Executive Summary

Blueprint for Academic Excellence
College of Engineering & Computing
AY2018-2019

Introduction

CEC offers nine undergraduate degrees through its six departments, as well as five undergraduate minors, eight PhD degrees, 21 Masters degrees, and two graduate certificates. The College enrolls 3,210 undergraduates (up from 1,122 in 2006), and 585 graduates. CEC has the third highest number of students in the SC Honors College (17%). CEC is investing significantly in its laboratories and its curricula, and is aggressively increasing its faculty count. The College is also investing in infrastructure for student success, and for enhanced productivity of its faculty. CEC is engaging in large and collaborative research with sister colleges, other academic institutions, government, and industry; and is also strengthening its relationship with employers for its students.

Highlights

•Ms. D'Aira Bryant (CS), Mr. Brock Fletcher (BME) and Mr. Dylan Madisetti (ME) received NSF Graduate Research Fellowships. Two others received honorable mention, as did another student for Goldwater Fellowship.
•Fall freshman class grew to 766 (+19.9%). This year, we are on pace to increase by another 10%.
•Number of African American students entering CEC increased by 54% from 63 to 97.
•US News Graduate Rankings for CEC improved from 79 to 67 among public universities.
•Hired 11 TT faculty and 7 instructors. Searching for 14 TT positions currently.
•Some very highly cited, and very well-funded faculty members; also active in IP generation.
•Increasing slate of industry sponsored capstone design projects.
•Meaningful industry, academic, and international collaborations.

Hossein Haj-Hariri, Dean
USC Educational Foundation Distinguished Professor

UNIVERSITY OF SOUTH CAROLINA
College of Engineering and Computing

Blueprint for Academic Excellence
College of Engineering & Computing
AY2018-2019

Table of Contents

Foundation for Academic Excellence

Mission Statement

We create and disseminate knowledge that advances the practice of engineering and computing. We are committed to working on complex projects that are inherently inter- and multidisciplinary. We leverage the comprehensive nature of the state's largest university to graduate liberally educated engineers and computer scientists capable of teaching themselves new knowledge beyond the boundaries of their education.

Updated: 03/01/2017

Vision Statement

•**Teaching Excellence:** Our College will be the premier destination of choice in the Southeastern U.S. for engineering and computing students, as well as the companies that hire them.
•**Research/Scholarship:** Our research productivity will be internationally recognized based upon the reputation of our faculty scholarship and its impact upon society.
•**Service:** We will lead the university and the state that supports us in the advancement and dissemination of knowledge in our fields of expertise.

Updated: 03/01/2017

Values

We value innovation, societal relevance, inclusivity, and collaboration.

Updated: 03/01/2017

Goals - Looking Back

Goals for the College of Engineering & Computing for the previous Academic Year.

Goal 1 - Sustainability of CEC Mission

Goal Statement	Keep the College on sound financial and administrative footing to sustain the goals in teaching, research/scholarship, and service. This goal underpins all other goals.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Enables the Mission, and the Vision.
Status	Extended to following Academic Year
Action Plan	
Achievements	•Investment in the undergraduate laboratories, preawards office personnel, professional advising and student services, TA support, lecturer support (moving toward elimination of TA-taught courses/sections) •Seeking and establishing partnerships •Return of 30% of the overhead to the department, and 1/3rd thereof to the faculty in further support of their research •Development of departmental budgets •Coordinating the IT practices across the College
Resources Utilized	
Goal Continuation	This goal remains in effect every year.
Goal Upcoming Plans	Detailed in the appropriate section.
Resources Needed	Classroom (lecture and computer), lab, and office spaceStartups
Goal Notes	Status: Completed successfully (for year 1) Progressing as expected (multi-year goal)

Goals - Real Time

Goals for the College of Engineering & Computing that are in progress for AY2018-2019.

Goal 1 - Research/Scholarship

Goal Statement	Enhance research by focusing on prominence: we will not cover all fields, but what we do, we will do extremely well. We will attract strong research faculty (possibly jointly appointed), support and resource existing research active faculty, and create critical mass in areas of strength. We will incentivize collaborative and large projects having high societal impact. And we will invest in infrastructure and student support through research startups and return of some of the overhead.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Fully aligned.
Status	Progressing as expected (multi-year goal)
Action Plan	•Hire new faculty in targeted areas that build upon existing research strengths, or create timely areas of research, that develop high-value multidisciplinary research opportunities. •Create incentives through return of indirect funds, allocation of CEC-supported graduate students, and creation of central pool of funds for maintenance of large and shared equipment •Identify equipment that could be placed in shared-use facilities
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Searches are culminating for 14 tenured or tenure track positions. Prior to the excellence-fund, resources were planned for maintaining the pace of hiring at about one dozen per year, including some very senior hires. •The areas of hiring were determined based on analyses by the departments, and the focus is on research areas that can leverage multiple departments. This practice will be continued. •Some of the synergistic activities will be co-located in order to facilitate equipment sharing and also enrich the experience of the undergraduate and graduate students in those labs. •Agreement are finalized with Shorelight.
Resources Needed	•A one-time injection of funds is needed to provide for startups. The pace of student growth in CEC is faster than that for any other college. •FRIP and other similar incentives should be continued. •Wet and specialized lab space is at a premium. As the nearly- 50 new faculty members will join CEC, they will need 100,000 square feet. Bert Storey Innovation Space provides some space, but we also need about 40,000 square feet of labs. CEC may need help in identifying space and resources to lease lab space, even after having leased 14,000+ sq. ft. in SCRA building.
Goal Notes	Unit Goals Management In Progress

Goal 2 - Service

Goal Statement	Provide leadership for university and state organizations aimed at enhancing engineering and computing education, practice, and research.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities
Alignment with Mission, Vision, and Values	Fully aligned.
Status	Progressing as expected (multi-year goal)
Action Plan	•Continue to offer programming courses in CSE as service courses. Expand the offering to make computing be part of the general education of all USC students. •Continue to offer programming courses in CSE as service courses. Expand the offering to make computing be part of the general education of all USC students. •Explore in detail 2+2 programs for online degree completion. •Identify faculty from CEC and College of Education to work together and with the schools for STEM outreach. •Continue active participation in economic engagement activities (Siemens, Samsung, IBM, Boeing, SIOS, Capgemini, Lending Tree, etc) •Continue to engage with international partners for exchange programs
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Ensure that the new budget model helps attract resources to CEC to support offering the current service courses by CSE. •Execute MOU's with SC State and Claflin on various joint/dual/accelerate degree options. •Continue to roll out the partnership with Caledonian University of Oman, and also with Shorelight. •Continue to strengthen the relationship with IBM, Boeing, Siemens, Samsung, Capgemini, SIOS, and Lending Tree, among others. •Continue to develop plans and resourcing options for a substantial maker and experiential space for USC and Columbia in the Biomass building.
Resources Needed	•Currently the college spends $570K+ on TA support for CSE service courses. •Continued support from the Office of Economic Engagement
Goal Notes	

Goal 3 - Teaching Excellence

Goal Statement	Enhance undergraduate education by decreasing the student-to-faculty ratio; enhance instructional laboratories, Improve advising and student support services; and Modernize curricula.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Fully aligned
Status	Progressing as expected (multi-year goal)
Action Plan	•Hired 11 faculty and 13 lecturers last year. •Invest in engineering and computing laboratory upgrades (~$500K/yr) •Implemented First Year Advising. Planning for Second Year Advising. •Expand Student Success Center programs in Swearingen •Continue to expand undergraduate Engineering and Computing Honors curricula tracks (5-6 HC specific courses per CEC major) •Improve recruiting strategies that target underrepresented students •Update Engineering and Computing course prerequisites while eliminating upper division hurdles to facilitate On Your Time graduation sequencing •Upgrade distance education facilities and modes of delivery •Nurture current international collaborations and continuously seek to foster new ones.
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Hiring 14+ faculty this year. This pace of hiring (~12/year) is needed in order to lower the student-to- faculty ratio from high 20's to 20-21. Peers and peer aspirants are in the high teens to 20. •Continue investing in engineering and computing laboratory upgrades (~$500K/yr set aside for labs and curricula). •Continue hiring lecturers and technicians as needed. •Need more computer classrooms to accommodate the IIT department and the growing enrollment in CSE and other departments, as well as serve the vision to have USC as one of the first public universities to require programming from all its students. •Develop a plan for financing an experiential learning facility in the woodchip area of the Biomass building. •Encourage the University to create more ~120 seat classrooms on the west side of the campus.
Resources Needed	•To cover the 24 Honors specific sections, 4 instructors are hired. Honors College and the Provost will need to cover 3 of those. •Instructional space, wet labs, and computer labs are areas where central help is needed. •Space in Sumwalt would be the natural choice for meeting our CEC need for computational classroom (3, accommodating 30, 30, and 50 students).
Goal Notes	

Goal 4 - Sustainability of CEC Mission

Goal Statement	Resource and budget the College's commitment to its long-term goals by evaluating its programs and activities based on cost, revenue, and mission impact.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Fully aligned
Status	Progressing as expected (multi-year goal)
Action Plan	Present well-justified and reasonable plans to the University for programs that leverage the College and the University.
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Continue to develop the budget for the departments. •Streamline post-award experience.
Resources Needed	•$570,000 one-time addition to make up for the CSE TA investment for service courses until the new budget model is instituted. •A major onetime addition to the budget to pay for faculty startups •Computer classroom space is needed in a central location on campus. Sumwalt is an ideal building based on location.
Goal Notes	

Goals - Looking Ahead

Goals for the College of Engineering & Computing that are slated for the upcoming year.

Goal 1 - Sustainability of CEC Mission

Goal Statement	Keep the College on sound financial and administrative footing to sustain the goals in teaching, research/scholarship, and service. This goal underpins all other goals.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Enables the Mission, and the Vision.
Status	Progressing as expected (multi-year goal)
Action Plan	
Achievements	•Investment in the undergraduate laboratories, preawards office personnel, professional advising and student services, TA support, lecturer support (moving toward elimination of TA-taught courses/sections) •Seeking and establishing partnerships •Return of 30% of the overhead to the department, and 1/3rd thereof to the faculty in further support of their research •Development of departmental budgets •Coordinating the IT practices across the College
Resources Utilized	
Goal Continuation	This goal remains in effect every year.
Goal Upcoming Plans	Detailed in the appropriate section.
Resources Needed	•Classroom (lecture and computer), lab, and office space •Startups
Goal Notes	Status: Completed successfully (for year 1) Progressing as expected (multi-year goal)

Goal 2 - Research/Scholarship

Goal Statement	Enhance research by focusing on prominence: we will not cover all fields, but what we do, we will do extremely well. We will attract strong research faculty (possibly jointly appointed), support and resource existing research active faculty, and create critical mass in areas of strength. We will incentivize collaborative and large projects having high societal impact. And we will invest in infrastructure and student support through research startups and return of some of the overhead.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Fully aligned.
Status	Progressing as expected (multi-year goal)
Action Plan	•Hire new faculty in targeted areas that build upon existing research strengths, or create timely areas of research, that develop high-value multidisciplinary research opportunities. •Create incentives through return of indirect funds, allocation of CEC-supported graduate students, and creation of central pool of funds for maintenance of large and shared equipment •Identify equipment that could be placed in shared-use facilities
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Searches are culminating for 14 tenured or tenure track positions. Prior to the excellence-fund, resources were planned for maintaining the pace of hiring at about one dozen per year, including some very senior hires. •The areas of hiring were determined based on analyses by the departments, and the focus is on research areas that can leverage multiple departments. This practice will be continued. •Some of the synergistic activities will be co-located in order to facilitate equipment sharing and also enrich the experience of the undergraduate and graduate students in those labs. •Agreement are finalized with Shorelight.
Resources Needed	•A one-time injection of funds is needed to provide for startups. The pace of student growth in CEC is faster than that for any other college. •FRIP and other similar incentives should be continued. •Wet and specialized lab space is at a premium. As the nearly- 50 new faculty members will join CEC, they will need 100,000 square feet. Bert Storey Innovation Space provides some space, but we also need about 40,000 square feet of labs. CEC may need help in identifying space and resources to lease lab space, even after having leased 14,000+ sq. ft. in SCRA building.
Goal Notes	

Goal 3 - Service

Goal Statement	Provide leadership for university and state organizations aimed at enhancing engineering and computing education, practice, and research.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Fully aligned.
Status	Progressing as expected (multi-year goal)
Action Plan	•Continue to offer programming courses in CSE as service courses. Expand the offering to make computing be part of the general education of all USC students. •Continue to offer programming courses in CSE as service courses. Expand the offering to make computing be part of the general education of all USC students. •Explore in detail 2+2 programs for online degree completion. •Identify faculty from CEC and College of Education to work together and with the schools for STEM outreach. •Continue active participation in economic engagement activities (Siemens, Samsung, IBM, Boeing, SIOS, Capgemini, Lending Tree, etc) •Continue to engage with international partners for exchange programs
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Ensure that the new budget model helps attract resources to CEC to support offering the current service courses by CSE. •Execute MOU's with SC State and Claflin on various joint/dual/accelerate degree options. •Continue to roll out the partnership with Caledonian University of Oman, and also with Shorelight. •Continue to strengthen the relationship with IBM, Boeing, Siemens, Samsung, Capgemini, SIOS, and Lending Tree, among others. •Continue to develop plans and resourcing options for a substantial maker and experiential space for USC and Columbia in the Biomass building.
Resources Needed	•Currently the college spends $570K+ on TA support for CSE service courses. •Continued support from the Office of Economic Engagement
Goal Notes	

Goal 4 - Teaching Excellence

Goal Statement	Enhance undergraduate education by decreasing the student-to-faculty ratio; enhance instructional laboratories, Improve advising and student support services; and Modernize curricula.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Fully aligned
Status	Progressing as expected (multi-year goal)
Action Plan	•Hired 11 faculty and 13 lecturers last year. •Invest in engineering and computing laboratory upgrades (~$500K/yr) •Implemented First Year Advising. Planning for Second Year Advising. •Expand Student Success Center programs in Swearingen •Continue to expand undergraduate Engineering and Computing Honors curricula tracks (5-6 HC specific courses per CEC major) •Improve recruiting strategies that target underrepresented students •Update Engineering and Computing course prerequisites while eliminating upper division hurdles to facilitate On Your Time graduation sequencing •Upgrade distance education facilities and modes of delivery •Nurture current international collaborations and continuously seek to foster new ones.
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Hiring 14+ faculty this year. This pace of hiring (~12/year) is needed in order to lower the student-to- faculty ratio from high 20's to 20-21. Peers and peer aspirants are in the high teens to 20. •Continue investing in engineering and computing laboratory upgrades (~$500K/yr set aside for labs and curricula). •Continue hiring lecturers and technicians as needed. •Need more computer classrooms to accommodate the IIT department and the growing enrollment in CSE and other departments, as well as serve the vision to have USC as one of the first public universities to require programming from all its students. •Develop a plan for financing an experiential learning facility in the woodchip area of the Biomass building. •Encourage the University to create more ~120 seat classrooms on the west side of the campus.
Resources Needed	•To cover the 24 Honors specific sections, 4 instructors are hired. Honors College and the Provost will need to cover 3 of those. •Instructional space, wet labs, and computer labs are areas where central help is needed. •Space in Sumwalt would be the natural choice for meeting our CEC need for computational classroom (3, accommodating 30, 30, and 50 students).
Goal Notes	

Goal 5 - Sustainability of CEC Mission

Goal Statement	Resource and budget the College's commitment to its long-term goals by evaluating its programs and activities based on cost, revenue, and mission impact.
Linkage to University Goal	•Educating the Thinkers and Leaders of Tomorrow •Assembling a World-Class Faculty of Scholars, Teachers, and Practitioners •Spurring Knowledge and Creation •Building Inclusive and Inspiring Communities •Ensuring Institutional Strength, Longevity, and Excellence
Alignment with Mission, Vision, and Values	Fully aligned
Status	Progressing as expected (multi-year goal)
Action Plan	Present well-justified and reasonable plans to the University for programs that leverage the College and the University.
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•Continue to develop the budget for the departments. •Streamline post-award experience.
Resources Needed	•$570,000 one-time addition to make up for the CSE TA investment for service courses until the new budget model is instituted. •A major onetime addition to the budget to pay for faculty startups •Computer classroom space is needed in a central location on campus. Sumwalt is an ideal building based on location.
Goal Notes	

Program Rankings

Academic programs that were nationally ranked or received external recognition during the Academic Year.

