and institutional improvement.

In addition, the project will generate new knowledge related to the concepts of academic and social integration and add to the body of research about experiences of transfer students in computing and engineering majors, with an emphasis on women and underrepresented minorities in these majors.

d. ***Please indicate with which partner institutions, if any, you have committed to developing a strong partnership.***

As mentioned above, UMBC leads an alliance focused on advancing diversity and inclusion that consists of fourteen STEM colleges in the University System of Maryland universities, and regional education centers in the University System of Maryland, four community colleges, and a former NSF Model Institution of Excellence Hispanic Serving Institution in Puerto Rico. This alliance was most recently led by Dr. Renetta Tull, a Professor of Practice formerly in the college.

e. ***Please affirm that you have committed to the development and implementation of proactive strategies to increase the representation of diverse groups in your faculty. Please indicate the strategies to be pursued.***

In our goals for more diverse faculty, we focused our efforts on instantiating inclusive searches. In 2018-2019, the Provost required each search committee to compose a diversity recruitment plan and diversity-focused advertisement, and also required each search to use Interfolio for articulating criteria and rating of candidates. The Dean also gave a presentation in each department outlining the importance in following diverse hiring strategies. Finally, all search committees within the college attended workshops with the UMBC-STRIDE team and had members of the STRIDE team meet one-on-one with the search committee to write their diversity recruitment plans and advertisements and develop diverse searches with best practices.

STRIDE (See Appendix C) was formally launched in 2015, and was adapted from the University of Michigan's foundational STRIDE model. UMBC-STRIDE embraces a peer to peer education model in which highly respected faculty serve as STRIDE fellows, who work within their faculty communities to raise awareness about implicit biases and strategize best practices for recruiting and retaining a diverse and inclusively excellent professoriate. Their goal is to facilitate conversations with our faculty peers on ways in which we can collectively work together and implement actions that recruit, retain, and advance a critically diverse and inclusively excellent faculty.

So far, in the 2018-2019 academic year, six searches have been underway in COEIT. The following tables report the application pool's demographics for each search compared to the NSF's demographics characteristics of doctorate recipients.

Percentage of Female Applicants	Application Pool	National Data
TT Information Systems in Human Centered Computing	37.0%	32.7%
TT in Chemical Biochemical and Environmental Engineering	19.0%	32.2%
TT Information Systems in Artificial Intelligence/Knowledge Management	21.0%	30.9%
TT in Computer Science and Electrical Engineering	13.0%	17.4%
Lec/PoP in Computer Science and Electrical Engineering	30.0%	17.4%
Lec/PoP in Information Systems	54.0%	30.9%

Percentage of Applicants by Ethnicity or Race

	Hispanic or Latino		Black or African American		Asian		White	
Search	Application Pool	National Data	Application Pool	National Data	Application Pool	National Data	Application Pool	National Data
TT Information Systems in Human Centered Computing	2.0%	5.8%	8.0%	7.7%	42.0%	7.7%	42.0%	67.3%
TT in Chemical Biochemical and Environmental Engineering	4.0%	6.8%	3.0%	2.3%	48.0%	16.0%	40.0%	69.4%
TT Information Systems in Artificial Intelligence/Knowledge Management	1.00%	7.9%	0.0%	14.6%	57.0%	13.5%	38.0%	62.0%
TT in Computer Science and Electrical Engineering	1.0%	3.7%	1.0%	3.7%	56.0%	16.0%	37.0%	69.0%
Lec/PoP in Computer Science and Electrical Engineering	0.0%	3.7%	6.0%	3.7%	38.0%	16.0%	53.0%	69.%
Lec/PoP in Information Systems	0.0%	7.9%	15.0%	14.6%	8.0%	13.5%	62.0%	61.8%

3. *Measures of success or notable increases in diversity in enrollments, retention and graduation rates of engineering and/or engineering technology students, and increased diversity in engineering faculty.*

One of the first elements of being able to more deeply measure our progress is being able to fully report on the entire set of data categories set forth in the ASEE Diversity Initiative. Appendix D represents the most extensive set of data on the people and programs in our college that has ever been assembled in one place. It includes detailed demographic information on all full-time and part-time faculty and staff, undergraduate student enrollment, graduation rates and degrees, graduate enrollment and degrees, the fractions of our students who have requested accommodations for disability, and the make-up of our new college advisory board. As we move forward, we will work with UMBC's institutional research to make a more detailed set of data types readily available and accessible through work with UMBC's Office of Institutional Research, Analysis & Decision Support (IRADS). Appendix D will be shared with the college's new Diversity and Inclusion Committee and they will be asked to reference the data as the support development of a broader and more impactful set of college goals and initiatives. Another important consideration is our college's role in success of UMBC's overall efforts to advance diversity and inclusion. The Meyerhoff Scholars Program is UMBC's flagship effort to advance inclusion and it has shaped a lot of other efforts on campus.

The Meyerhoff Scholars Program was founded at UMBC in 1988 with funding from the Robert and Jane Meyerhoff Foundation, and a deep collaboration between Robert Meyerhoff and UMBC's long-serving president, Dr. Freeman Hrabowski, III. The initial goal was to address the shortage of African American males in sciences and engineering. The program was subsequently expanded to include students interested in the advancement of minorities in the sciences and related fields. To date, there are nearly 300 Meyerhoff Scholars enrolled at UMBC and more than 1100 graduates. The Meyerhoff model has successfully been demonstrated to produce similar or better outcomes at two very different institutions, Pennsylvania State University and the University of North Carolina and recently has been expanded to the University of California, Berkeley and the University of California, San Diego. Of those graduates, nearly a third have already completed a PhD or MD/PhD and an additional third are currently in progress, having had undergraduate majors in mathematics, science, engineering or computer science. Not surprisingly, a large fraction of the Meyerhoff Scholars choose to major in engineering or computing disciplines within COEIT. Half of this year's 62 graduating Meyerhoff Scholars are graduating with a primary degree from within COEIT. This year's Meyerhoff Scholars have been accepted at top engineering and computing programs across the country, including the University of California, Berkeley, Harvard University, Georgia Tech, Carnegie Mellon and North Carolina State University. One important impact of this and other scholar programs in the college is that at UMBC the students from backgrounds historically-underrepresented in engineering and computing, are often the best students in the classroom. UMBC's long-serving president, Dr. Freeman Hrabowski III often emphasizes a series of elements that end with how character leads to destiny. At UMBC, character is the defining element that supports our work in diversity and inclusion. The Meyerhoff Scholars Program and Dr. Hrabowski's work with many colleagues on our campus to explore the lessons learned from students in the program have supported UMBC's broader success in being perceived as a welcoming campus.

UMBC's ABET-accredited undergraduate programs have consistently performed very well, relative to other similar programs in degrees earned by African Americans and better than most other institutions in terms of gender. The chemical engineering (ChE), mechanical engineering (ME), computer engineering (CompE) and computer science (CS) degree programs are each among the top ten in African American BS degree production among public doctoral institutions. For example, out of 101 doctoral public institutions reporting degree data for computer engineering to ASEE across five years 2013-2017, UMBC was 25th in total degrees and 6th in the number of African Americans earning degrees and 23rd in degrees earned by women.