The 2018 graduate rankings for the College are currently embargoed by US News (See Appendix 1 for the engineering programs/departments). The highest-ranked programs in the College are chemical engineering (61st, 38th among publics) and nuclear engineering (19th, 17th among publics). We will also very soon have an aerospace degree program that should be ranked favorably compared with our other programs. Strategic investments (and partnerships) are envisioned to leverage the College in niche areas.

The level of noise to signal is quite high in that neighborhood of our rankings. However, we celebrate the rise from 104th to 97th. Among public universities, we have risen from 79th to 67th. Our performance numbers would have us placed 20-30 places better. However, we continue to suffer from low peer and recruiter scores, mostly due to our inadequate communications and marketing activities. We are currently searching for the position of senior director for communications.

Instructional Modalities

Innovations and changes to Instructional Modalities in unit's programmatic and course offerings that were implemented during the Academic Year.

•Lecture-capture facilities are incorporated into three classrooms. We will explore better ways to deliver online courses.
•The fee structure for APOGEE remains a challenge, and makes the offerings essentially non-competitive outside of SC.

Program Launches

Academic Programs that were newly launched during the Academic Year; those that received required approvals but which had not yet enrolled students are not included.

•Bachelor of Science in Engineering, Aerospace Engineering; Responsible Department: Mechanical Engineering
•Master of Science in Technology Innovation and Entrepreneurial Engineering; Responsible Department: College of Engineering and Computing

Program Terminations

Academic Programs that were newly terminated or discontinued during the Academic Year.

Master of Science in System Design

Supplemental Info - Academic Programs

Any additional information on Academic Programs appears as Appendix 1. (bottom).

Experiential Learning for Undergraduates

Initiatives, improvements, challenges, and progress with Experiential Learning at the Undergraduate level.

•Modernizing and upgrading the undergraduate laboratories and curricula ($500K/year)
•Envisioning a plan for the woodchip area of the Biomass building to convert it to 30,000 square feet of maker and experiential activities space with rapid prototyping, light machining, simulations and computing space, in addition to technicians and space for students and other groups. Preliminary plans are completed.
•Expanding on the existing required capstone-design experience of our students, by developing a college-wide capstone design experience which can address more complex and multi-disciplinary projects sponsored by companies. The teams will be drawn from multiple departments in CEC, or from other colleges as well. Today more than 50 of the projects are sponsored by funds from industry. The goal is to expand to over 90 next year.
•Pathways for Graduation with Leadership Distinction in Research are well-established and include applicable CEC coursework. Identifying applicable coursework that we can offer that meets the expectations of other GLD pathways is a challenge to improvement.
•Undergraduate Research: Many undergraduates participate in research but do not pursue GLD.
•Co-ops and Internships: CEC provides space and collaboration with the university Career Center to house a satellite office in Swearingen. This office focuses on engineering and computing students and the companies that hire them, and facilitates co-op and paid internship placements. An ongoing challenge is expanding the number and types of co-op and internship opportunities.
•McNair Junior Fellows Program: This highly selective program brings about 40-50 undergraduates into McNair Center and engages them in research for 5-10 hours per week. The students get real-world experience in research; many publish papers or give presentations. And many also work closely with the sponsors of the research projects.

Experiential Learning For Graduate & Professional Students

Initiatives, improvements, challenges, and progress with Experiential Learning at the Graduate or Professional level.

A graduate degree in engineering or computing, unless it is purely-course-based, by definition has a significant experiential learning component in the form of a thesis, dissertation, or project. As we continue to bring on board research active faculty who establish new research areas and new laboratories, we will continue to expand the options for our graduate students. Furthermore, we provide opportunities for collaborative research with international institutions.

Affordability

Assessment of affordability and efforts to address affordability.

•At the graduate level, with the exception of self-paid masters students (not large in number), the rest of the students receive some level of stipend and tuition support. The packages are competitive so that we can attract them to USC.
•At the undergraduate level, the good students from within or outside of the state have access to full-ride scholarships (some with stipends). In addition to many other university and state level scholarships, the

College itself hands out over $400,000 in scholarships annually to over 500 students.
•USC CEC provides the top-ranked (by NRC) programs in the state, without being the most expensive: For CEC the tuition plus the fees are lower than the tuition alone for Clemson University.

Reputation Enhancement

Contributions and achievements that enhance the reputation of USC Columbia regionally and nationally.

•Hiring world-class faculty, and attracting great students
•Nominating the faculty and students for awards, and winning these
•We had one faculty member elected to the National Academy of Engineering (NAE). Two more are nominated currently, and we are in conversations with 3 more to attract them to USC. We are also in conversation with a member of the NAS to join our college.
•Engaging and partnering with local and regional industry, schools, and the state government
•Engaging and partnering with other universities, and national labs
•Development of national and international collaborations with institutions all over the globe to enhance reputation

Challenges

Challenges and resource needs anticipated for the current and upcoming Academic Years, not noted elsewhere in this report and/or those which merit additional attention.

These were noted, but listed again:
•Startup in engineering is expensive. Also space is short on quantity and quality. More help is needed centrally.
•Short on lab space, and computer classroom space
•Insufficient large classrooms on the west side of the campus

Supplemental Info - Academic Initiatives

Any additional information on Academic Initiatives appears as Appendix 2. (bottom)

Faculty Population

Faculty Employment Summary

Table 1. Faculty Employment by Track and Title.

	Fall 2017	Fall 2016	Fall 2015
Tenure-track Faculty	119	109	112
Professor, with tenure	56	51	47
Associate Professor, with tenure	37	34	34
Assistant Professor	26	24	31
Librarian, with tenure	0	0	0
Research Faculty	11	12	9
Research Professor	3	3	3
Research Associate Professor	0	0	0
Research Assistant Professor	8	9	6
Clinical/instructional Faculty	12	7	4
Clinical Professor	0	0	0
Clinical Associate Professor	0	0	0
Clinical Assistant Professor	0	0	0
Instructor	12	7	4
Lecturer	0	0	0
Visiting	0	0	0
Adjunct Faculty	22	18	19

Faculty Diversity by Gender and Race/Ethnicity

Note: USC follows US Department of Education IPEDS/ National Center for Education Statistics guidance for collecting and reporting race and ethnicity. See https://nces.ed.gov/ipeds/Section/collecting_re

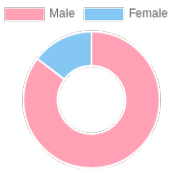
Table 2. Faculty Diversity by Gender and Race/Ethnicity, Fall 2016, Fall 2015, and Fall 2014.

	Fall 2017	Fall 2016	Fall 2015
Gender	143	128	125
Female	21	16	17
Male	122	112	108
Race/Ethnicity	143	128	125
American Indian/Alaska Native	0	0	0
Asian	44	41	41
Black or African American	2	1	1
Hispanic or Latino	4	4	4
Native Hawaiian or Other Pacific Islander	0	0	0
Nonresident Alien	7	5	5
Two or More Races	2	1	1
Unknown Race/Ethnicity	1	0	0
White	83	76	73

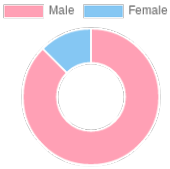
Illustrations 1 and 2 (below) portray this data visually.

Illustration 1. Faculty Diversity by Gender

2017 Faculty Gender



2016 Faculty Gender



2015 Faculty Gender

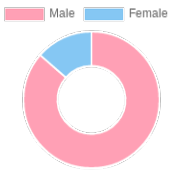
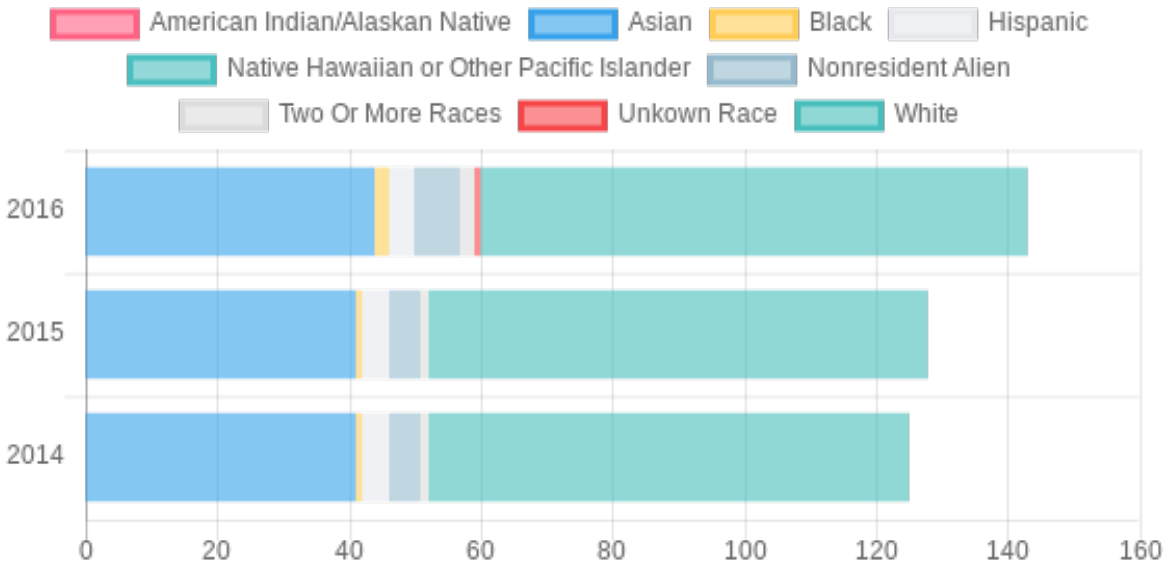


Illustration 2. Faculty Diversity by Race & Ethnicity



Research and Scholarly Activity

Please refer to Appendix 3, which provides detailed information from the Office of the Vice President for Research, department of Information Technology and Data Management, including:
1) The total number and amount of externally sponsored research proposal submissions by funding source for the appropriate Fiscal Year.
2) Summary of externally sponsored research awards by funding source for the appropriate Fiscal Year. Total extramural funding processed through Sponsored Awards Management (SAM) in the Fiscal Year, and federal extramural funding processed through SAM in the Fiscal Year. (Available at: http://sam.research.sc.edu/awards.html) Amount of sponsored research funding per faculty member in FY YYYY (by rank, type of funding; e.g., federal, state, etc., and by department if applicable).
3) Number of patents, disclosures, and licensing agreements for three most recent Fiscal Years.

Following discussions in Executive Committee in 2016, the following metrics from Academic Analytics (AA) were selected as being most relevant, in three categories as indicated. For certain departments, the conference proceedings are important but these are not available in the AA Database.

The first category is Total Departmental Impact and Competitiveness; this metric scales strongly with faculty size. In this category are four AA metrics: Total Journal Publications; Total Citations; Total Grant Dollars; and Total Awards/Honors.

The second category is Productivity per Faculty Member; this metric accounts for CEC having a smaller total faculty size than the large public institutions. In this category are another four AA metrics: Journal Publications per Faculty Member; Citations per Faculty Member; Grant Dollars per Faculty Member; and Awards/Honors per faculty member.

The third category we call Departmental Reach. The metrics in this category are Citations per Publication (what kind of articles; what kind of journals?); Dollars per Grant (what size program is within the department's reach?); and Number of Faculty with Grant (Is the research effort spread evenly, or is there a split of research-active and non-active?)

For the 2018 Blueprint, we maintained the subset of seven SEC schools as our peer comparators for the four purely "Engineering" departments. These are Florida (from the Provost's Peer Aspirant group); Auburn, Missouri, and Tennessee (from the Provost's 2017 Peer Group); Alabama, Kentucky, and Arkansas (additional SEC schools that appear in our department's own choice of peer universities that were not already in the Provost's Peer and Peer Aspirant schools). We omitted Georgia from the Engineering departments. Although Georgia appears in the Provost's peer group, its engineering school is relatively small, limited in scope, and of recent vintage. For our Computer Science and Engineering Department, we included Georgia (which has Computer Science separately) and excluded Tennessee (which combines Electrical Engineering and Computer Science, and which is used as a peer for Electrical Engineering).

On the following pages, we present three radar charts (per the three categories above) for each of our five PhD-granting departments (Computer Science and Engineering, and Chemical, Electrical, Mechanical, and Civil & Environmental Engineering). These departments are the tenure homes of faculty who are also appointed in our programs: Biomedical, Nuclear, and Aerospace Engineering. The values on the radar charts are computed as follows:

Metric for USC department /Maximum metric in the category x 100%

Thus the charts show how well a given CEC department compares to the category leader, for all 11 categories.

Faculty Development

Efforts at Faculty Development, including investments, activities, incentives, objectives, and outcomes.

Optional

•The college instituted a cross-departmental approach to faculty searches and hires in the prior year, with searches organized across technical focus areas.
•The College continued its Principal Investigator academy, a series of workshops for new faculty on grant development and management, grantsmanship, compliance, and USC policies and procedures.
•CEC added a one-half day Orientation for New CEC faculty, in August 2017.
•CEC developed a Research Compliance and Outside Professional Activities workshop, and delivered this to faculty and department chairs.
•CEC maintains and adds to a BlackBoard site, containing all the handouts, presentations, and supplementary materials for the activities above.
•CEC hired Hanover Research as an external consultant on some grants, and to provide some mentoring and an NSF CAREER workshop for new faculty.
•CEC employed KB Science to help a senior faculty member write a very large team-based proposal to the Department of Energy.
•CEC organized several inter-college meetings for faculty interested in interdisciplinary research; the topics were ocean engineering and security, and engineering and nursing.

Supplemental Info - Faculty

Any additional content on Faculty Information appears as Appendix 4. (bottom)

Supplemental Academic Analytics Report

Content from Academic Analytics appears as Appendix 5. (bottom)

Faculty to Student Ratio

The formula used to compute the ratio uses data from Faculty Population by Track and Title and Student Enrollment by Time Basis, as follows:

$$\frac{\textit{(Total Full-time Students + 1/3 Part-time Students)}}{\textit{((Total Tenure-track Faculty +Total Research Faculty + Total Clinical/Instructional Faculty) + (1/3 Adjunct Faculty))}}$$

Table 4. Faculty-to-Student Ratio, Fall 2017, Fall 2016, and Fall 2015

Fall 2017	Fall 2016	Fall 2015
1:16.3	1: 26.0	1:24.97

Analysis of Ratio

Analysis of the ratio, agreement with the data, and plans for the future to impact this ratio.

The goal at the start of my deanship was to reverse the alarming trend in our student/faculty ratio. On the basis of the above formula, CEC seems to be out of the woods. However, using the nationally normed metric of undergrad students to TT faculty our numbers from 2015, 2016 and 2017 are: 24.5, 26.8 and 27.0. In other words, our student enrollment keeps increasing faster than our net faculty growth. The college needs more resources to hire faculty.

Faculty Awards Received

During AY2017-2018 faculty of CEC were recognized for their professional accomplishments in the categories of Research, Service, and Teaching.

Research Awards

Recipient(s)	Award	Organization
McNeill, Steve	Inaugural Fellow of the International Digital Image Correlation Society	Digital Image Correlation Society
Huang, Kevin	2017 Educational Foundation Award for Research in Science, Mathematics and Engineering	USC VPR Office
Huang, Chin-Tser	2018 U.S. Air Force Summer Faculty Fellowship Award	United States Air Force
Farka, Csilla	IBM Faculty Award	IBM
Khan, Jamil	2017 Research Achievement Award	College of Engineering and Computing
Kidane, Addis	Young Investigator	College of Engineering and Computing
Kiddane, Addis	James W. Dally Young Investigator Award	Society for Experimental Mechanics
Kiddane, Addis	The Peterson Award	Society for Experimental Mechanics
Matta, Fabio	2018 Distinguished Research Service Award	USC VPR Office
Wang, Guoan	IEE Region 3 Outstanding Engineering Award	Institute of Eectrical and Electronics Engineers (IEEE)
Mandal, Krishna	RTSD Scientist Award	Institute of Eectrical and Electronics Engineers (IEEE)
Padak, Bihter	35 Under 35	American Institute of Chemical Engineerings (AIChE)
Kidane, Addis	2018 Breakthrough Star	USC VPR Office
Rekleitis, Ioannis	2018 Breakthrough Star	USC VPR Office
Huang, Kevin	2018 Breakthrough Leadership in Research	USC VPR Office

Service Awards

Recipient(s)	Award	Organization
Reynolds, Anthony	Biedenbach Award	College of Engineering and Computing
Matta, Fabio	2017 Associate Editor Award	American Society of Civil Engineers (ASCE)

Teaching Awards

Recipient(s)	Award	Organization
Matta, Fabio	2018 Southeastern Conference (SEC) Visiting Faculty Travel Grant	Southeastern Conference (SEC)
Valafar, Homayoun	Two Thumbs Up	USC Student Disability Resource Center
Addis, Shazly	Samuel Litman Distinguished Professor	College of Engineering and Computing
Sourav, Banerjee	Micheal J. Mungo Teaching Award	USC Provost Office
White, Ralph	Henry B. Linford Award for Distinguished Teaching	The Electrochemical Society

Other Awards

Recipient(s)	Award	Organization
Rizos, Dimitris	Certicate of Appreciation	ASME Rail Transportation Division

Student Recruitment

Efforts, including specific actions, to recruit students into College/School programs.

Undergraduates:
•**Director of Outreach and Recruitment:** One full-time staff position dedicated to outreach and recruitment for the College. Position develops, implements and evaluates college activities that contribute to the successful recruitment of undergraduate students.
•**Enhanced Learning Experiences:** Provided by department faculty and staff and coordinated by the Director of Outreach and Recruitment, ELEs are half-day hands-on engineering and computing experiences for classes of high school students. Scheduled upon request.
•**Middle School Day:** This outreach event in October was free of charge and open to any Middle School class of 20-25 students. Topics included Biomedical Engineering, Electrical Engineering, and Computer Science. Students engaged in various experiments and learning experiences with CEC faculty and students.
•**E-Week Open House:** National Engineers Week celebrates professionals in all fields of engineering and computing. CEC hosts an Open House geared toward kindergarten through 12th grade students. The free event features dozens of interactive exhibits that highlight our academic programs and research.
•**Summer Camps for K-12 Students:** Coordinated by the Director of Outreach and Recruitment, camps this year include Partners for Minorities in Engineering and Computer Science, Adventures for Women in Engineering, Adventures in VEX Robotics, Adventures in Computer Gaming - Middle School, Adventures in Computer Gaming - High School, Adventures in Electrical Engineering, Adventures in Natural Hazards and Civil Engineering, and Adventures in Aerospace.
•**USC Science and Engineering Fair:** College faculty provides leadership and judges for the Engineering Division and the Computer Science Division.
•**K-12 Classrooms, Career Fairs**. Director of Outreach and Recruitment presents to classes of students at K-12 schools. Attends college and career fairs at K-12 schools.
•**Website, Flyers, and Brochures:** Director of Outreach and Recruitment designs and maintains college's "Apply" and "K-12 Outreach Programs" sections of college website, and the college and program-specific informational brochures for prospective students, to ensure timeliness and accuracy of information.
•**College "Daily Tours" provided throughout the year**: Daily tours are led by CEC student ambassadors that are trained and supervised by the Director of Outreach and Recruitment
•**Three "Big Fridays" each semester:** Big Fridays include presentations by the Dean and the Director of Outreach and Recruitment, a student panel Q&A, and tours of the departments led by faculty.
•**College-Specific Admitted Student Yield Efforts:**
Letters to families of admitted students sent by Associate Dean.
Director of Outreach and Recruitment collaborates with the USC Admissions office to send brochure to all admitted students that includes the Dean's Letter to admitted students, crafted by the college's Associate Dean for Academic Affairs and Director of Outreach and Recruitment.
Dean, Associate Deans, Department Chairs, and Faculty participate in Admissions Office events, including Fall Open House, Admitted Student Days, Scholar Socials, Carolina Scholars and Out of State Scholar Weekends.

•**Scholarships:** CEC provides hundreds of students with scholarships - most target new freshmen.
•**Articulation Agreements:** Transfer student recruitment is facilitated through active articulation agreements with USC System campuses, SC Technical Colleges, and several 4-year regional institutions. Two more in the works with SC State University and Claflin University.
•Big Fridays (events for visiting students)
•Admitted student days
•Participation in Honors College recruiting activities

•Participation in GSSM college fair
•Participation in multiple K-12 college and career fairs throughout the state
•Outreach to Richland and Lexington schools

Graduates:
•We convened two meetings of the departmental graduate directors to discuss issues involved in the recruitment of high quality graduate students to our programs. CEC centrally offers funds for individual departments to travel to recruiting events, or to develop campus visitation programs. The Senior Associate Dean, and the graduate director in Computer Science, each submitted $10,000 proposals to the SC EPSCoR Office for funds to increase the diversity of the graduate student pool.
•The SEC Deans Fellows Program was continued, bringing a minimum of 2 SEC alumni on board each year with add-on stipends of $5K, on top of a minimum $25K/year research stipend.
•The CEC Senior Associate Dean for Research is the USC representative to the National GEM Consortium, which facilitates industrial internships and financial aid for under-represented minorities in STEM fields. USC Computer Science & Engineering has attracted two GEM students to apply to their program, matriculating in Fall 2018.
• CEC participates in the ENGINE database effort; leading engineering schools share names of their undergraduates who are prospective graduate students and all engineering schools can recruit from this list.

Student Retention

Efforts at retaining current students in College/School programs.

•**Assistant Dean for Student Services:** Duties of this position include coordinating college-level support for undergraduate retention efforts that involve academic issues, analyzing data to propose and develop interventions targeting specific courses and students, and maintaining partnerships with the Student Success Center and related offices.
•**Advising Coordinator:** Duties of this position include coordinating college-wide undergraduate academic advising. This includes ensuring that Faculty Advisors receive appropriate training on advising technology tools and supervising First-Year Advisors.
•**Hand-Off Advising Model:** CEC uses First Year Advisors that have training, experience, and a disposition to help new students transition successfully to college. Faculty Advisors advise continuing students to help students connect with their fields of study and career opportunities.
•**Professional First Year Advisors:** First Year Advisors hired though the University Advising Center are co-located with CEC student service staff in the Swearingen Student Services Office. This provides one-stop service for all undergraduate studies-related issues.
•**New Student Orientation:** The presentation by Associate Dean for Academic Affairs to all incoming students and families is data-driven and focuses on academic success strategies and student engagement recommendations.
•**Carolina Pre-Calculus Review:** Math-readiness of students has been identified as a challenge to retention for CEC's engineering and computer science degree programs. CEC collaborates with the Student Success Center to provide 6-day on-line pre-calculus intensive review courses during the summer before the freshman year. Content includes math concepts and college-level study strategies.
•**Big Wednesday:** The day before classes start, new students interact with representatives of over 30 CEC-orientated student organizations, with the intended outcome of improved student engagement.
•**Tutoring:** In collaboration with the Student Success Center, the college provides tutoring centers in

Swearingen and in the Engineering and Computing Community. CEC currently has the only academic building with a satellite of the Student Success Center.

•**Engineering and Computing Community:** In collaboration with Housing, a CEC Faculty Advisor and the Assistant Dean for Student Services provide linked courses and beyond-the-classroom activities for this themed living-learning community.

•**Student Organizations:** College provides meeting rooms, storage, advisors, administrative, and other support to over 35 CEC-oriented student organizations.

•**Events for Current Students:** On-going student professional development and engagement events that are coordinated at the college-level include a Women in Engineering and Computing Panel, SCANA Design Competition, Dean's Leadership Conversation, and CEC Organizational Leaders Workshop.

Student Enrollment & Outcomes

The following data was provided by USC's Office of Institutional Research, Assessment, and Analytics.

Note: Student enrollment and outcomes data are calculated by headcount on the basis of primary program of student only.

Student Enrollment by Level & Classification

Table 5. Student Enrollment by Level & Classification.

	Fall 2017	Fall 2016	Fall 2015
Undergraduate Enrollment			
Freshman	691	595	630
Sophomore	665	650	609
Junior	669	626	609
Senior	1185	1049	875
Sub Total	3210	2920	2723
Graduate Enrollment			
Masters	276	256	245
Doctoral	307	319	237
Graduate Certificate	2	0	86
Sub Total	585	575	568
Professional Enrollment			
Medicine	0	0	0
Law	0	0	0
PharmD	0	0	0
Sub Total	0	0	0
Total Enrollment (All Levels)	**3795**	**3495**	**3291**

Illustration 3. Undergraduate Student Enrollment by Classification

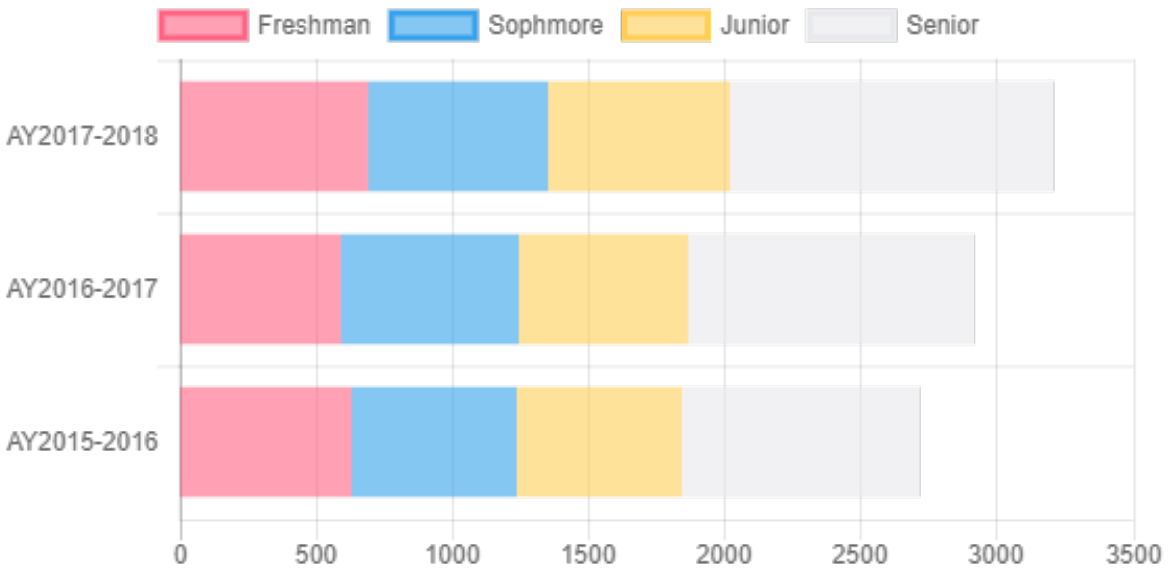


Illustration 4. Graduate/Professional Student Enrollment by Classification

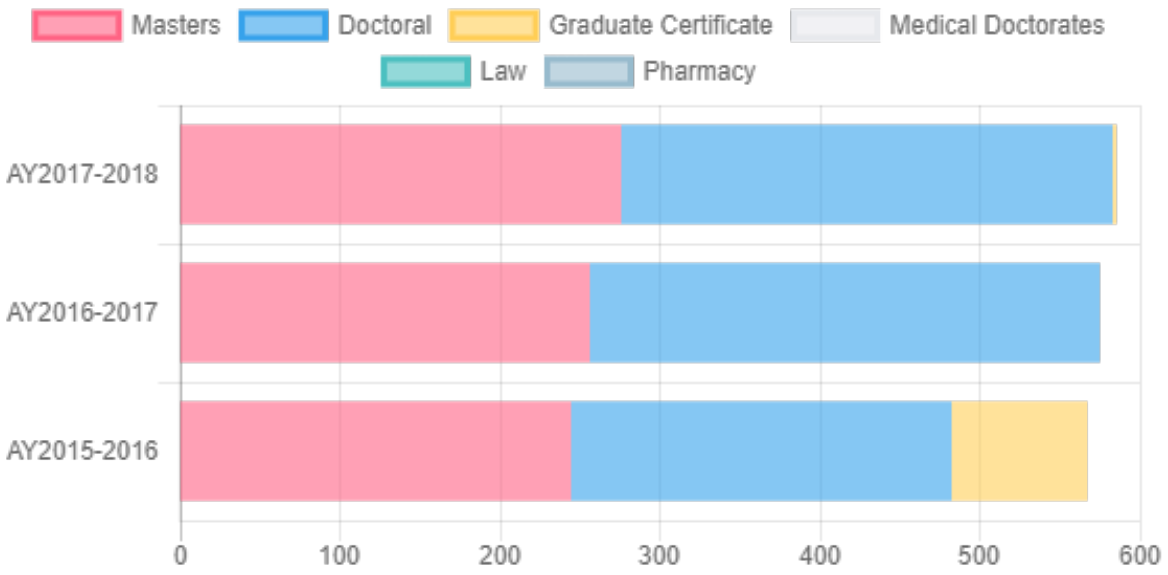
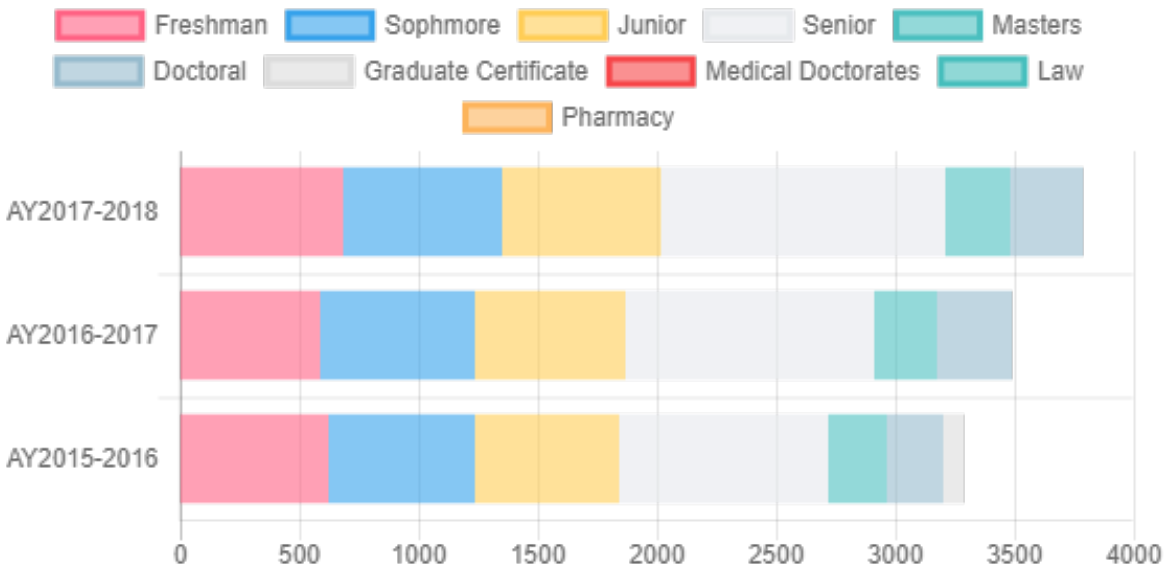


Illustration 5. Total Student Enrollment by Classification (All Levels)



Enrollment by Time Status

Table 6. Student Enrollment by Level and Time Status.

	Fall 2017	Fall 2016	Fall 2015
Undergraduate	**3210**	**2920**	**2742**
Full-Time	2985	2793	2566
Part-Time	225	127	176
Graduate/Professional	**585**	**575**	**568**
Full-Time	420	441	422
Part-Time	165	134	146
Total - All Levels	**3795**	**3495**	**3310**
Full-Time	3405	3234	2988
Part-Time	390	390	390

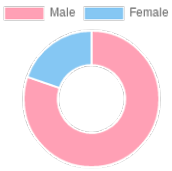
Student Diversity by Gender

Table 7. Student Enrollment by Gender.

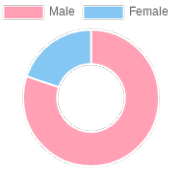
	Fall 2017	Fall 2016	Fall 2015
Undergraduate	**3210**	**2920**	**2742**
Female	634	579	539
Male	2576	2341	2203
Graduate/Professional	**585**	**575**	**568**
Female	132	132	125
Male	453	443	443

Illustration 6. Undergraduate Student Diversity by Gender

2018 Undergraduate Gender



2017 Undergraduate Gender



2016 Undergraduate Gender

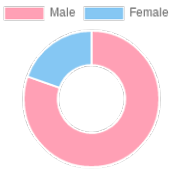
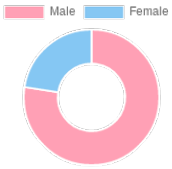
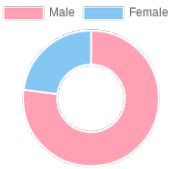


Illustration 7. Graduate/Professional Student Diversity by Gender

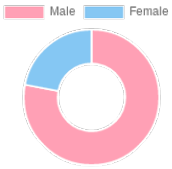
2018 Graduate Gender



2017 Graduate Gender



2016 Graduate Gender



Student Diversity by Race/Ethnicity

Table 8. Student Enrollment by Race/Ethnicity.