ASEE Data 2013-2017 UMBC College of Engineering and IT

Program (total #)	Degree Total	# African Americans	# Women
Computer Science (91)	28th	8th	28th
Computer Eng (101)	25th	6th	23rd
Chemical Eng (93)	70th	7th	64th
Mechanical Eng (117)	74th	7th	40th

UMBC also does relatively well in terms of diversity for its master's degree programs. The female fraction of master's recipients is well ahead of the 2017 national average of 25.7% reported by ASEE. Also, for 2017, UMBC was the top producer of master's degrees for African Americans among public doctoral institutions reporting data to ASEE despite UMBC producing much less than a third of the number of master's degrees of many other universities.

Top Producers of Engineering & Computing Master's Degrees Earned by African Americans in 2017

Rank	Master's Degree Institution	African American Male	African American Female	Total M.S./M.P.S.	Female M.S./M.P.S.	Female Fraction	African American Fraction	African American Number	Foreign National
1	**UMBC**	**34**	**9**	**367**	**122**	**33.2%**	**20.6%**	**43**	**43.1%**
2	Johns Hopkins	28	13	1,043	278	26.7%	5.3%	41	26.0%
3	North Carolina A&T	20	14	65	25	38.5%	72.3%	34	27.7%
4	Georgia Tech	22	11	1,803	376	20.9%	2.7%	33	33.3%
5	Alabama-Birmingham	21	11	149	32	21.5%	24.8%	32	13.4%
6	George Washington	25	6	478	129	27.0%	15.4%	31	57.9%
7	U Maryland, College Park	16	10	545	120	22.0%	10.2%	26	53.4%
8	NJIT	18	7	587	135	23.0%	10.2%	25	58.4%
9	George Mason	14	6	550	151	27.5%	6.6%	20	44.9%
10	Stanford	12	7	1,119	333	29.8%	2.7%	19	37.9%

CWIT- The Center for Women in Technology at Twenty Years Celebrating its twentieth anniversary this year, CWIT has been a pivotal element for driving diversity in all of its manifestations for the college and has clearly had a deep impact on the participants across the years. For the college strategic plan, *Goal 2.4: Foster diversity and a climate of inclusive excellence,* is a primary area of emphasis and recently efforts have been initiated to integrate it with *Goal 2.2: Increase the undergraduate and graduate graduation rates* from the College. One initiative that integrated these two was conducted through CWIT and has been tagged as *Celebrating Women in Technology – Expanding the CWIT Affiliates Program*. CWIT has and continues to expand its existing Affiliates Programs that are tied to both the CWIT Scholars program and the Cyber Scholars program. Both of these programs are targeted at outstanding students engaged in advancing diversity and inclusion and provide strong support, residential communities, academic support, targeted seminars and mentoring from industry and financial support.

The CWIT and Cyber Scholars Affiliates Programs build and implement programs based on empirically based and widely accepted best practices to increase retention of underrepresented groups in engineering and computing majors. Research reports and resources about best practices produced by The American Society of Engineering Education (ASEE), The National Center for Women & Information Technology (NCWIT) and the American Association of University Women (AAUW) suggest the following approaches for increasing the retention and graduation of students underrepresented in engineering and computing: (1) facilitating positive student-student and student-faculty interactions, (2) community building, (3) peer mentoring, (4) living-learning communities, (5) programs specifically for first-year students, (6) promoting career awareness, and (7) incorporating speakers/event participants from industry.

CWIT reached approximately 40% of the women undergraduates in COEIT through our CWIT, Cyber, and T-SITE Scholars Program as well as the Affiliates Program in 2016. The current level of active engagement by Affiliates varies greatly with some only registering and other participating in a number of events throughout the academic year. We have increased the intensity and visibility of engagement of registered Affiliates by explicitly recognizing levels of participation (with public recognition and tangible incentives) and involving Affiliates in leadership roles. We have also increased CWIT's contact to at least 43.5% of COEIT undergraduate women in CWIT activities as of 2017-2018.

APPENDIX A

COEIT Diversity and Inclusion Plan Spring, 2019

by Dean Keith J Bowman and Associate Deans Erin Lavik and Helena Mentis

This initial edition of our college strategic plan is set forth in a context wherein the campus and college have been extending well-developed experiences for students from underserved backgrounds and with special interests towards all students. Contemporaneously, the campus has been engaged in an endeavor to expand initial efforts on diversity of early career faculty to being inclusive of all faculty and staff. As our first college Diversity and Inclusion Committee begins their initial work, we chose to provide some simple initial metrics that are scalable and enable ready comparisons to other institutions. We will ask the new Diversity and Inclusion Committee to assess, critique and modify as they see fit this initial set of data. It is our hope that having initial ideas to respond to will make their initial work more concrete and substantive. We also hope that they will be successful in providing a broad set of guidelines that will enable us to contribute towards the goal we all have to advance inclusive excellence. We humbly expect their plan to readily exceed and render obsolete these initial ideas while also ensuring that our diversity and inclusion efforts are focused not only on readily measured metrics, but also more meaningful improvements in the well-being and support for all people our college touches.

The initial benchmarks shown below as a one-page dashboard, based on ASEE data by matched discipline/department/program sets, are focused on faculty and degrees by each departmental unit in the college. Graduate degree benchmarking, in part due to the smaller number of degrees and a large number of interdisciplinary master's degrees, is shown using college wide data for colleges benchmarked using matched degree areas. For each of the benchmarks given below our initial target is for our college to be at least equal or ahead of every benchmark level for institutions reporting data to ASEE within three years. Further refinements could be comparisons to research universities, public universities, etc. We will seek guidance from our Diversity and Inclusion Committee for the refinements and improvements they choose and we will annually produce data that will be shared in college-wide meetings. As we are able to further expand the categories available from the UMBC data warehouse, and the ASEE Diversity Initiative expands the categories of data available, we will hope to increase the categories wherein data can be benchmarked.

Some advantages of these metrics are that data for peer institutions or similar groupings can be readily reviewed and since we are talking about people, individuals and not percentages or fractions are the focus. For example, consider the benchmarking for mechanical engineering (ME) shown below. For 2018 our ME program had fourteen tenured/tenure track (T/TT) faculty. That placed the program in a tie as the 142nd largest T/TT faculty among ME programs reporting data to ASEE. The program had three female faculty in 2018 which placed it in a tie at 73rd largest number of female faculty with a few dozen ME programs. All of the benchmarks are similarly derived in in the metrics given below.

For the metrics below, green indicates the measure is ahead of the benchmark, gold indicates that the measure is just behind the benchmark and red indicates the measure is well behind the benchmark.