	Fall 2017	Fall 2016	Fall 2015
Undergraduate	**3210**	**2920**	**2742**
American Indian/Alaska Native	6	9	8
Asian	147	126	117
Black or African	317	228	225
Hispanic or Latino	159	145	142
Native Hawaiian or Other Pacific Islander	2	2	2
Nonresident Alien	155	148	111
Two or More Races	116	103	111
Unknown Race/Ethnicity	35	32	31
White	2273	2127	1995
Graduate/Professional	**585**	**575**	**568**
American Indian/Alaska Native	0	0	0
Asian	14	18	18
Black or African	33	20	21
Hispanic or Latino	13	15	12
Native Hawaiian or Other Pacific Islander	2	2	2
Nonresident Alien	306	330	321
Two or More Races	17	10	6
Unknown Race/Ethnicity	5	3	2
White	195	177	186

Illustration 8. Undergraduate Student Diversity by Race/Ethnicity

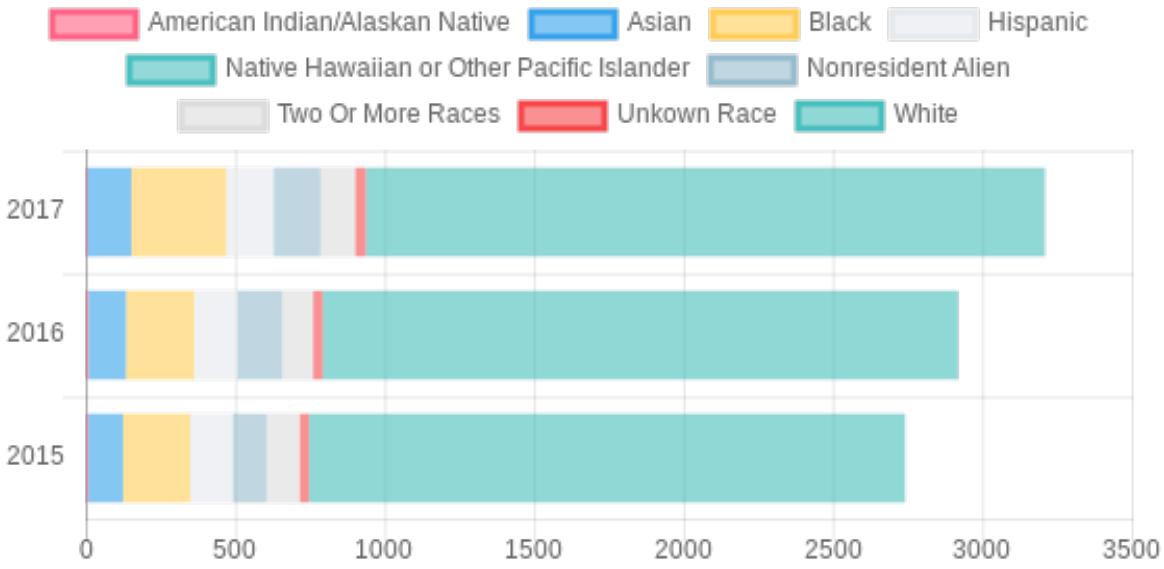
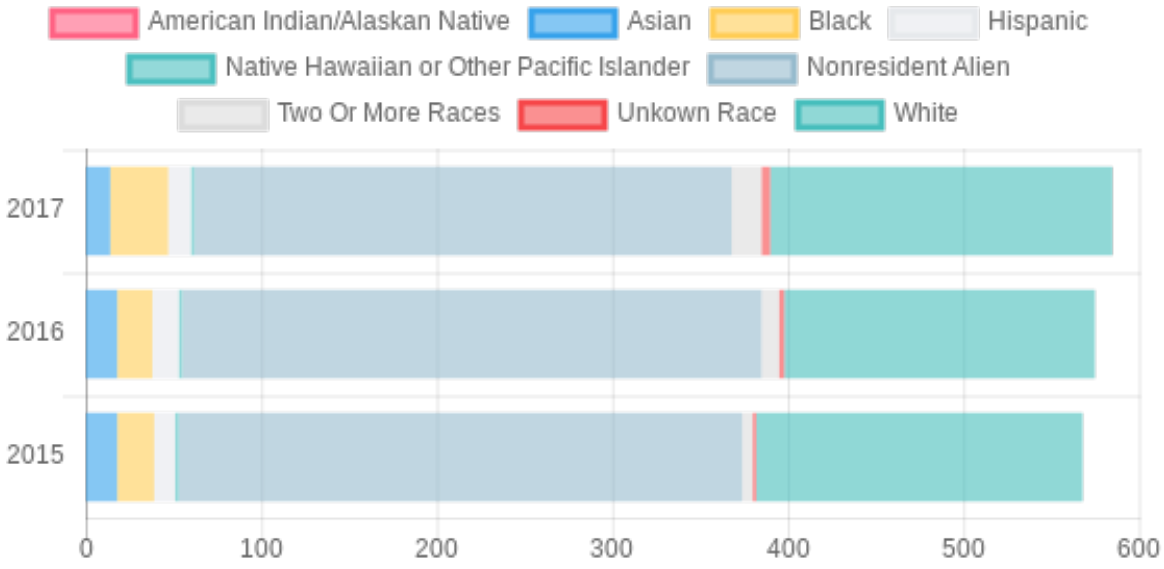


Illustration 9. Graduate/Professional Student Diversity by Race/Ethnicity

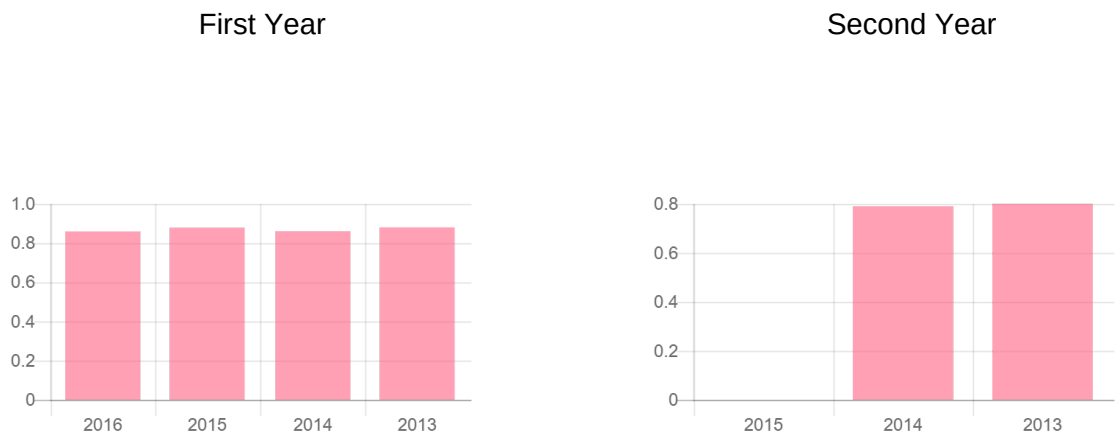


Undergraduate Retention

Table 9. Undergraduate Retention Rates for First-time Full-time Student Cohorts

	First Year	Second Year
Fall 2016 Cohort	85.9%	N/A
Fall 2015 Cohort	87.8%	N/A
Fall 2014 Cohort	86%	79%
Fall 2013 Cohort	88%	80%

Illustration 10. Undergraduate Retention, First- and Second Year



Student Completions

Graduation Rate - Undergraduate

Table 10. Undergraduate Graduation Rates for First-time Full-time Student Cohorts at 4-, 5-, and 6 Years.

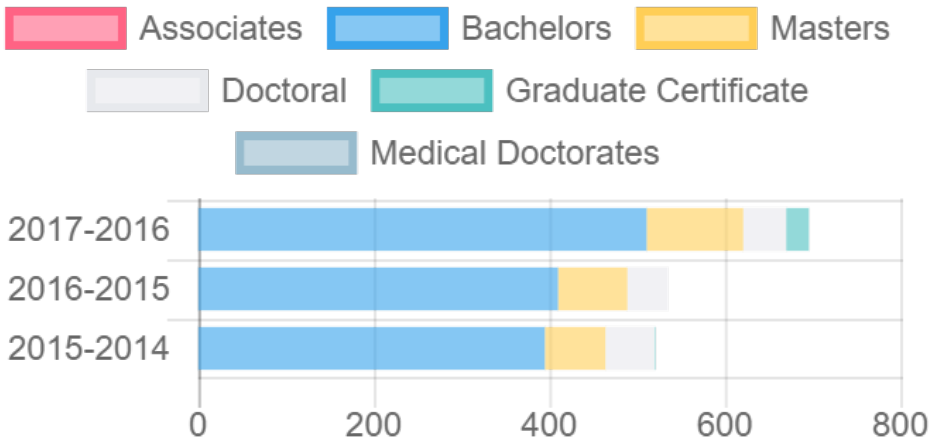
	4-Year	5-Year	6-Year
Fall 2011 Cohort	51.5%	61.3%	64.1%
Fall 2010 Cohort	0%	0%	0%
Fall 2009 Cohort	0%	0%	0%

Degrees Awarded by Level

Table 11. Degrees Awarded by Level.

	AY2016-2017	AY2015-2016	AY2014-2015
Associates Degree	0	0	0
Bachelors	511	410	395
Masters	110	79	69
Doctoral	49	46	56
Medical	0	0	0
Law	0	0	0
Pharmacy Doctorate	0	0	0
Graduate Certificate	26	0	1

Illustration 11. Degrees Awarded by Level



Alumni

Substantial activities, engagements, and initiatives with alumni during AY2017-2018, focusing on relationships and activities with alumni.

In FY18, the College began the process of rebuilding the alumni relations, development and communications programs from the ground up. A new Senior Director of Development was hired in May of 2017 and has begun the process of revamping each of these areas.

Staffing

The first area of concern was staffing. For the last 10 years the development, alumni relations and communications functions (advancement) were carried out by 2 - 3 full time staff. The Dean, in consultation with the new senior director has expanded the staff to 8. This includes the following:
•Senior Director of Development (1) - Chief development/Advancement officer
•Development Coordinator (2) - Events and Stewardship/Education Accounts & data
•Assistant/Associate Directors (2) - Department liaisons/Leadership Annual Giving
•Director of Development (1) - Major Gifts
•Alumni Outreach Manager (1) - Alumni communication efforts
•Strategic Communications Director (1) - External non-alumni communication as directed by Dean

Beyond these staffing changes, the Senior Director of Development now serves on the Dean's Executive Council, further improving the lines of communication with other department and area heads. This new staffing level is aimed at increasing the impact of our communication pieces for both alumni and external offices, increasing the level of annual fund support, building a stronger pipeline for major gifts, better servicing our individual departments and alumni bases withing the CEC, to prepare the College for the next capital campaign, and ultimately to advance the capacity of the College to engage in teaching and research.

Alumni, Donor, and Corporate Outreach

In FY18, despite being short staffed with the departure of a staff member, the CEC maintained a calendar of old and new events. This included the following:
•Annual Homecoming Celebration
•Annual Scholar Donor event
•Faculty/Family Fund Appreciation event (New)
•Cockaboose to promote Honors/ CEC collaboration with select parents (New)
•Thank a Donor for Giving Day (Student Engagement)
•E-Week Activities
•Various campus tours, meetings and strategy sessions with potential corporate partners in consultation with the Office of Economic Engagement and the Development Corporate and Foundations Office.

The Development staff is in the midst of developing a revamped alumni engagement and donor recognition program for our 16,909 alumni, which will be ready to launch by Homecoming 2018. This new model will develop the alumnus' relationship with the CEC, encourage participation in annual giving programs and will develop a cadre of ambassadors that can effectively carry the messages and goals of the CEC to the broader community.

Development, Fundraising and Gifts

Substantial development initiatives and outcomes during AY2017-2018, including Fundraising and Gifts.

Despite being short staffed the CEC Development office has maintained a high level of activity. To date the CEC has secured $7,284,338 in total giving from 629 donors. To date this total giving represents 10.05% of the overall giving to the University in FY18. This is a combined total of gifts, planned gifts, pledges, gifts-in-kind, ($1,955,649) and sponsored awards ($5,328,689). This combined total exceeds the FY17 result.

At the end of FY17, in collaboration with the Office of Economic Engagement, the CEC also celebrated a new partnership with Siemens, launching Digital Factory Innovation Lab with a $628 million-dollar technology grant.

Gifts of note:

•John '78 and Nancy Barnhill committed $500,000 from their estate to bolster their endowed scholarship fund. This gift all but ensures the fund will be endowed at the million-dollar level.

•Emrys McMahon'13 has committed to a $25,000 endowed scholarship, one of the first of its kind for a young alumnus.

Productivity:

•Over 100 visits have been conducted in the past eight months

•Over 32 solicitations have been made with a 70% ask to close ratio

Supplemental Info - Alumni Engagement & Fundraising

Any additional information on Alumni Engagement and Fundraising appears as Appendix 6. (bottom)

Community Engagement

Description

Community engagement and community based research, scholarship, outreach, service or volunteerism conducted during AY2017-2018, including activities at the local, state, regional national and international levels.

Outreach activities that are offered by CEC and are described above include:
•Enhanced Learning Experiences
•Middle School Day
•Summer Camps for K-12 Students
•Visits to K-12 Classrooms, Career Fairs, FIRST Robotics Competitions
•College "Daily Tours" and "Big Fridays"
•E-Week Open House

Community Perceptions

How unit assesses community perceptions of engagement, as well as impact of community engagement on students, faculty, community and the institution.

The Engineering and Computing Open House is a great community event that draws close to 1,000 visitors to the campus on a Saturday in February.

Incentivizing Faculty Engagement

Policies and practices for incentivizing and recognizing community engagement in teaching and learning, research, and creative activity.

There are many different ways that the faculty of CEC can engage with the community. As such we do not have a uniform policy to address all possible means of interaction and engagement. For engagements that are substantial and impactful, we will count it as a substantial element for the service that each faculty member needs to do. For more significant levels of engagement, we can consider other incentives. We will address on a case by case basis.

Supplemental Info - Community Engagement

Any additional information on Community Engagement appears as Appendix 7. (bottom)

Collaborations

Internal Collaborations

•Student Success Center
•University Advising Center
•South Carolina Honors College
•Arts and Sciences (chemistry, physics, math, biology, environmental, statistics)
•College of Education
•College of Social Works
•School of Medicine (biomedical mainly)
•School of Business
•College of Public Health
•College of Nursing (forthcoming: joint hire with IIT)
•School of Law (forthcoming: Rule of Law, cybersecurity/autonomous transportation)
•Ocean Leadership Meeting - CEC and A&S
•Energy Frontier Research Center - CEC (BESMANN) AND A&S (ZUR LOYE)
•ARPA-E MicroAlgae proposal - CEC, A&S, PH

External Collaborations

•NNMI Rapid Institute on Process Intensification - led by AICHE from DOE for $140M with multiple universities and industrial partners from across the country
•NNMI ARM in Robotics - led by Carnegie Mellon University with multiple universities and industrial partners from across the country
•NASA Advance Composites Consortium - McNair Center joined the consortium and is expected to receive $2.8M in research funding.
•Boeing/USC Collaboration - Boeing and USC are working on several projects that total $2.5M in research funding with an additional $2M expected to come in the next year
•Georgia Tech
•Harvard
•McGill
•Virginia
•Delaware
•Universite Catholique de Louvain, Belgium
•Mississippi
•Instituto Superior Technico, Lisbon, Portugal
•Hydraulic Research Institute, Cairo, Egypt
•Irrigation Research Institute, Pakistan
•Caledonian College of Engineering, Sultanate of Oman
•Pacific Northwest National Lab
•NIST
•Sandia
•Oak Ridge
•Savannah River
•Army
•Army Research Lab
•IBM
•Michelin
•Siemens
•Fokker

•Siemens
•Governors School for Science and Math
•R2i2 Richland 2 Schools
•Greenville Technical College
•Midlands Technical College
•Orangeburg-Calhoun Technical College
•Piedmont Technical College
•Trident Technical College
•York Technical College
•Charleston Southern University
•Elon University
•Presbyterian College

Other Collaborations

Our most significant academic collaborations and multidisciplinary efforts that are not otherwise accounted for as Internal or External Collaborations.

CEC also works very closely with the Office of Economic Engagement.

Supplemental Info - Collaborations

Any additional information about Collaborations appears as Appendix 8. (bottom)

Campus Climate & Inclusion

Activities unit conducted within AY2017-2018 that were designed to improve campus climate and inclusion.

*The initiatives listed below represent a continuation of diversity and inclusion efforts from the 2016-2017 academic year.

1. Assess College of Engineering and Computing (CEC) diversity of faculty and students by:
   a. Collect and analyze CEC data (Appendix I)
   b. Generating report on current statistics and future outlook (Appendix I)
   c. Discussing diversity concerns with faculty, staff, and students
   d. Generating report on current statistics and future outlook
2. Engage underrepresent and minority student chapters to
   a. Discuss resources for scholarship, and development workshops
   b. Promote undergraduate research experiments, such as SCAMP and Magellan
   c. Elicit needs and initiatives to form strategic diversity plan
3. Provide travel support for student participation in national and regional conferences and workshops, such as Society of Hispanic Professional Engineers (SHPE), National Society of black Engineers (NSBE), Black Women in Computing (BWiC)
   a. During 2017-18 school year: Supported 23 minority and women students to participate minority-focused conferences and workshops
   b. Total 2017 support around $5,800
4. Work with CEC faculty search committees to
   a. Develop diversity-friendly search ads
   b. Organize Equal Employment Opportunity (EEO) training
   c. Identify and share resources and tools with search committees to evaluate hidden bias
   d. Develop Diversity handout for potential candidates
5. Organize workshops and promote university-level resources addressing diversity issues, such as career for women in engineering and computing and workshops of the Center for Teaching Excellence
   Fall 2017 Workshops & Activities:
   a. Grace Hopper Celebration (GHC) 18 undergraduates CSE and IIT women attended the annual conference
   b. Salary Negotiation and Benefits workshop was in collaboration with CEC Career Center - 50+ participants
   c. Women's Power Hour Lunch series - limited to 40 participants
   d. SAFE Self - Defense workshop led by USC Police Department - 25 participants
   Spring 2018 Workshops:
   a. CEC Winter Networking Social - Introduced the concepts of effective leadership to CEC undergraduate and graduate students - 25 participants
   b. E-Week Women in Engineering and Computing Panel
   c. Hidden Figures movie screening and discussion in collaboration with Society of Women Engineers
6. Participate in university-level diversity activities and promote resources for CEC students, staff, and faculty
   a. Attend Council of Academic Diversity Officers (CADO) Meetings and inform CEC faculty, staff, and students about activities
   b. Meet with representatives of university level initiatives, such as USC TRiO Programs staff to discuss collaborations for summer bridge programs
   c. Coordinate and develop collaborations with SC HBSCUs and minority institutes, Claflin, SC State, Columbia College
7. Promote and participate in national diversity activities such as Graduate Education for Minorities (GEM) and National Center for Faculty Development and Diversity (NCFDD)
   GEM Consortium (in collaboration with Dr. Matthews, Assoc. Dean for Research)
   a. Actively identify and participate in activities to recruit graduate students form underrepresented communities

b. Promoting GEM resources to faculty and students

c. Presented CEC graduate student opportunities and conducted recruitment discussions with South Carolina State University and Claflin University in Orangeburg, SC. Joint effort with Dr. Matthews, Associate Dean for Research, and Dr. Jabbarzadeh, lead on M.S. in Technology Innovation and entrepreneurial Engineering

8. Supply data and provide support for university-wide and regional activities, such as applications for funding and donations and letters of commitment

9. Organize and support K-12 summer activities, such as Partners for Minorities and engineering & Computer Science (PMECS), Adventures for Women in Engineering and computing, initiate plans for sustainable K-12 recruitment to increase diversity

a. Lead the planning and implementation of Adventures for Women in Engineering middle school camp: NEW! Theme-based engineering & computing activities that provide an overview of the majors offered at USC

b. Partners for Minorities Participation in Engineering and Computer Science: NEW! Initiate a summer calculus intensive program for college readiness. Selected high school junior and seniors participating in the Partnerships for Minorities in Engineering and Computer Science (PMECS) program will be selected to participate. We will collect pre- and post-camp data on SAT and ACT preparation and use this to introduce future college readiness preparation programs.

10. Form diversity alliances with other universities and organizations, such as HBCUs in SC, and soliciting input from CEC and department-level Industrial Advisory Board members

11. Develop future plan and budget to support CEC diversity initiatives, such as

a. Form a diversity advisory board

b. Increase recruitment and retention of underrepresented and under-served minority and female students and faculty

c. Design diversity grant challenge program and elicit alumni support

d. Initiate brown-bag lunch discussions

e. Organize skill building program for underrepresented and under-served minority and female students and faculty for responding to discrimination and bias

12. Increase recruitment and retention of underrepresented and under-served minority and female students and faculty

University Open House Fall Recruitment:

Joint effort with Stefanie Perrell, CEC Outreach and Recruitment Director. Represented the CEC during Academic and Student Services Fairs hosted by Office of Undergraduate Admissions

CEC Fall Recruitment:

Provided support (e.g., check-in students, directing families) during CEC Big Friday sessions

Targeted Yield Events for Admitted Students in Spring 2018:

Three DEI Connect held in conjunction with spring Big Friday sessions. DEI Connect is an invite-only yield event for admitted women and underrepresented minority students. This program includes highlights from diversity student organizations, small group interactions with current students, engineering and computing design challenge and parent breakout sessions.

Additional Recruitment Activities

College and Career Fair at Westwood High School in Blythewood, SC

SC SUPPORTED (NSF Includes Project)

Participate in grant focused on pre-calculus preparation for prospective engineering students in collaboration other SC universities, technical colleges, and high schools.

13. Design diversity grant challenge program and elicit alumni support

14. Initiate brown-bag lunch discussions

15. Organize skill building program for underrepresented and under-served minority and female students and faculty for responding to discrimination and bias

Supplemental Info - Campus Climate & Inclusion

Any additional information about Campus Climate and Inclusion appears as Appendix 9. (bottom)

Concluding Remarks

Quantitative Outcomes

Explanation of any surprises with regard to data provided in the quantitative outcomes throughout this report.

•Nice jump in number of total and entering African American students
•37% increase in sponsored awards
•Impressive IP activity
•Still very high student to TT ratio

Cool Stuff

Describe innovations, happy accidents, good news, etc. that occurred within your unit not noted elsewhere in your reporting.

Appendix 1. Academic Programs

Historical Summaries

School

University of South Carolina

(click on school name to select another school)

Year*	Overall	Aero	Biomedical	Chemical	Civil	Comp Engr	Electrical	Environmental	Mechanical	Nuclear
2018	97	N/R	96	61	76	99	107	N/R	87	19
2017	104	N/R	98	58	82	86	124	N/R	105	20
2016	105	N/R	87	61	81	112	109	81	89	20
2015	99	N/R	92	54	81	111	83	63	88	20
2014	94	N/R	78	54	84	84	102	68	88	27
2013	97	N/R	78	54	72	95	113	76	93	23
2012	104	N/R	N/R	61	78	94	106	N/R	107	N/R
2011	102	N/R	N/R	68	81	78	120	74	111	22
2010	102	N/R	N/R	68	81	N/R	120	74	111	22
2009	99	N/R	N/R	58	91	99	101	71	116	N/R
2008	113	N/R	N/R	53	92	87	104	74	102	N/R
2007	112	N/R	N/R	59	89	92	113	66	121	N/R
2006	113	N/R	N/R	62	94	94	110	70	108	N/R
2005	104	N/R	N/R	61	78	94	106	N/R	107	N/R

* - Year of announcement (e.g. 20016 denotes March, 2016 rankings)

(Computer Science rankings are reported in USN&WR [non-engineering] grad school rankings. We do not have access to those rankings.)

Appendix 3. Research & Scholarly Activity

Office of Research
Information Technology & Data Management

College of Engineering & Computing

Fiscal Year 2017

UNIVERSITY OF SOUTH CAROLINA

Faculty Information

RESEARCH AND SCHOLARLY ACTIVITY

The following refers to Appendix 1, 2 & 3 , which provides detailed information from the Office of the Vice President for Research, department of Information Technology and Data Management, including:

1) The total number and amount of externally sponsored research proposal submissions by funding source for the appropriate Fiscal Year.

2) Summary of externally sponsored research awards by funding source for the appropriate Fiscal Year. Total extramural funding processed through Sponsored Awards Management (SAM) in the Fiscal Year, and federal extramural funding processed through SAM in the Fiscal Year. (Available at: http://sam.research.sc.edu/awards.html) Amount of sponsored research funding per faculty member in FY YYYY (by rank, type of funding; e.g., federal, state, etc., and by department, if applicable).

3) Number of patents, disclosures, and licensing agreements for three most recent Fiscal Years.

Identified areas of challenge and opportunities with faculty research and scholarly activity, referencing Academic Analytics data (through 2015) and the report provided by the Office of Research's Information Technology and Data Management, including specific plans to meet these challenges or take advantage of the opportunities.

Summary of Extramural Proposal Submissions by Source FY2017

Appendix 1

PI Home Department	Amount First Year	Commercial	Federal	Other	Private, Non-Profit	State
Chemical Engineering	7374587	10	42	1	4	1
Civil & Environmental Engineering	4115245	3	27	3	2	2
Computer Science & Engineering	4931935	1	31			2
Electrical Engineering	9031115	1	39		1	
Engineering & Computing, College of	372703		1	2	1	
Mechanical Engineering	11770975	7	55	2	3	3
Total Count	***174***	***15***	***140***	***6***	***8***	***5***
Total Amount First Year	***37,596,560***	***2,220,646***	***32,909,111***	***655,082***	***467,017***	***1,344,704***

Extramural Funding by Source, Department, Faculty & Rank - FY2017
Appendix 2

PI Home Department	Total Dept Funding	PI Name	Primary Job/Rank	Tenure Status	Total Funding	Commercial	Federal	Other	Private, Non-Profit	State
Chemical Engineering		Alexeev, Oleg	RESEARCH PROFESSOR		332,659	332,659				
Chemical Engineering		Gower, Robert	ASST PROFESSOR		196,021		196,021			
Chemical Engineering		Hattrick-Simpers, Jason			-15,116		-15,116			
Chemical Engineering		Heyden, Andreas	PROFESSOR	TENURED	725,512		725,512			
Chemical Engineering		Jabbarzadeh, Ehsan	ASSOC. PROFESSOR	TENURED	249,924		249,924			
Chemical Engineering		Lauterbach, Jochen	PROFESSOR	TENURED	623,468	54,000	569,468			
Chemical Engineering		Monnier, John	PROFESSOR	TENURED	490,854	181,854	309,000			
Chemical Engineering		Moss, Melissa	PROFESSOR	TENURED	149,048		149,048			
Chemical Engineering		Padak, Bihter	ASST PROFESSOR		10,255				10,255	
Chemical Engineering		Ploehn, Harry			-60					-60
Chemical Engineering		Regalbuto, John	PROFESSOR	TENURED	666,974		666,974			
Chemical Engineering		Ritter, James	PROFESSOR	TENURED	310,000	200,000	110,000			
Chemical Engineering		Shimpalee, Sirivatch	RESEARCH PROFESSOR		62,499		62,499			
Chemical Engineering		Uline, Mark	ASST PROFESSOR		73,250		73,250			
Chemical Engineering		Weidner, John	PROFESSOR	TENURED	372,317	114,836	37,000		220,481	
Chemical Engineering		White, Ralph	PROFESSOR	TENURED	-5,787		-5,787			
Chemical Engineering		Williams, Christopher	PROFESSOR	TENURED	128,988	27,000	101,988			
Chemical Engineering		Yu, Miao	ASSOC. PROFESSOR		1,488,749		1,488,749			
Total Chemical	***5,859,555***									
Civil & Environmental Engineering		Berge, Nicole	ASSOC. PROFESSOR	TENURED	19,039				19,039	
Civil & Environmental Engineering		Chaudhry, M.	PROFESSOR	TENURED	0		0			
Civil & Environmental Engineering		Flora, Joseph	ASSOC. PROFESSOR	TENURED	53,652		53,652			
Civil & Environmental Engineering		Gassman, Sarah	ASSOC. PROFESSOR	TENURED	1,762,300		1,762,300			
Civil & Environmental Engineering		Huynh, Nathan	ASSOC. PROFESSOR	TENURED	497,250		497,250			
Civil & Environmental Engineering		Matta, Fabio	ASSOC. PROFESSOR	TENURED	227,825		227,825			
Civil & Environmental Engineering		Sasanakul, Inthuorn	ASST PROFESSOR		584,107	12,000	572,107			
Civil & Environmental Engineering		Yoon, Yeomin	ASSOC. PROFESSOR	TENURED	14,621			14,621		
Civil & Environmental Engineering		Ziehl, Paul	PROFESSOR	TENURED	219,199		199,200	19,999		
Total Civil & Env.	***3,377,993***									
Computer Science & Engineering		Bakos, Jason	PROFESSOR	TENURED	75,000		75,000			
Computer Science & Engineering		Beer, Jenay	ASST PROFESSOR		140,756		34,275		106,481	
Computer Science & Engineering		Farkas, Csilla	PROFESSOR	TENURED	180,975					180,975
Computer Science & Engineering		Gay, Gregory	ASST PROFESSOR		173,528		173,528			
Computer Science & Engineering		O'Kane, Jason	ASSOC. PROFESSOR	TENURED	359,982		359,982			
Computer Science & Engineering		Rekleitis, Ioannis	ASST PROFESSOR		526,405		526,405			
Computer Science & Engineering		Terejanu, Gabriel	ASST PROFESSOR		365,157		365,157			
Computer Science & Engineering		Tong, Yan	ASSOC. PROFESSOR	TENURED	60,127		31,018		29,109	
Computer Science & Engineering		Valafar, Homayoun	PROFESSOR	TENURED	384,845		384,845			
Computer Science & Engineering		Valtorta, Marco	PROFESSOR	TENURED	49,696		49,696			
Computer Science & Engineering		Wang, Song	PROFESSOR	TENURED	137,258		137,258			
Total Computer Science	***2,453,729***									
Electrical Engineering		Ali, Mohammod	PROFESSOR	TENURED	259,469	123,213	136,256			
Electrical Engineering		Benigni, Andrea	ASST PROFESSOR		160,000	70,000	90,000			
Electrical Engineering		Dougal, Roger	PROFESSOR	TENURED	395,373	-23,983	419,356			
Electrical Engineering		Ginn, Herbert	ASSOC. PROFESSOR	TENURED	365,681	20,000	345,681			
Electrical Engineering		Mandal, Krishna	ASSOC. PROFESSOR	TENURED	-1,591		-1,591			
Electrical Engineering		Matolak, David	PROFESSOR	TENURED	2,266,383		2,266,383			
Electrical Engineering		Santi, Enrico	ASSOC. PROFESSOR	TENURED	22,142	22,142				
Electrical Engineering		Zhang, Bin	ASST PROFESSOR		28,125		28,125			