UMBC

Chemical, Biochemical & Environmental Engineering – 2018 (compared vs Chem. Engineering)

Faculty Benchmark	**92nd -largest T/TT ChE faculty size (12 tied)**
	50th -largest number of female T/TT ChE faculty (3 tied)
	Tied for last number of URM T/TT faculty (0 tied)
BS Degree Benchmark	**75th -largest ChE BS Degrees (66 tied)**
	78th -largest number of female ChE BS Degrees (23 tied)
	30th -largest number of URM ChE BS Degrees (14 tied)

Computer Science & Electrical Engineering – 2018

Faculty Benchmark	**27th -largest T/TT CS faculty size (34 tied)**
	30th -largest number of female T/TT CS faculty (5 tied)
	11th -largest number of URM T/TT CS faculty (2 tied)
BS Degree Benchmark	**29th -largest CS BS Degrees (66 tied)**
	28th -largest number of female CS BS Degrees (33 tied)
	30th -largest number of URM CS BS Degrees (19 tied)
BS Degree Benchmark	**33rd -largest CompE BS Degrees (59 tied)**
	24th -largest number of female CompE BS Degrees (11 tied)
	34th -largest number of URM CompE BS Degrees (10 tied)

Information Systems – 2018 (benchmarked vs ASEE CS data)

Faculty Benchmark	**41st -largest T/TT CS faculty size (24 tied)**
	4th -largest number of female T/TT CS faculty (10 tied)
	Tied for last number of URM T/TT faculty (0 tied)
BS Degree Benchmark	**24th -largest IS BS Degrees (218 vs CS comparison)**
	16th -largest number of female CS BS Degrees (53)
	13th -largest number of URM CS BS Degrees (45)
BS Degree Benchmark	**1st -largest BTA BS Degrees (87 vs Eng MGMT comparison)**
	1st -largest number of female BTA BS Degrees (29)
	4th -largest number of URM CS BS Degrees (10)

Mechanical Engineering – 2018

Faculty Benchmark	**142nd -largest T/TT ME faculty size (14 tied)**
	73rd -largest number of female T/TT CS faculty (3 tied)
	33rd -largest number of URM T/TT faculty (2 tied)
BS Degree Benchmark	**113th -largest ME BS Degrees (115 tied)**
	89th -largest number of female ME BS Degrees (19)
	93rd -largest number of URM ME BS Degrees (14)

College Benchmarks Graduate Education 2018 (Compared with similar degree mixes*)

MS Degree Benchmark	**45th -largest MS Degrees (319)**
	32nd -largest number of female MS degrees (105)
	4th -largest number of URM MS Degrees (57)
PhD Degree Benchmark	**81st -largest PhD Degrees (31 tied)**
	69th -largest number of female PhD Degrees (7 tied)
	37th -largest number of URM PhD Degrees (2 tied)

**Computer Science (inside & outside engineering), Electrical Engineering, Computer Engineering, Chemical Engineering, Engineering Management, Mechanical Engineering Graduate Programs*

APPENDIX B
Some UMBC Scholar Programs

CWIT Scholars CWIT Scholars receive four-year scholarships ranging from $5,000 – $15,000 per academic year for in-state students, and from $10,000 – $22,000 per academic year for out-of-state students, to cover full tuition, mandatory fees, and other expenses. Each CWIT Scholar participates in special courses and activities and receive mentoring from faculty and participating members of the IT and engineering communities. This program is part of CWIT's effort to advance a female-friendly engineering and information technology education at UMBC. There is also an Affiliates Program that has been expanded in recent years.

Cyber Scholars UMBC Cyber Scholars are awarded $5,000- $15,000 per year during the four-year program. The goal of the UMBC Cyber Scholars Program is to prepare the next generation of cybersecurity professionals in an increasingly digital age, with a focus on increasing the participation of women and other underrepresented groups in this fast-growing field. The UMBC Cyber Scholars Program is directed by the UMBC Center for Cybersecurity and run in partnership with UMBC's CWIT. The program was started through a generous $1 million grant from the Northrop Grumman Foundation. There is also an Affiliates Program that has been expanded in recent years.

Grand Challenge Scholars The former Associate Dean of the COEIT, Dr. Marie desJardins, created the Grand Challenge Scholars Program (GCSP) at UMBC in 2015. The GCSP aligns strongly with the institutional goals outlined in the 2015 UMBC and COEIT strategic plans and its design is strongly influenced by UMBC's culture of innovation and diversity. The program was approved by the National Academy of Engineering in 2016, becoming the 26th approved program in the country. In August 2018 the program received its third cohort, reaching a total of 29 scholars. Although the majority of the scholars are from majors in COEIT, there are several students majoring in programs in the other two colleges on campus. Because of the focus of the GCSP it attracts a broadly diverse population of students.

McNair Scholars Funded by the U.S. Department of Education, the Ronald E. McNair Post Baccalaureate Achievement (McNair Scholars) Program provides experiences that prepare students for graduate education in all disciplines and has been in operation at UMBC since 1992. The program involves students in research, mentoring, and other scholarly activities. McNair participants are from diverse backgrounds and have demonstrated strong academic potential. Annually, McNair Scholars are selected from among eligible UMBC students to participate in a variety of activities designed to prepare them to progress to earn doctoral degrees. Eligible participants are low-income, first-generation college students, or are members of groups underrepresented in graduate education. On average, three of the students in a given UMBC McNair Scholar cohort are from COEIT programs in recent years.

Meyerhoff Biomedical Graduate Fellows This program focuses on supporting underrepresented minority STEM graduate students. The program provides workshops and continuous mentors and has just graduated it 100th PhD. Since 2005, 108 Fellows have enrolled in STEM graduate programs at UMBC and University of Maryland, College Park (UMCP). 9 doctorates and 47 master's degrees have been awarded with 63 Fellows currently in the program (17 master's and 46 doctoral students).

Meyerhoff Scholars This premiere undergraduate success program has been recognized by the National Science Foundation and The New York Times as a national model. Scores of representatives from federal agencies, campuses, and corporations across the country have visited UMBC's campus to learn more about the program's success. The College Board's National Task Force on Minority High Achievement praised the Meyerhoff Scholars Program as an example that could provide broader educational lessons.

NIH STEM BUILD This program is an undergraduate success initiative and research study at UMBC funded by the National Institutes of Health (NIH). UMBC is investigating ways to enhance the diversity and success of students who have the goal of pursuing baccalaureate degrees in the STEM. The focus of this initiative is to promote matriculation of students into the biomedical and behavioral research fields. On average two to four students per year from COEIT participate in NIH STEM BUILD programs.

Sherman Scholars The foundation of the Sherman Teacher Scholars Program is our high achieving students who possess a passion for STEM disciplines and a passion for social justice connected to providing quality education for all children. Sherman Scholars have meaningful experiences that position them to attain academic success and to be well prepared for student teaching and full-time employment. It is our goal to help students fund as much of their academic costs as possible. Sherman awards range from $3000-$15,000 per academic year. We assist our students in finding additional financial resources.

APPENDIX C Strategies and Tactics for Recruiting to Improve Diversity and Excellence

UMBC STRIDE: (Committee on Strategies and Tactics for Recruiting to Improve Diversity and Excellence) is a faculty-led group that provides peer-to-peer training on the ways that overt discrimination, implicit bias, accumulated advantage and disadvantage, and the influence of gender and racial schemas have inhibited the recruitment and hiring of underrepresented minority faculty. STRIDE also provides guidance on best practices that will maximize the likelihood that diverse candidates for faculty positions will be identified, recruited, and hired at UMBC. The Committee leads workshops for faculty and administrators involved in every stage of the hiring process. It also works directly with individual departments by meeting with chairs, faculty search committees, and other department members involved with recruitment and hiring.

Search Committee Chair Implicit Bias Training: All faculty search committee chairs are required to attend this training on best practices for recruiting a diverse pool of applicants, developing and using fair metrics for the evaluation of candidates, and minimizing the impact of inherent racial and gender bias throughout the hiring process.