Total Electrical	***3,495,582***									
Eng & Computing Dean's Office		Rhodes, Burton	PROJECT MANAGER		4,557	4,557				
Total Dean's Office	***4,557***									
IIT - Engineering		Schooley, Benjamin	ASST PROFESSOR		137,989	70,057				67,932
Total IIT	***137,989***									
Mechanical Engineering		BADEA, MADALINA	RESEARCH ASST PROF		75,000		75,000			
Mechanical Engineering		Banerjee, Sourav	ASSOC. PROFESSOR	TENURED	108,663		108,663			
Mechanical Engineering		Bayoumi, Abdel	PROFESSOR	TENURED	425,526	166,390	89,136			170,000
Mechanical Engineering		Besmann, Theodore	PROFESSOR	TENURED	869,918		869,918			
Mechanical Engineering		Chao, Yuh	PROFESSOR	TENURED	20,000		20,000			
Mechanical Engineering		Chen, Fanglin	PROFESSOR	TENURED	35,000		35,000			
Mechanical Engineering		Dryer, Frederick	RESEARCH PROFESSOR		358,645		358,645			
Mechanical Engineering		Farouk, Tanvir	ASST PROFESSOR		125,638		125,638			
Mechanical Engineering		Giurgiutiu, Victor	PROFESSOR	TENURED	242,875	123,989	118,886			
Mechanical Engineering		Gurdal, Zafer	PROFESSOR	TENURED	1,069,535	397,570	671,965			
Mechanical Engineering		Haj-Hariri, Hossein	PROFESSOR	TENURED	33,979		33,979			
Mechanical Engineering		Harik, Ramy	ASST PROFESSOR		158,857	78,408	80,449			
Mechanical Engineering		Huang, Kevin	PROFESSOR	TENURED	330,902		330,902			
Mechanical Engineering		Huang, Xinyu	ASSOC. PROFESSOR	TENURED	245,455		245,455			
Mechanical Engineering		Kaoumi, Djamel			-83,296		-83,296			
Mechanical Engineering		Khan, Jamil	PROFESSOR	TENURED	231,532	171,532	60,000			
Mechanical Engineering		Kidane, Addis	ASSOC. PROFESSOR	TENURED	678,238		678,238			
Mechanical Engineering		Knight, Travis	PROFESSOR	TENURED	1,090,903		1,090,903			
Mechanical Engineering		Li, Chen	PROFESSOR	TENURED	411,405		301,482		109,923	
Mechanical Engineering		Majumdar, Prasun	ASST PROFESSOR		199,998		199,998			
Mechanical Engineering		Reifsnider, Kenneth	EMERITUS	TENURED	52,955		52,955			
Mechanical Engineering		Reynolds, Anthony	PROFESSOR	TENURED	156,076		156,076			
Mechanical Engineering		Scopatz, Anthony	ASST PROFESSOR		671,065		668,065		3,000	
Mechanical Engineering		Shazly, Tarek	ASSOC. PROFESSOR	TENURED	73,250		73,250			
Mechanical Engineering		Sockalingam, Subramani	ASST PROFESSOR		50,000		50,000			
Mechanical Engineering		Sutton, Michael	PROFESSOR	TENURED	48,162	48,162				
Mechanical Engineering		Tarbutton, Joshua			-129,896		-129,896			
Mechanical Engineering		van Tooren, Michael	PROFESSOR	TENURED	1,502,399	1,301,466	200,933		0	
Mechanical Engineering		Won, Sang Hee	ASSOC. PROFESSOR		162,325			162,325		
Mechanical Engineering		Yu, Lingyu	ASSOC. PROFESSOR	TENURED	225,000		225,000			
Total Mechanical	***9,440,109***									
Total Engineering	***24,769,514***				***24,769,514***	***3,495,852***	***20,159,582***	***196,945***	***498,288***	***418,847***

Patents, Disclosures, and Licensing Agreements

Fiscal Year 2017

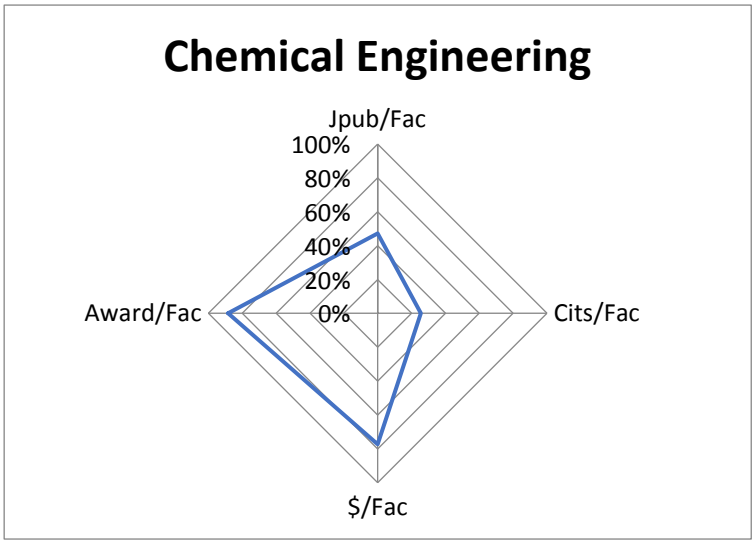
Appendix 3

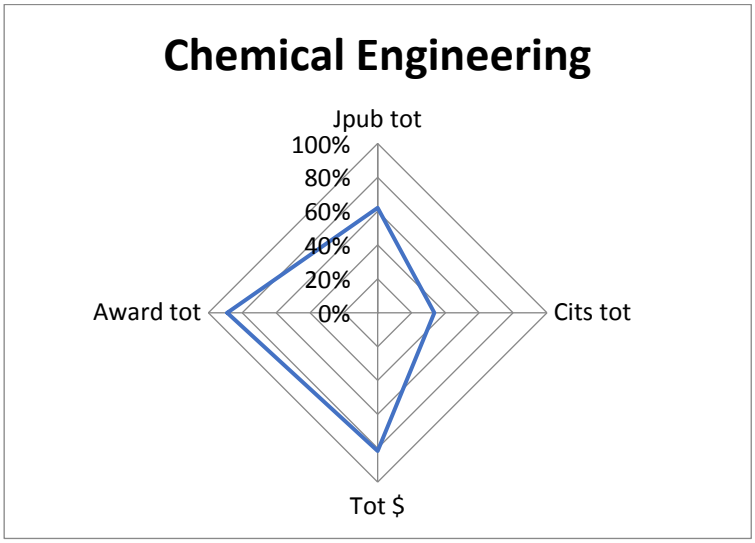
COLLEGE OF ENGINEERING & COMPUTING				
	Invention Disclosures	**Provisional Patent Applications**	**Non-Provisional Patent Applications**	**Issued Patents**
TOTALS:	**35**	**33**	**24**	**19**
Department Breakdown				
Aerospace Engineering	0	0	0	0
Biomedical Engineering	0	1	0	0
Chemical Engineering	20	15	3	1
Civil & Environmental	0	3	1	1
Computer Science & Engineering	0	1	0	1
Electrical Engineering	4	5	5	9
Integrated Information Technology	0	0	0	0
Mechanical Engineering	11	8	15	7
Nuclear Engineering	0	0	0	0

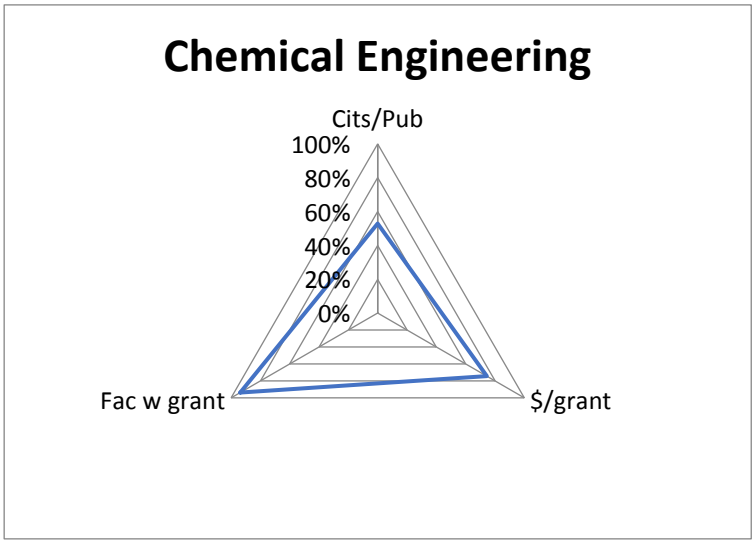
***Note:** These numbers include US, PCT, and foreign applications/patents

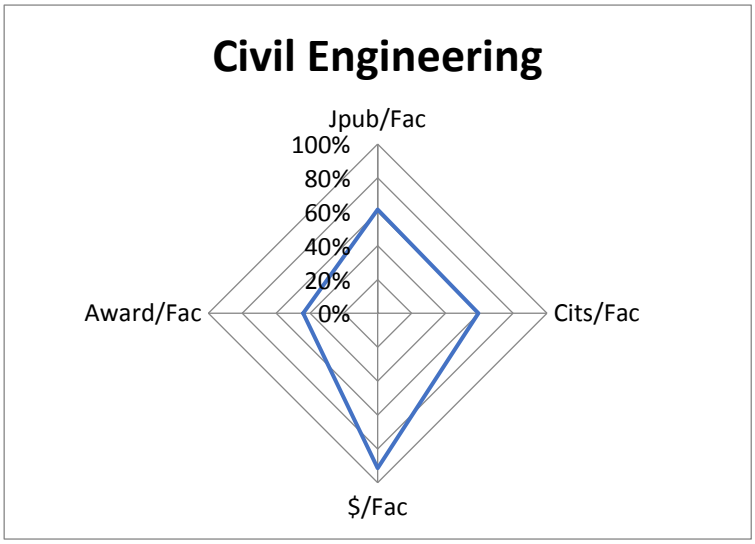
***Source:** Office of Economic Engagement