Procedures for Enhancing Faculty Diversity for Active Faculty Searches: UMBC strives to be intentional and deliberate in its efforts to promote diversity in faculty recruitment. Before receiving permission to conduct a faculty search, departments are required to develop a diversity recruitment plan, which specifically outlines how departments will recruit for the opening with the primary aim of assembling a diverse applicant pool. Departments may include where they will place the job advertisement, conferences they will attend in-person to recruit for the position, and also individuals, colleagues, and programs/universities they will contact to invite to apply or publicize the opening within their networks. When creating these plans, departments often consult with the Program Coordinator for Faculty Diversity before their review by the Dean and approval by the Provost.

Each Dean monitors the diversity of the candidate pool for every position within his or her College during the course of the search. The Dean's authorization to bring finalists for campus interviews is contingent upon the robustness of the diversity of candidates in the pool in comparison to doctorates produced in the disciplines for which the search is conducted. Also, the Dean review the diversity of candidates selected for on-campus interviews and invite candidates to private meetings with representatives from the Executive Committee on URM Faculty and our community-based faculty groups.

UMBC has implemented the use of *Interfolio*, an online faculty search software, to assist in improving our faculty diversity recruitment efforts. This software receives faculty job applications and allows the Dean to monitor the aggregate diversity of the pool for each active search. The Dean uses this information to determine if the diversity of the applicant pool for a faculty search is consistent with the diversity of Ph.D. holders in a specific field as defined by the NSF's Annual Survey of Earned Doctorates. When the diversity of the candidate pool is not consistent with the report, hiring committees often are not permitted to begin reviewing applications and must continue their efforts to assemble a diverse pool of applicants for the position. Finally, in addition to monitoring the diversity of job applicant pools for faculty positions, *Interfolio*'s online review and evaluation features increase transparency in the search committee's review of candidates. Before evaluating any of the job applications, hiring committees must develop the criteria/questions they will use to vet candidates.

The use of clear and consistent guidelines helps ensure that all applicants are reviewed using the same criteria that help diminish implicit bias and other forms of discrimination.

INTERVENTIONS TO ATTRACT POTENTIAL FUTURE FACULTY:

We understand the importance of establishing relationships with potential future faculty early to increase the number of minority faculty who choose to come to UMBC. We also know that a long-term record of establishing deep connections with academic communities of color must be achieved well in advance of our active recruitment efforts if we are to be successful. In particular, we believe that providing the following early pathways to a faculty career at UMBC may prove to yield even greater results.

Postdoctoral Fellowships for Faculty Diversity: UMBC's Postdoctoral Fellowship for Faculty Diversity is a two-year in residence fellowship designed to increase faculty diversity at UMBC by supporting the success of promising new Ph.D. recipients and preparing those scholars for possible tenure track appointments at UMBC. During the two-year appointment, UMBC provides fellows with teaching and research mentors and professional development opportunities across campus. Fellowship recipients are provided with a stipend, health benefits, and additional funding for conference travel and the preparation of scholarly work, office space with a computer, library and other privileges at the university. (Profiles of our current Fellows: http://facultydiversity.umbc.edu/postdocs/)

The Emerging Scholars/Get to Know UMBC Program: The Emerging Scholars Program provides departments, centers, and programs with funding to host advanced graduate students and junior faculty from underrepresented communities on campus for a two-day immersion experience. The Emerging Scholars Program seeks to (a) elevate the visibility of UMBC within networks of graduate students and junior faculty working with underrepresented communities; (b) increase the number of job applicants from underrepresented communities; (c) strengthen information sharing and candidate identification strategies for future recruitment of underrepresented faculty; and (d) enhance the exposure of UMBC students to a pedagogically and demographically diverse faculty.

Outreach Activities: These activities are designed to attract potential candidates for active faculty searches and to heighten the national visibility of UMBC's commitment to faculty diversity among emerging minority scholars for future searches.

• *UMBC Faculty Diversity Website*: This website serves as a public platform for an external and internal audience and gives visibility to UMBC's on-going diversity initiatives. The website includes links to apply for all of UMBC's faculty openings, highlights the research and accomplishments of our diverse community of scholars, showcases specific programs linked to diversity recruitment and retention, and provides information about UMBC's community-based faculty groups. (The website can be accessed at http://facultydiversity.umbc.edu/).

• *SREB Compact for Faculty Diversity*: The annual Compact for Faculty Diversity is the largest gathering of early-career minority Ph.D. scholars in the nation. Each year, our campus sends a team of faculty and administrators to actively recruit potential future faculty and to heighten the national visibility of UMBC among academic communities of color. UMBC also has access to the SREB doctoral scholars database that is used in our diversity recruitment activities.

• *Higher Education Recruitment Consortium*: UMBC is a founding member and advisory board member of the Mid-Atlantic Higher Education Recruitment Consortium (HERC). HERC is a non-profit consortium of over 700 colleges, universities, hospitals, research labs, government agencies, and related non- and for-profit organizations. Consortium members share a commitment to hiring the most diverse and talented faculty, staff, and executives.

• *Faculty Field Networking*: UMBC faculty attending targeted disciplinary conferences routinely take and share information related to UMBC's faculty openings and commitment to the value of diversity. Examples of targeted conferences include the Annual Biomedical Research Conference for Minority Students, the Annual Ford Foundation meeting, the Grace Hopper Celebration of Women in Computing Institute, the National Women's Studies Association Conference, and the Institute of Electrical and Electronic Engineers meeting.

FOSTERING COMMUNITY AND NETWORKS OF SUPPORT FOR FACULTY DIVERSITY

UMBC's is dedicated to cultural and ethnic diversity, social responsibility and lifelong learning. To that end, UMBC must foster an environment in which a community of diverse faculty are supported and can thrive in their careers.

Community-Based Faculty Groups: UMBC is proud to have four faculty organized community- based groups that provide a network of support for current faculty and prospective faculty. Each group receives annual funds and supports from the Office of the Provost or the Office of the Dean for their activities. We encourage and support the formation of additional community-based faculty groups as faculty interest and need arise.

• *College of Arts, Humanities, and Social Sciences Black Faculty Committee*: This committee works to improve the recruitment, retention, and promotion of black faculty through mentoring, information sharing, policy development, and collaborative teaching and research.

• *Latino/Hispanic Faculty Association*: This association promotes recruitment, retention, and success of Latino/Hispanic faculty and stimulates UMBC's links with the surrounding Latino community.

• *LGBT Faculty/Staff Assoc*iation: This association promotions and support opportunities for Lesbian, Gay, Bisexual, and Transgender faculty and staff at UMBC and reflects LGBT visibility and diversity to the wider community.

• *Women in Science and Engineering (WISE)*: This group supports and encourages women STEM faculty through mentoring, development opportunities, policy development, advocacy, and educational programs.

• *College of Arts, Humanities and Social Sciences Women's Faculty Network*: This network supports the recruitment and advancement of diverse women faculty through peer mentoring, symposia, teaching circles, writing groups, and related activities. The network is sponsored by the Coordinating Committee of the Department of Gender and Women's Studies.

UMBC Eminent Scholar Mentoring Program: This two-year formal mentoring program establishes a mentoring relationship between newly hired assistant professors and a prominent external researcher in their field. This program was initially developed to support the professional development women faculty in STEM and minority faculty across all disciplines but now extends to all new assistant professors on campus. This mentoring relationship gives the UMBC faculty member a connection to their larger research community to enhance their success as they advance through the ranks of academia.

CRLT Players: The CRLT Players are a theater group from the University of Michigan which provides interactive performances targeting the barriers that inhibit the recruitment and advancement of a diverse faculty at institutions of higher education. The Players returned for their second performance at UMBC during Spring 2016 with a special focus on departmental climate and culture.

PROMISE: Maryland's AGEP: Maryland's AGEP, sponsored by the NSF, is designed to increase the numbers and diversity of graduate students and postdoctoral fellows in STEM who will pursue careers in the professoriate. The PROMISE AGEP: Maryland Transformation (AGEP-T) is a collaborative between UMBC, UMCP, and the University of Maryland Baltimore (UMB), and it includes participation from all 12 institutions within the University System of Maryland. The PROMISE AGEP has a number of programs that are designed to recruit, cultivate, retain, and train underrepresented graduate students in STEM fields. PROMISE programs such as The Dissertation House, and the Summer Success Institute (SSI) have been pivotal interventions that contribute to degree completion and a sense of community that even involves members of students' families as stakeholders.

Faculty ADVANCEment Workshops: These workshops are open to all UMBC faculty and provide the information needed to successfully advance through the ranks of academia. Particular attention is paid to ensuring that a diverse faculty community has clear and transparent opportunities to thrive at UMBC.

Faculty Family Support Plans: These plans enable faculty members to create individual plans, which allow them to reduce or otherwise modify their workload, especially teaching duties, to maintain a work/life balance while tending to a variety of family needs, including childbirth, adoption, elder care, and family illness.

On-Ramps to Full Professor: A NSF grant, "On-Ramps" to Full Professor: Institutional Support for Post-Family Leave Faculty Research Reintegration," offers calibrated support at critical junctures for post-family leave associate professor women to accelerate research productivity while minimizing the effects of productivity gaps.

Dissemination Efforts: UMBC routinely attends conferences to share our efforts to diversify our faculty body and learn promising practices from other institutions of higher education. In recent years, UMBC has attended and/or presented at the Southern Regional Education Board's Institute on Teaching and Mentoring, the Annual Biomedical Research Conference for Minority Students, the National Society of Black Engineering, the Annual Black Engineer of the Year Award Conference, the STEM Women of Color Conclave, the Society for the Advancement of Chicanos and Native Americans in Science, the National Women's Studies Association Conference, the Grace Hopper Conference, the Latin American and Caribbean Consortium of Engineering Institutions, the Women in Engineering Proactive Network, the American Society for Engineering Education, and the World Engineering Education Forum.

APPENDIX D

Detailed Data currently available from UMBC associated with ASEE Diversity Initiative

Table A.1 UMBC Personnel

UMBC	Fall 2018			Fall 2017			Fall 2016		
College of Engineering and Information Technology	**Total**	**Women**	**URM**	**Total**	**Women**	**URM**	**Total**	**Women**	**URM**
Tenure Track Instructional Faculty									
Professor	30	6	2	32	8	2	31	7	1
Associate Professor	27	8	0	26	8	1	26	9	1
Assistant Professor	23	7	2	27	9	1	22	8	1
Tenure Track Total	80	21	4	85	25	4	79	24	3
Non-Tenure Track Instructional Faculty Full Time									
Lecturer	20	7	1	18	9	2	18	9	3
Professor the Practice	5	1	1	4	0	0	4	1	0
Non-Tenure Track Instructional Faculty Part Time									
Adjunct Instructor	124	27	15	108	21	11	105	21	12
Researchers									
Postdoctoral Fellows	7	2	0	5	3	0	6	5	1
Non-Teaching Researchers	17	5	1	14	2	1	23	6	2
Administration									
Department Chairs/Dean	5	0	0	5	0	0	5	1	1
Academic Staff	50	34	7	49	32	7	50	36	5
Totals	308	97	29	288	92	25	290	103	27

Table B.1 Undergraduate Student Enrollment

UNDERGRADUATE PROGRAM		Fall 2018 M		F		URM		Total	TOTAL
Business Technology Administration (B.A.)	FT	158	68.7%	72	31.3%	52	22.6%	230	290
	PT	42	70.0%	18	30.0%	7	11.7%	60	
Chemical Engineering (B.S.)	FT	147	57.2%	110	42.8%	81	31.5%	257	280
	PT	17	73.9%	6	26.1%	9	39.1%	23	
Computer Engineering (B.S.)	FT	269	82.5%	57	17.5%	61	18.7%	326	366
	PT	34	85.0%	6	15.0%	7	17.5%	40	
Computer Science (B.S.)	FT	1011	82.2%	219	17.8%	150	12.2%	1230	1372
	PT	118	83.1%	24	16.9%	13	9.2%	142	
Information Systems (B.S.)	FT	570	76.2%	178	23.8%	129	17.2%	748	895
	PT	126	85.7%	21	14.3%	31	21.1%	147	
Mechanical Engineering (B.S.)	FT	455	81.1%	106	18.9%	93	16.6%	561	619
	PT	51	87.9%	7	12.1%	5	8.6%	58	
Engineering (Undeclared)	FT	113	80.7%	27	19.3%	31	22.1%	140	148
	PT	7	87.5%	1	12.5%	1	12.5%	8	
Totals	FT	2723	78.0%	769	22.0%	597	17.1%	3492	3970
	PT	395	82.6%	83	17.4%	73	15.3%	478	
TOTALS		3118	78.5%	852	21.5%	670	16.9%	3970	

UNDERGRADUATE PROGRAM		Fall 2017 M		F		URM		Total	TOTAL
Business Technology Administration (B.A.)	FT	144	65.5%	76	34.5%	52	23.6%	220	278
	PT	40	69.0%	18	31.0%	7	12.1%	58	
Chemical Engineering (B.S.)	FT	168	57.9%	122	42.1%	81	27.9%	290	323
	PT	24	72.7%	9	27.3%	9	27.3%	33	
Computer Engineering (B.S.)	FT	254	81.2%	59	18.8%	61	19.5%	313	348
	PT	33	94.3%	2	5.7%	7	20.0%	35	
Computer Science (B.S.)	FT	830	82.5%	176	17.5%	150	14.9%	1006	1152
	PT	122	83.6%	24	16.4%	13	8.9%	146	
Information Systems (B.S.)	FT	555	77.1%	165	22.9%	129	17.9%	720	854
	PT	110	82.1%	24	17.9%	31	23.1%	134	
Mechanical Engineering (B.S.)	FT	428	82.6%	90	17.4%	93	18.0%	518	585
	PT	56	83.6%	11	16.4%	5	7.5%	67	
Engineering (Undeclared)	FT	95	74.8%	32	25.2%	31	24.4%	127	134
	PT	6	85.7%	1	14.3%	1	14.3%	7	
Totals	FT	2474	77.5%	720	22.5%	597	18.7%	3194	3674
	PT	391	81.5%	89	18.5%	73	15.2%	480	
TOTALS		2865	78.0%	809	22.0%	670	18.2%	3674	