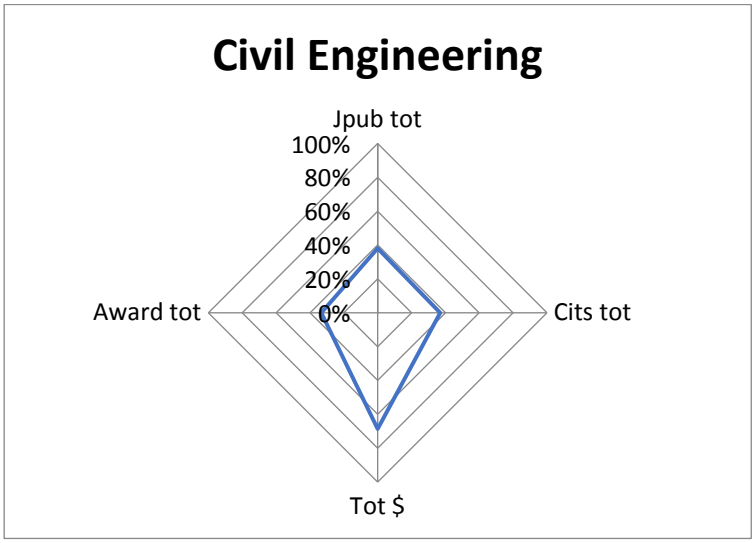
Appendix 4. Faculty Information

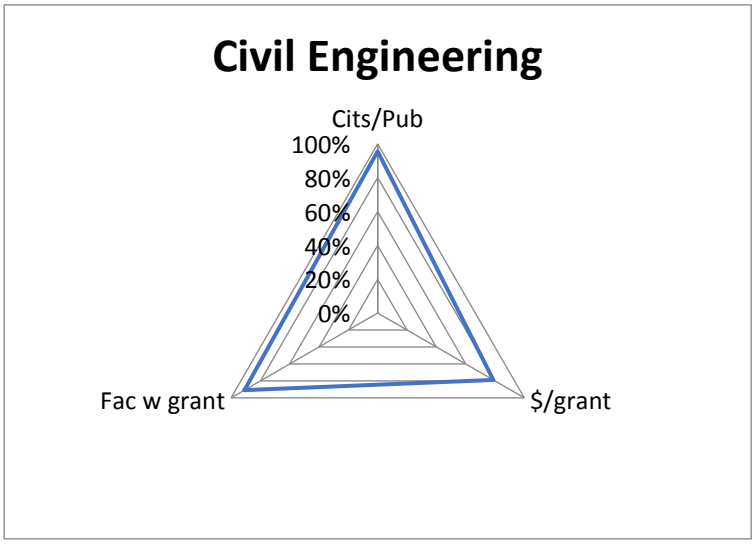

Chemical Engineering
Jpub/Fac
100%
80%
60%
40%
20%
0%
Award/Fac
Cits/Fac
$/Fac

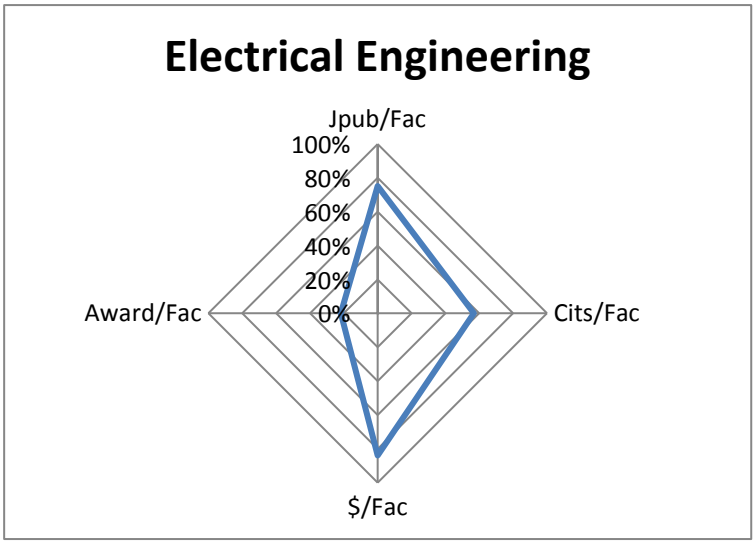

Chemical Engineering
Jpub tot
100%
80%
60%
40%
20%
0%
Award tot
Cits tot
Tot $

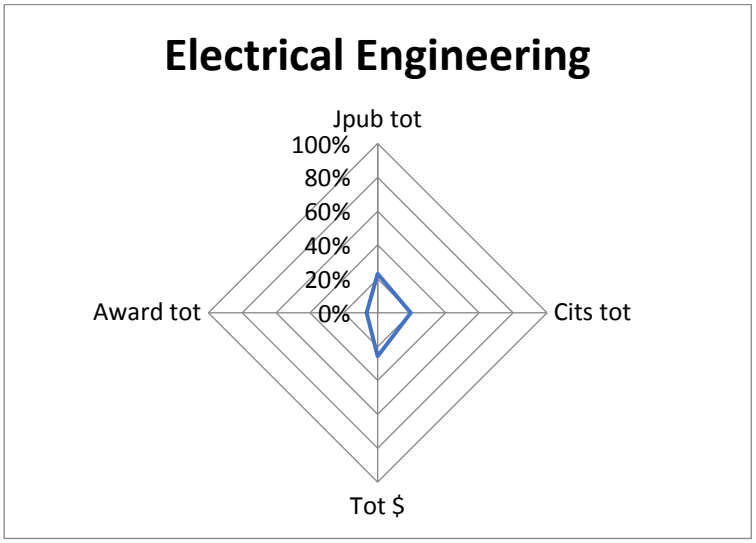

Chemical Engineering
Cits/Pub
100%
80%
60%
40%
20%
0%
Fac w grant
$/grant

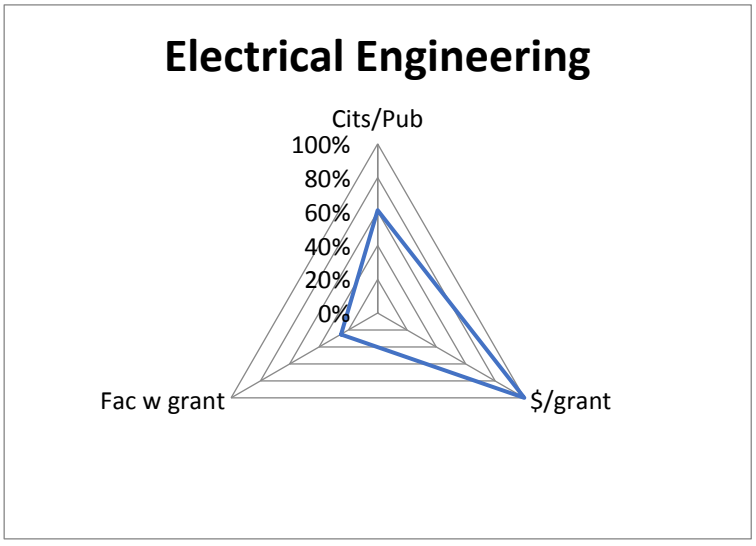

Civil Engineering
Jpub/Fac
100%
80%
60%
40%
20%
0%
Award/Fac
Cits/Fac
$/Fac

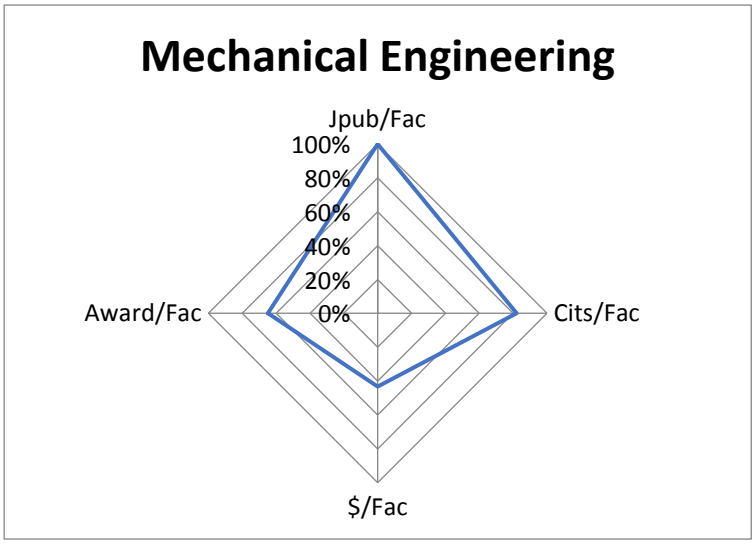

Civil Engineering
Jpub tot
100%
80%
60%
40%
20%
0%
Award tot
Cits tot
Tot $

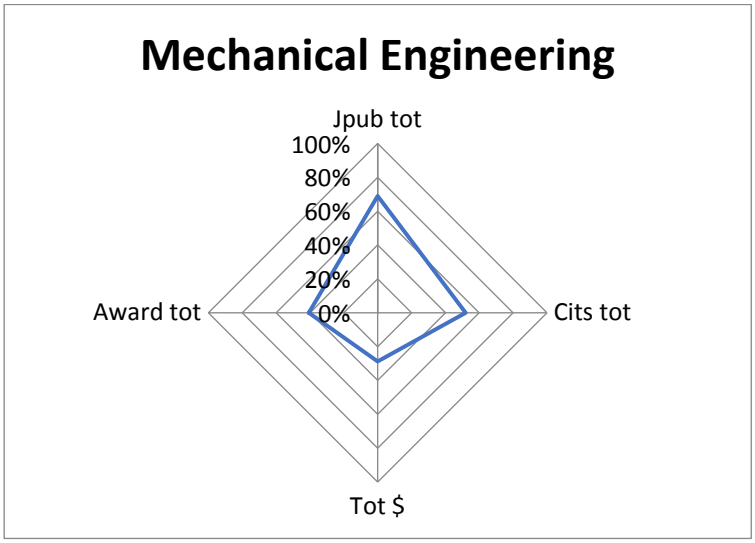

Civil Engineering
Cits/Pub
100%
80%
60%
40%
20%
0%
Fac w grant
$/grant

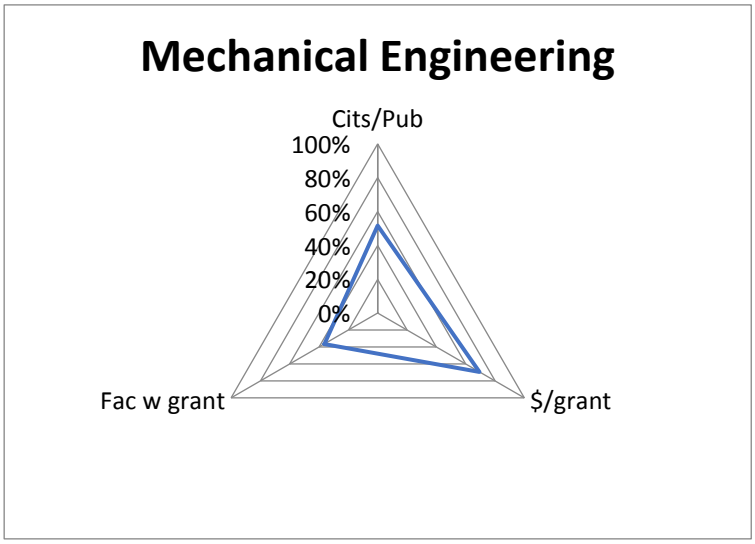

Electrical Engineering
Jpub/Fac
100%
80%
60%
40%
20%
0%
Award/Fac
Cits/Fac
$/Fac

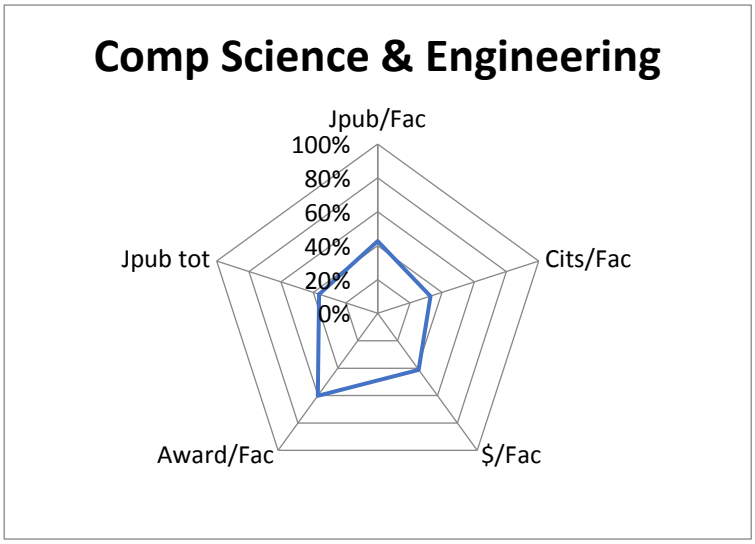

Electrical Engineering
Jpub tot
100%
80%
60%
40%
20%
0%
Award tot
Cits tot
Tot $

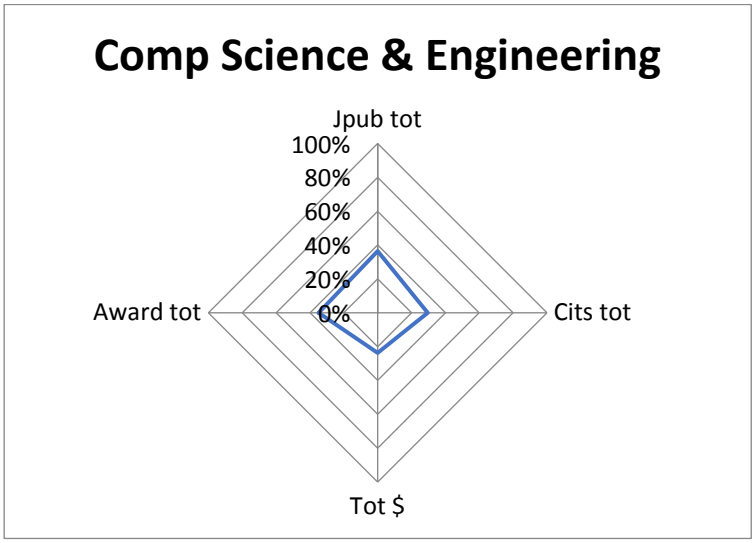

Electrical Engineering
Cits/Pub
100%
80%
60%
40%
20%
0%
Fac w grant
$/grant

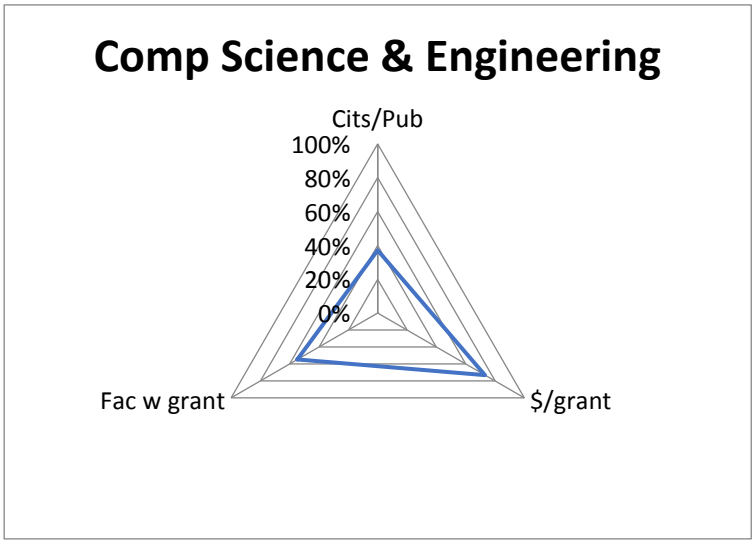

Mechanical Engineering
Jpub/Fac
100%
80%
60%
40%
20%
0%
Award/Fac
Cits/Fac
$/Fac


Mechanical Engineering
Jpub tot
100%
80%
60%
40%
20%
0%
Award tot
Cits tot
Tot $


Mechanical Engineering
Cits/Pub
100%
80%
60%
40%
20%
0%
Fac w grant
$/grant


Comp Science & Engineering
Jpub/Fac
100%
80%
60%
40%
20%
0%
Cits/Fac
$/Fac
Award/Fac
Jpub tot


Comp Science & Engineering
Jpub tot
100%
80%
60%
40%
20%
0%
Cits tot
Tot $
Award tot


Comp Science & Engineering
Cits/Pub
100%
80%
60%
40%
20%
0%
$/grant
Fac w grant

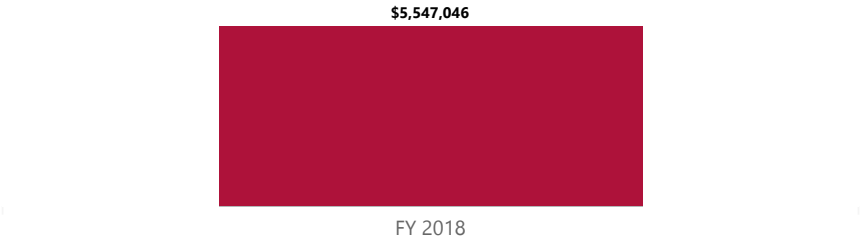
Appendix 6. Alumni Engagement & Fundraising

Unit Performance

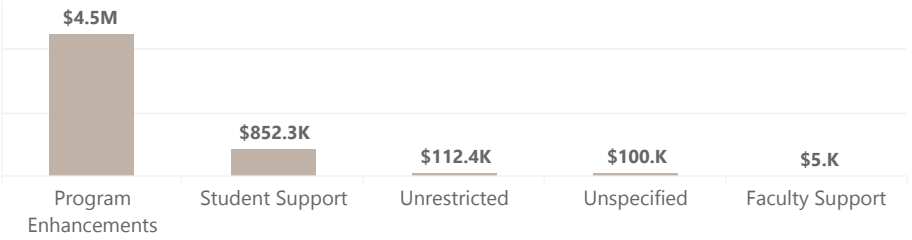
Gift Band	Unit	Year	Calculation
All	Engineering and Computi..	FY 2018	Production

Data update time: 3/2/2018 11:09:39 AM - Printed by Jancy Houck

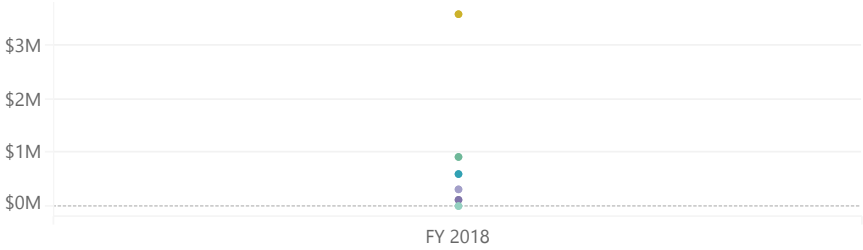
FY - YTD Production



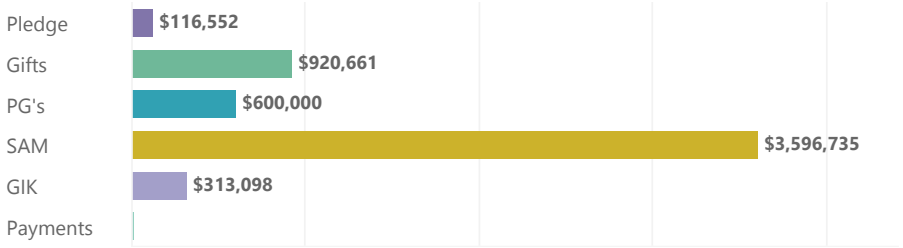
Total $ by Purpose



Gift Type

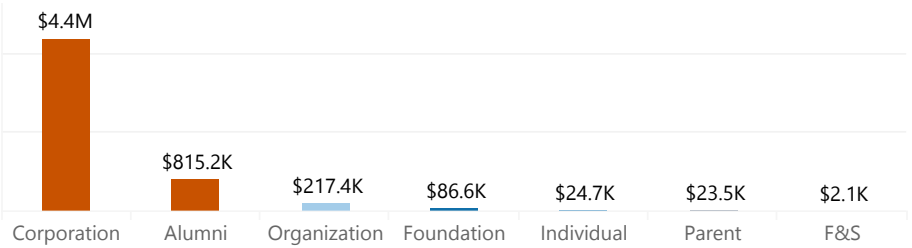


Total $ by Gift Type

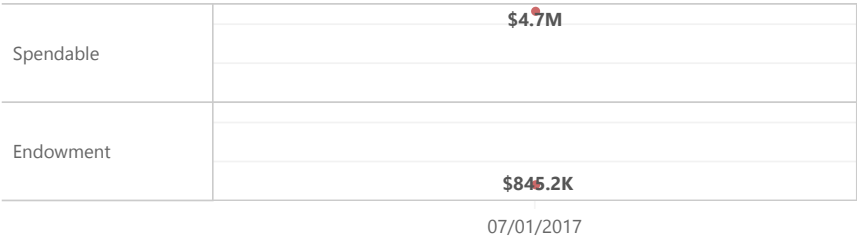


Donor # by Constituency

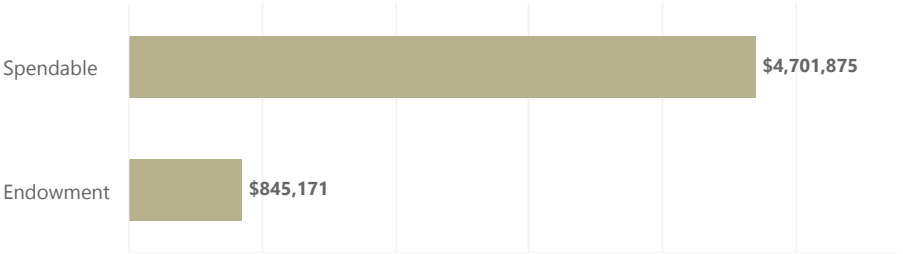
Total $ & Donor # by Constituency



Designation



Total $ by Designation



Appendix 7. Community Engagement

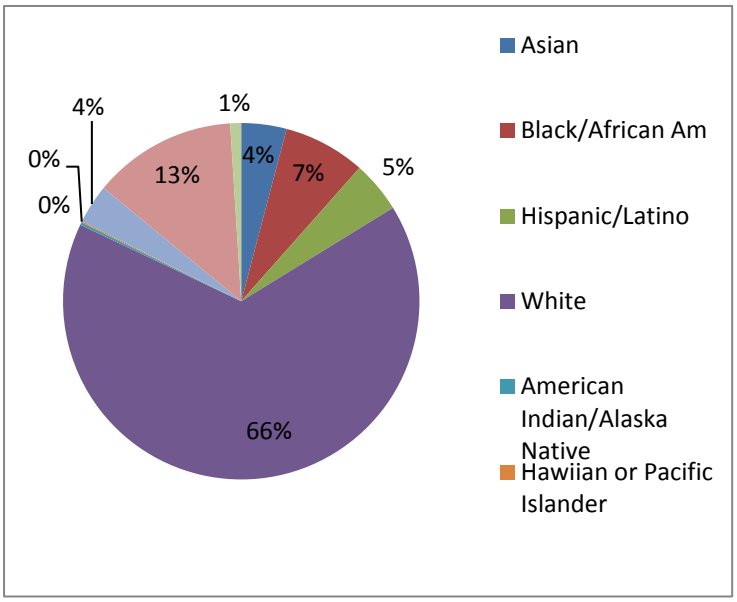
College of Engineering and Computing Diversity Activities

2017-2018

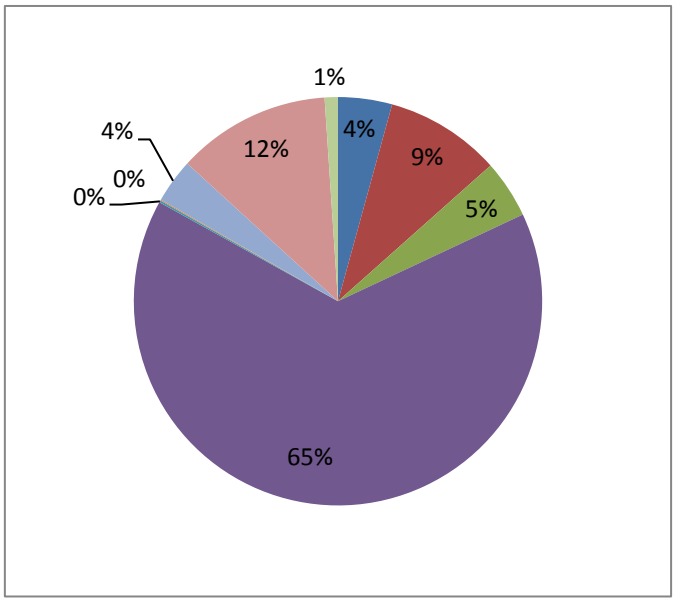
Appendix I

Student Diversity

College of Engineering and Computing, Fall 2016

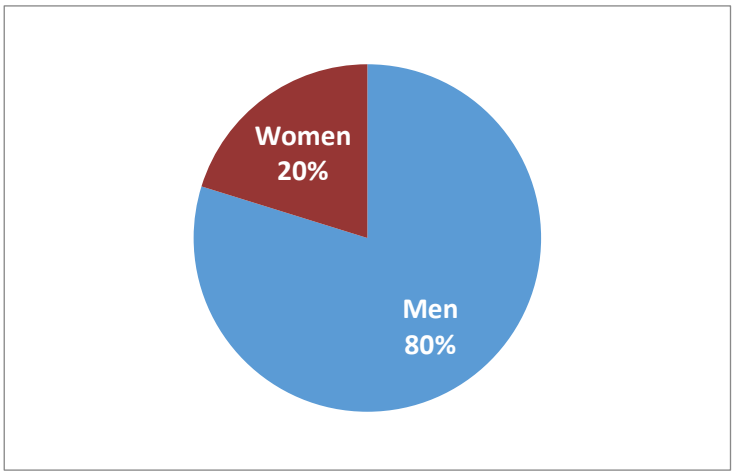


College of Engineering and Computing, Fall 2017*



*With the addition of Information Integrated Technology (IIT) to the college, African American IIT students now represent 19% of the African American CEC student population.

College of Engineering and Computing, Fall 2017

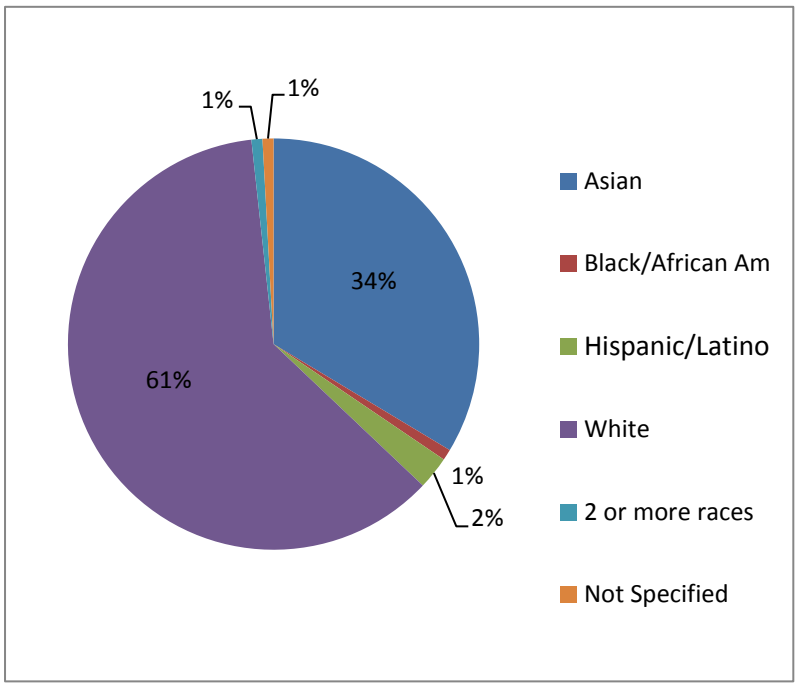


	2014		**2015**		**2016**		**2017**	
Men	2405	**81%**	2646	**80%**	2784	**80%**	3082	**80%**
Women	573	**19%**	664	**20%**	711	**20%**	783	**20%**

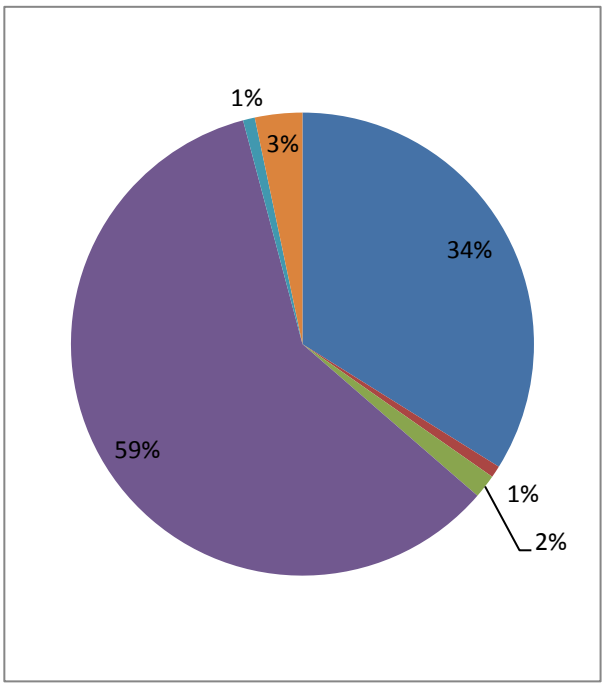
1

Faculty Diversity

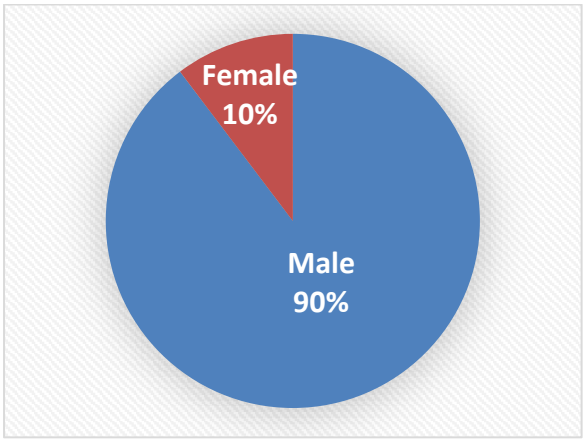
College of Engineering and Computing, Fall 2016



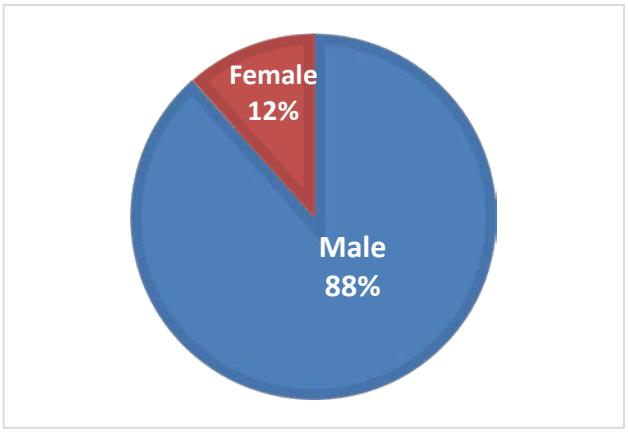
College of Engineering and Computing, Fall 2017



College of Engineering and Computing, Fall 2016



College of Engineering and Computing, Fall 2017



Appendix 9. Campus Climate & Inclusion

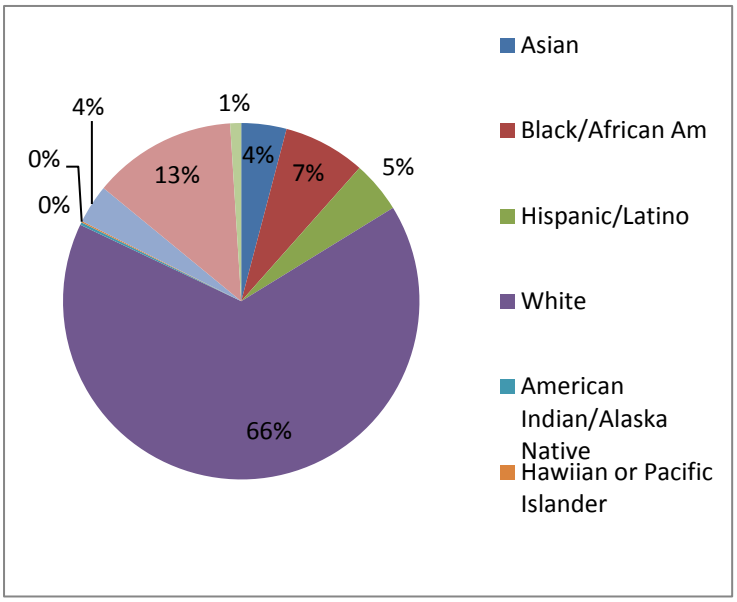
College of Engineering and Computing Diversity Activities

2017-2018

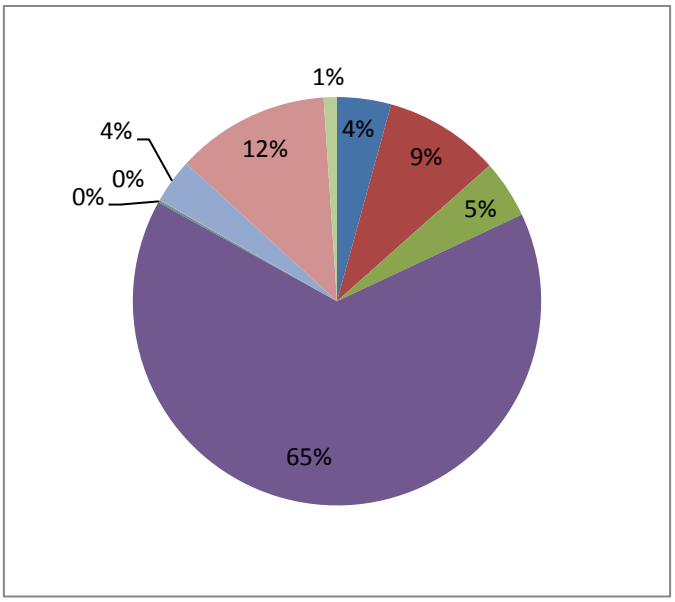
Appendix I

Student Diversity

College of Engineering and Computing, Fall 2016

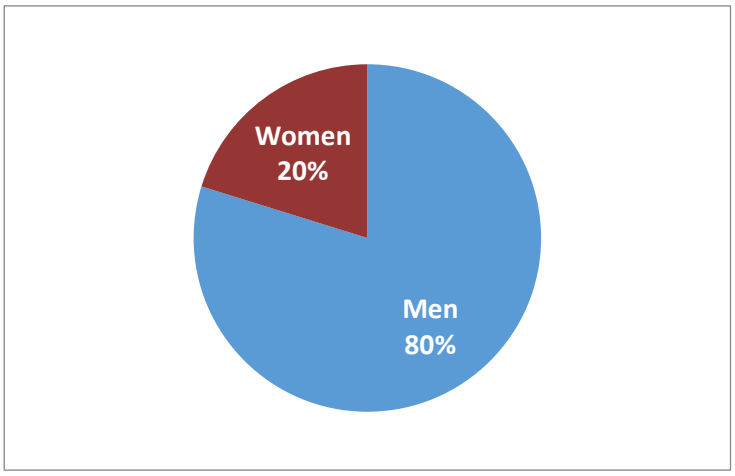


College of Engineering and Computing, Fall 2017*



*With the addition of Information Integrated Technology (IIT) to the college, African American IIT students now represent 19% of the African American CEC student population.

College of Engineering and Computing, Fall 2017

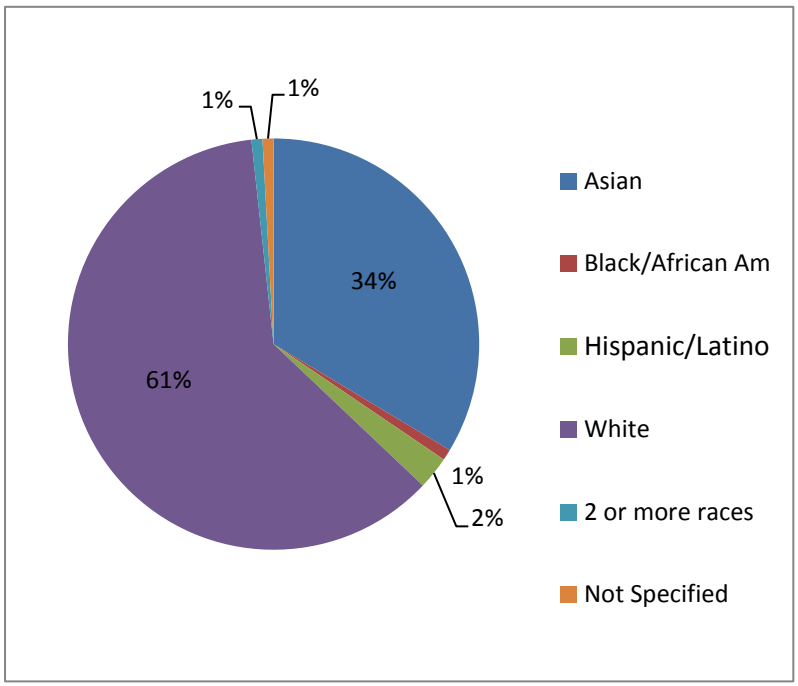


	2014		**2015**		**2016**		**2017**	
Men	2405	**81%**	2646	**80%**	2784	**80%**	3082	**80%**
Women	573	**19%**	664	**20%**	711	**20%**	783	**20%**

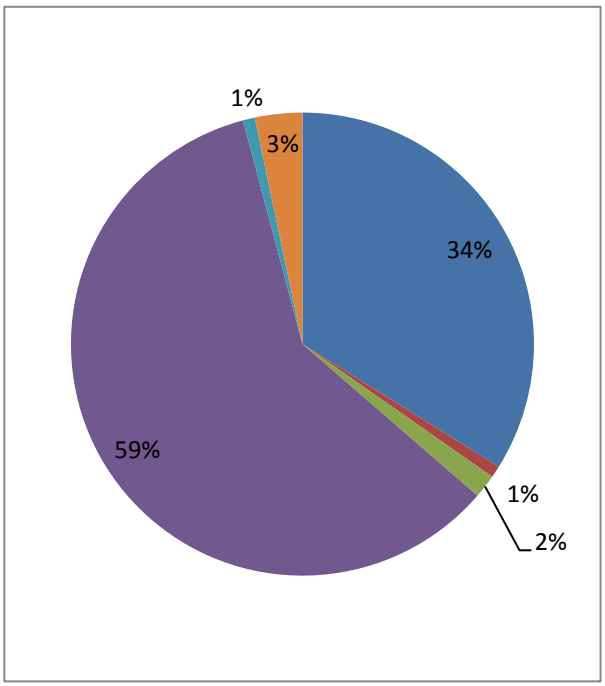
1

Faculty Diversity

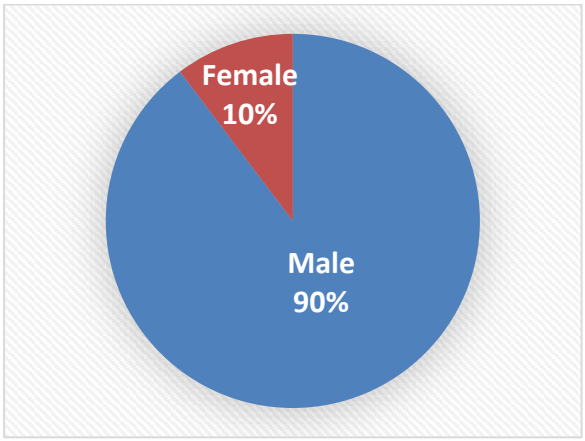
College of Engineering and Computing, Fall 2016



College of Engineering and Computing, Fall 2017



College of Engineering and Computing, Fall 2016



College of Engineering and Computing, Fall 2017