UNDERGRADUATE PROGRAM		Fall 2016 M		F		URM		Total	TOTAL
Business Technology Administration (B.A.)	FT	154	72.6%	58	27.4%	52	24.5%	212	268
	PT	40	71.4%	16	28.6%	7	12.5%	56	
Chemical Engineering (B.S.)	FT	180	62.5%	108	37.5%	81	28.1%	288	326
	PT	26	68.4%	12	31.6%	9	23.7%	38	
Computer Engineering (B.S.)	FT	247	84.6%	45	15.4%	61	20.9%	292	332
	PT	38	95.0%	2	5.0%	7	17.5%	40	
Computer Science (B.S.)	FT	773	82.9%	159	17.1%	150	16.1%	932	1067
	PT	122	90.4%	13	9.6%	13	9.6%	135	
Information Systems (B.S.)	FT	497	79.0%	132	21.0%	129	20.5%	629	757
	PT	105	82.0%	23	18.0%	31	24.2%	128	
Mechanical Engineering (B.S.)	FT	407	82.1%	89	17.9%	93	18.8%	496	553
	PT	52	91.2%	5	8.8%	5	8.8%	57	
Engineering (Undeclared)	FT	130	75.1%	43	24.9%	31	17.9%	173	184
	PT	9	81.8%	2	18.2%	1	9.1%	11	
Totals	FT	2388	79.0%	634	21.0%	597	19.8%	3022	3487
	PT	392	84.3%	73	15.7%	73	15.7%	465	
TOTALS		2780	79.7%	707	20.3%	670	19.2%	3487	

Table B.2 Undergraduate Student 6-year Graduation Rates

First-Time/Full-Time Freshman All COEIT Programs	Fall 2012 Cohort #	Grad Within 6 Yrs	Grad Within 6 Yrs Same Coll	Fall 2011 Cohort #	Grad Within 6 Yrs	Grad Within 6 Yrs Same Coll	Fall 2010 Cohort #	Grad Within 6 Yrs	Grad Within 6 Yrs Same Coll
Male COEIT	445	62.0 %	49.2 %	324	56.2 %	42.9 %	372	59.9 %	45.7 %
Female COEIT	92	72.8 %	47.8 %	57	84.2 %	56.1 %	69	75.4 %	46.4 %
URM COEIT	68	57.4 %	38.2 %	60	61.7 %	48.3 %	68	47.1 %	33.8 %

Table B.3 Bachelor Degrees

	AY 2018							AY 2017							AY 2016						
UNDERGRADUATE PROGRAM	M		F		URM		Total	M		F		URM		Total	M		F		URM		Total
Business Technology Administration (B.A.)	58	66.7%	29	33.3%	10	11.5%	87	47	67.1%	23	32.9%	18	25.7%	70	58	69.0%	26	31.0%	15	17.9%	84
Chemical Engineering (B.S.)	43	65.2%	23	34.8%	14	21.2%	66	39	67.2%	19	32.8%	14	24.1%	58	39	73.6%	14	26.4%	4	7.5%	53
Computer Engineering (B.S.)	48	81.4%	11	18.6%	10	16.9%	59	36	85.7%	6	14.3%	10	23.8%	42	47	88.7%	6	11.3%	10	18.9%	53
Computer Science (B.S.)	149	81.9%	33	18.1%	19	10.4%	182	152	84.0%	29	16.0%	17	9.4%	181	135	90.6%	14	9.4%	11	7.4%	149
Information Systems (B.S.)	165	75.7%	53	24.3%	45	20.6%	218	144	81.4%	33	18.6%	26	14.7%	177	148	79.6%	38	20.4%	31	16.7%	186
Mechanical Engineering (B.S.)	96	83.5%	19	16.5%	14	12.2%	115	82	80.4%	20	19.6%	15	14.7%	102	92	81.4%	21	18.6%	12	10.6%	113
TOTALS	559	76.9%	168	23.1%	112	15.4%	727	500	79.4%	130	20.6%	100	15.9%	630	519	81.3%	119	18.7%	83	13.0%	638

AY (End of Year) degrees include August, December and May graduates. For example, AY05 degrees were awarded in August 2004, December 2004 and May 2005.

Table C.1 Master's Student Enrollment

COEIT GRADUATE STUDENT PROFILE (PT + FT)

		Fall 2018								Fall 2017								Fall 2016							
MASTER PROGRAM		M		F		URM		Total	TOTAL	M		F		URM		Total	TOTAL	M		F		URM		Total	TOTAL
Chemical & Biochemical	FT	4	80.0%	1	20.0%	0	0.0%	**5**	7	5	71.4%	2	28.6%	0	0.0%	**7**	8	2	66.7%	1	33.3%	0	0.0%	**3**	
Engineering (M.S.)	PT	1	50.0%	1	50.0%	0	0.0%	**2**		0	0.0%	1	100.0%	0	0.0%	**1**		1	33.3%	2	66.7%	0	0.0%	**3**	6
Computer Engineering	FT	13	76.5%	4	23.5%	0	0.0%	**17**	24	11	73.3%	4	26.7%	0	0.0%	**15**	20	11	0.0%	0	0.0%	0	0.0%	**11**	
(M.S.)	PT	5	71.4%	2	28.6%	0	0.0%	**7**		4	80.0%	1	20.0%	0	0.0%	**5**		4	80.0%	1	20.0%	1	20.0%	**5**	16
	FT	73	69.5%	32	30.5%	1	1.0%	**105**	132	68	69.4%	30	30.6%	0	0.0%	**98**	128	54	67.5%	26	32.5%	1	1.3%	**80**	
Computer Science (M.S.)	PT	20	74.1%	7	25.9%	2	7.4%	**27**		26	86.7%	4	13.3%	3	10.0%	**30**		20	90.9%	2	9.1%	1	4.5%	**22**	102
	FT	22	71.0%	9	29.0%	8	25.8%	**31**	150	15	55.6%	12	44.4%	8	29.6%	**27**	135	22	71.0%	9	29.0%	7	22.6%	**31**	
Cybersecurity (M.P.S.)	PT	89	74.8%	30	25.2%	25	21.0%	**119**		84	77.8%	24	22.2%	33	30.6%	**108**		94	80.3%	23	19.7%	36	30.8%	**117**	148
	FT	12	60.0%	8	40.0%	2	10.0%	**20**	80	1	100.0%	0	0.0%	0	0.0%	**1**	7	--	--	--	--	--	--	--	
Data Science (M.P.S.)	PT	38	63.3%	22	36.7%	14	23.3%	**60**		5	83.3%	1	16.7%	1	16.7%	**6**		--	--	--	--	--	--	--	--
Electrical Engineering	FT	13	86.7%	2	13.3%	2	13.3%	**15**	20	10	90.9%	1	9.1%	1	9.1%	**11**	16	9	75.0%	3	25.0%	2	16.7%	**12**	
(M.S.)	PT	5	100.0%	0	0.0%	0	0.0%	**5**		4	80.0%	1	20.0%	0	0.0%	**5**		3	75.0%	1	25.0%	0	0.0%	**4**	16
Engineering Management	FT	19	57.6%	14	42.4%	1	3.0%	**33**	61	21	70.0%	9	30.0%	1	3.3%	**30**	54	11	73.3%	4	26.7%	1	6.7%	**15**	
(M.S.)	PT	16	57.1%	12	42.9%	10	35.7%	**28**		19	79.2%	5	20.8%	5	20.8%	**24**		31	75.6%	10	24.4%	9	22.0%	**41**	56
Environmental	FT	1	100.0%	0	0.0%	0	0.0%	**1**	3	1	100.0%	0	0.0%	1	100.0%	**1**	4	1	0.0%	0	0.0%	0	0.0%	**1**	
Engineering (M.S.)	PT	1	50.0%	1	50.0%	0	0.0%	**2**		2	66.7%	1	33.3%	0	0.0%	**3**		2	66.7%	1	33.3%	1	33.3%	**3**	4
Health Information	FT	4	28.6%	10	71.4%	3	21.4%	**14**	47	6	35.3%	11	64.7%	8	47.1%	**17**	52	5	38.5%	8	61.5%	8	61.5%	**13**	
Technology (M.P.S.)	PT	10	30.3%	23	69.7%	10	30.3%	**33**		12	34.3%	23	65.7%	16	45.7%	**35**		15	41.7%	21	58.3%	13	36.1%	**36**	49
Human-Centered	FT	8	34.8%	15	65.2%	0	0.0%	**23**	37	6	33.3%	12	66.7%	0	0.0%	**18**	35	10	55.6%	8	44.4%	0	0.0%	**18**	
Computing (M.S.)	PT	2	14.3%	12	85.7%	1	7.1%	**14**		10	58.8%	7	41.2%	3	17.6%	**17**		9	56.3%	7	43.8%	3	18.8%	**16**	34
Information Systems	FT	45	47.4%	50	52.6%	1	1.1%	**95**	131	44	49.4%	45	50.6%	1	1.1%	**89**	133	83	58.9%	58	41.1%	3	2.1%	**141**	
(trad) (M.S.)	PT	22	61.1%	14	38.9%	5	13.9%	**36**		31	70.5%	13	29.5%	8	18.2%	**44**		40	61.5%	25	38.5%	6	9.2%	**65**	206
Information Systems (on-	FT	7	58.3%	5	41.7%	4	33.3%	**12**	146	9	90.0%	1	10.0%	5	50.0%	**10**	139	3	50.0%	3	50.0%	1	16.7%	**6**	
line) (M.S.)	PT	88	65.7%	46	34.3%	34	25.4%	**134**		83	64.3%	46	35.7%	37	28.7%	**129**		97	69.8%	42	30.2%	31	22.3%	**139**	145
Mechanical Engineering	FT	7	63.6%	4	36.4%	2	18.2%	**11**	22	7	77.8%	2	22.2%	1	11.1%	**9**	23	15	75.0%	5	25.0%	2	10.0%	**20**	
(M.S.)	PT	9	81.8%	2	18.2%	0	0.0%	**11**		11	78.6%	3	21.4%	1	7.1%	**14**		13	76.5%	4	23.5%	2	11.8%	**17**	37
Systems Engineering	FT	4	66.7%	2	33.3%	0	0.0%	**6**	22	5	83.3%	1	16.7%	1	16.7%	**6**	29	3	60.0%	2	40.0%	1	20.0%	**5**	
(M.S.)	PT	12	75.0%	4	25.0%	6	37.5%	**16**		17	73.9%	6	26.1%	6	26.1%	**23**		23	85.2%	4	14.8%	6	22.2%	**27**	32
Technical Management	FT	1	100.0%	0	0.0%	0	0.0%	**1**	9	1	100.0%	0	0.0%	0	0.0%	**1**	2	--	--	--	--	--	--	--	
(M.P.S.)	PT	6	75.0%	2	25.0%	2	25.0%	**8**		1	100.0%	0	0.0%	0	0.0%	**1**		--	--	--	--	--	--	--	--
	FT	233	59.9%	156	40.1%	24	6.2%	**389**	891	210	61.8%	130	38.2%	27	7.9%	**340**	785	229	64.3%	127	35.7%	26	7.3%	**356**	
Totals	PT	324	64.5%	178	35.5%	109	21.7%	**502**		309	69.4%	136	30.6%	113	25.4%	**445**		352	71.1%	143	28.9%	109	22.0%	**495**	851
TOTALS		557	62.5%	334	37.5%	133	14.9%	**891**		519	66.1%	266	33.9%	140	17.8%	**785**		581	68.3%	270	31.7%	135	15.9%	**851**	

Table C.2 Master's Student 4-year Graduation Rates

Master's Degree Students all COEIT Programs	Fall 2014 Cohort #	Grad Within 4 Yrs	Fall 2013 Cohort #	Grad Within 4 Yrs	Fall 2012 Cohort #	Grad Within 4 Yrs
Male COEIT	170	72.4 %	181	70.2 %	194	66.0 %
Female COEIT	86	81.4 %	92	70.7 %	84	69.0 %
URM COEIT	36	66.7 %	41	61.0 %	56	62.5 %
International	92	89.1 %	94	86.2 %	77	85.7 %

UMBC

Table C.3 Master's Degrees

MASTER PROGRAM	2018							2017							2016						
	M		F		URM		Total	M		F		URM		Total	M		F		URM		Total
Chemical & Biochemical Engineering (M.S.)	2	100.0%	0	0.0%	0	0.0%	2	2	66.7%	1	33.3%	1	33.3%	3	5	62.5%	3	37.5%	2	25.0%	8
Computer Engineering (M.S.)	10	90.9%	1	9.1%	0	0.0%	11	3	75.0%	1	25.0%	0	0.0%	4	4	80.0%	1	20.0%	2	40.0%	5
Computer Science (M.S.)	24	70.6%	10	29.4%	0	0.0%	34	19	65.5%	10	34.5%	1	3.4%	29	32	76.2%	10	23.8%	15	35.7%	42
Cybersecurity (M.P.S.)	40	74.1%	14	25.9%	17	31.5%	54	53	79.1%	14	20.9%	19	28.4%	67	44	77.2%	13	22.8%	0	0.0%	57
Electrical Engineering (M.S.)	5	83.3%	1	16.7%	0	0.0%	6	5	100.0%	0	0.0%	2	40.0%	5	2	50.0%	2	50.0%	0	0.0%	4
Engineering Management (M.S.)	20	90.9%	2	9.1%	2	9.1%	22	21	72.4%	8	27.6%	8	27.6%	29	30	69.8%	13	30.2%	8	18.6%	43
Environmental Engineering (M.S.)	3	100.0%	0	0.0%	1	33.3%	3	0	0.0%	1	100.0%	0	0.0%	1	1	100.0%	0	0.0%	0	0.0%	1
Health Information Technology (M.P.S.)	7	31.8%	15	68.2%	13	59.1%	22	7	38.9%	11	61.1%	5	27.8%	18	*	*	*	*	*	*	*
Human-Centered Computing (M.S.)	9	56.3%	7	43.8%	2	12.5%	16	7	46.7%	8	53.3%	1	6.7%	15	7	43.8%	9	56.3%	7	43.8%	16
Information Systems - trad. (M.S.)	31	66.0%	16	34.0%	14	29.8%	47	76	60.8%	49	39.2%	7	5.6%	125	59	65.6%	31	34.4%	1	1.1%	90
Information Systems - online (M.S.)	42	56.8%	32	43.2%	2	2.7%	74	31	66.0%	16	34.0%	6	12.8%	47	31	64.6%	17	35.4%	5	10.4%	48
Mechanical Engineering (M.S.)	11	78.6%	3	21.4%	2	14.3%	14	10	83.3%	2	16.7%	2	16.7%	12	8	88.9%	1	11.1%	0	0.0%	9
Systems Engineering (M.S.)	10	71.4%	4	28.6%	4	28.6%	14	10	83.3%	2	16.7%	2	16.7%	12	17	81.0%	4	19.0%	0	0.0%	21
TOTALS	214	67.1%	105	32.9%	57	17.9%	319	244	66.5%	123	33.5%	54	14.7%	367	240	69.8%	104	30.2%	40	11.6%	344

AY (End of Year) degrees include August, December and May graduates. For example, AY05 degrees were awarded in August 2004, December 2004 and May 2005.

Table D.1 Doctoral Student Enrollment

COEIT GRADUATE STUDENT PROFILE (PT + FT)

DOCTORATE PROGRAM		FALL 2018								Fall 2017								FALL 2016							
		M		F		URM		Total	TOTAL	M		F		URM		Total	TOTAL	M		F		URM		Total	TOTAL
Chemical & Biochemical	FT	10	43.5%	13	56.5%	5	21.7%	23	25	11	47.8%	12	52.2%	5	21.7%	23	25	9	52.9%	8	47.1%	3	17.6%	17	17
Engineering (Ph.D.)	PT	2	100.0%	0	0.0%	0	0.0%	2		1	0.0%	1	0.0%	0	0.0%	2		0	0.0%	0	0.0%	0	0.0%	0	
Computer Engineering	FT	9	81.8%	2	18.2%	0	0.0%	11	19	14	93.3%	1	6.7%	0	0.0%	15	19	15	78.9%	4	21.1%	0	0.0%	19	24
(Ph.D.)	PT	6	75.0%	2	25.0%	0	0.0%	8		3	0.0%	1	25.0%	0	0.0%	4		5	100.0%	0	0.0%	0	0.0%	5	
	FT	49	80.3%	12	19.7%	3	4.9%	61	79	41	78.8%	11	21.2%	1	1.9%	52	73	40	76.9%	12	23.1%	2	3.8%	52	67
Computer Science (Ph.D.)	PT	17	94.4%	1	5.6%	1	5.6%	18		19	90.5%	2	9.5%	2	9.5%	21		12	80.0%	3	20.0%	2	13.3%	15	
Electrical Engineering	FT	24	66.7%	12	33.3%	3	8.3%	36	52	22	73.3%	8	26.7%	0	0.0%	30	47	23	79.3%	6	20.7%	0	0.0%	29	44
(Ph.D.)	PT	15	93.8%	1	6.3%	4	25.0%	16		12	70.6%	5	29.4%	5	29.4%	17		12	80.0%	3	20.0%	6	40.0%	15	
Environmental	FT	8	80.0%	2	20.0%	1	10.0%	10	10	6	85.7%	1	14.3%	1	14.3%	7	7	6	60.0%	4	40.0%	0	0.0%	10	10
Engineering (Ph.D.)	PT	0	0.0%	0	0.0%	0	0.0%	0		0	0.0%	0	0.0%	0	0.0%	0		0	0.0%	0	0.0%	0	0.0%	0	
Human-Centered	FT	6	50.0%	6	50.0%	3	25.0%	12	16	5	45.5%	6	54.5%	2	18.2%	11	17	5	62.5%	3	37.5%	3	37.5%	8	15
Computing (Ph.D.)	PT	2	50.0%	2	50.0%	1	25.0%	4		3	50.0%	3	50.0%	2	33.3%	6		3	42.9%	4	57.1%	2	28.6%	7	
Information Systems	FT	22	47.8%	24	52.2%	1	2.2%	46	61	19	45.2%	23	54.8%	1	2.4%	42	56	24	51.1%	23	48.9%	3	6.4%	47	58
(Ph.D.)	PT	12	80.0%	3	20.0%	1	6.7%	15		13	92.9%	1	7.1%	1	7.1%	14		9	81.8%	2	18.2%	0	0.0%	11	
Mechanical Engineering	FT	25	83.3%	5	16.7%	6	20.0%	30	39	26	78.8%	7	21.2%	3	9.1%	33	41	30	88.2%	4	11.8%	5	14.7%	34	37
(Ph.D.)	PT	5	55.6%	4	44.4%	2	22.2%	9		7	87.5%	1	12.5%	3	37.5%	8		2	66.7%	1	33.3%	0	0.0%	3	
	FT	153	66.8%	76	33.2%	22	9.6%	229	301	144	67.6%	69	32.4%	13	6.1%	213	285	152	70.4%	64	29.6%	16	7.4%	216	272
Totals	PT	59	81.9%	13	18.1%	9	12.5%	72		58	80.6%	14	19.4%	13	18.1%	72		43	76.8%	13	23.2%	10	17.9%	56	
TOTALS		212	70.4%	89	29.6%	31	10.3%	301		202	70.9%	83	29.1%	26	9.1%	285		195	71.7%	77	28.3%	26	9.6%	272	

Table D.2 Doctoral Degrees

DOCTORATE PROGRAM	2018							2017							2016						
	M		F		URM		Total	M		F		URM		Total	M		F		URM		Total
Chemical & Biochemical Engineering (Ph.D.)	2	66.7%	1	33.3%	0	0.0%	3	1	100.0%	0	0.0%	0	0.0%	1	0	0.0%	1	100.0%	1	100.0%	1
Computer Engineering (Ph.D.)	2	100.0%	0	0.0%	0	0.0%	2	4	100.0%	0	0.0%	0	0.0%	4	1	100.0%	0	0.0%	1	100.0%	1
Computer Science (Ph.D.)	8	88.9%	1	11.1%	1	11.1%	9	8	72.7%	3	27.3%	0	0.0%	11	4	80.0%	1	20.0%	0	0.0%	5
Electrical Engineering (Ph.D.)	1	50.0%	1	50.0%	0	0.0%	2	3	60.0%	2	40.0%	0	0.0%	5	4	66.7%	2	33.3%	1	16.7%	6
Environmental Engineering (Ph.D.)	2	50.0%	2	50.0%	0	0.0%	4	0	0.0%	1	100.0%	0	0.0%	1	1	50.0%	1	50.0%	0	0.0%	2
Human-Centered Computing (Ph.D.)	2	100.0%	0	0.0%	1	50.0%	2	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	3	100.0%	1	33.3%	3
Information Systems (Ph.D.)	5	71.4%	2	28.6%	0	0.0%	7	5	50.0%	5	50.0%	1	10.0%	10	6	85.7%	1	14.3%	0	0.0%	7
Mechanical Engineering (Ph.D.)	2	100.0%	0	0.0%	0	0.0%	2	5	100.0%	0	0.0%	0	0.0%	5	2	100.0%	0	0.0%	0	0.0%	2
TOTALS	24	77.4%	7	22.6%	2	6.5%	31	26	70.3%	11	29.7%	1	2.7%	37	18	66.7%	9	33.3%	4	14.8%	27

AY (End of Year) degrees include August, December and May graduates. For example, AY05 degrees were awarded in August 2004, December 2004 and May 2005.

Table E.1 COEIT Students Requesting Accommodations for Disabilities

Plan Objective	2017	2018	2019
Bachelor	233	240	219
Master	11	10	12
Doctorate	7	8	8
Totals	251	258	239

Table F.1 COEIT Advisory Board(s)

2018-2019 12 members, 9 male, 3 female, 2 URM