Executive Summary

Blueprint for Academic Excellence
College of Engineering & Computing
AY2019-2020

Introduction

CEC offers ten undergraduate degrees through its six departments, as well as six undergraduate minors, eight PhD degrees, 21 Masters degrees, and two graduate certificates. Enrollment for undergraduates is currently 3234, up 290% from 2006. Enrollments for graduates is currently 566. CEC has the third highest number of students in the SC Honors College (396 students). 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

• USC Artificial Intelligence Institute underway.

• Fall freshman class grew modestly to 778 (+2%). This year we are on pace to increase by another 4%.

• Sponsored Research Awards increased by 10.8% (on top of 37% the prior year) .

• Number of Underrepresented Minority students entering CEC increased by 13% from 161 to 183.

• Hired 14 TT faculty and 5 instructors (currently searching for 10 TT positions).

• Meaningful industry, academic and international collaborations.

Hossein Haj-Hariri , Dean
USC Educational Foundation Distinguished Professor
College of Engineering and Computing

UNIVERSITY OF
SOUTH CAROLINA
College of Engineering
and Computing

Blueprint for Academic Excellence
College of Engineering & Computing
AY2019-2020

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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, pre-awards office personnel, professional advising and student services, TA support, lecturer support (move towards elimination of TA taught courses/sections), new computer classrooms •Seeking and establishing partnerships •Return of 30% of the overhead to the departments, and 1/3rd thereof to the faculty in further support of their research •Continued refinement of departmental budgets •Continued Improvement of IT practices across the College
Resources Utilized	
Goal Continuation	This goal remains in effect every year.
Goal Upcoming Plans	Detailed in appropriate sections
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)

Goals - Real Time

Goals for the College of Engineering & Computing that are in progress for AY2019-2020.

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	

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 •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. •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 14 faculty and 5 lecturers. •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	•Lab and Office Space •Startups
Goal Notes	

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. •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	•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	•Continuation of matching funds is needed to provide for startups. •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	•Our hiring has been on hold because of a ~$10M uncertainty in CEC budget.

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. •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. •Complete executed MOU with SC State on various joint/dual/accelerate degree options. The MOU with Claflin University has been completed. •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 14 faculty and 5 lecturers •Continue hiring faculty and lecturers to drive student/faculty ratio to 20 •Invest in engineering and computing laboratory upgrades (~$500K/yr) •Implemented First Year Advising •Implemented Second Year Advising •Expanded Student Success Center programs in Swearingen •Expanded 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 International collaborations
Achievements	
Resources Utilized	
Goal Continuation	
Goal Upcoming Plans	•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 and innovative solutions 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 (IBM Watson). •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 24 Honors specific sections need to hire more instructors •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 to serve all USC 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. •Artificial Intelligence Institute •Continued research and economic engagement partnerships
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. •Continued matching funds to pay for faculty startups.
Goal Notes	

Academic Programs

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 105th two years ago, to 95th today. 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 finally have filled the position of senior director for communications and are expanding that office.

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.

Articulation Agreement: USC CEC and Midlands Tech to provide a clear path for students attending MTC to transfer to into USC's BS in Eng programs (Chemical, Civil, Electrical and Mechanical)
Grad Degree Program: Master of Health in Information Tech in CEC
Dual Degrees Programs: •
USC CEC with Claflin Univ: BS in Chemical Eng from CEC and BS in Chemistry from Claflin Univ•
USC CEC with SC State University

Program Terminations

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

Will soon finalize the termination of a number of MS degrees.**Supplemental Info - Academic**

Programs

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

Academic Initiatives

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

Faculty Population

Faculty Employment Summary

Table 1. Faculty Employment by Track and Title.

	Fall 2018	Fall 2017	Fall 2016
Tenure-track Faculty	126	119	109
Professor, with tenure	54	56	51
Associate Professor, with tenure	45	37	34
Assistant Professor	27	26	24
Librarian, with tenure	0	0	0
Research Faculty	12	11	12
Research Professor	3	3	3
Research Associate Professor	0	0	0
Research Assistant Professor	9	8	9
Clinical/instructional Faculty	20	13	8
Clinical Professor	1	0	0
Clinical Associate Professor	0	0	0
Clinical Assistant Professor	0	0	0
Instructor	19	12	7
Lecturer	0	0	0
Visiting	0	0	0
Adjunct Faculty	18	22	18

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 2018, Fall 2017, and Fall 2016.

	Fall 2018	**Fall 2017**	**Fall 2016**
Gender	159	143	128
Female	23	21	16
Male	136	122	112
Race/Ethnicity	159	143	128
American Indian/Alaska Native	0	0	0
Asian	47	44	41
Black or African American	2	2	1
Hispanic or Latino	5	4	4
Native Hawaiian or Other Pacific Islander	0	0	0
Nonresident Alien	12	7	5
Two or More Races	1	2	1
Unknown Race/Ethnicity	2	1	0
White	90	83	76

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

Illustration 1. Faculty Diversity by Gender

2018 Faculty Gender
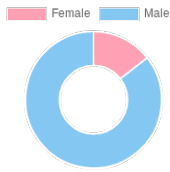
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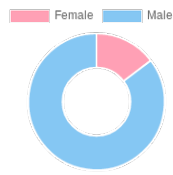
2016 Faculty Gender
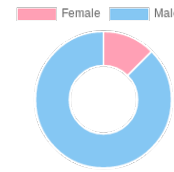
Illustration 2. Faculty Diversity by Race & Ethnicity
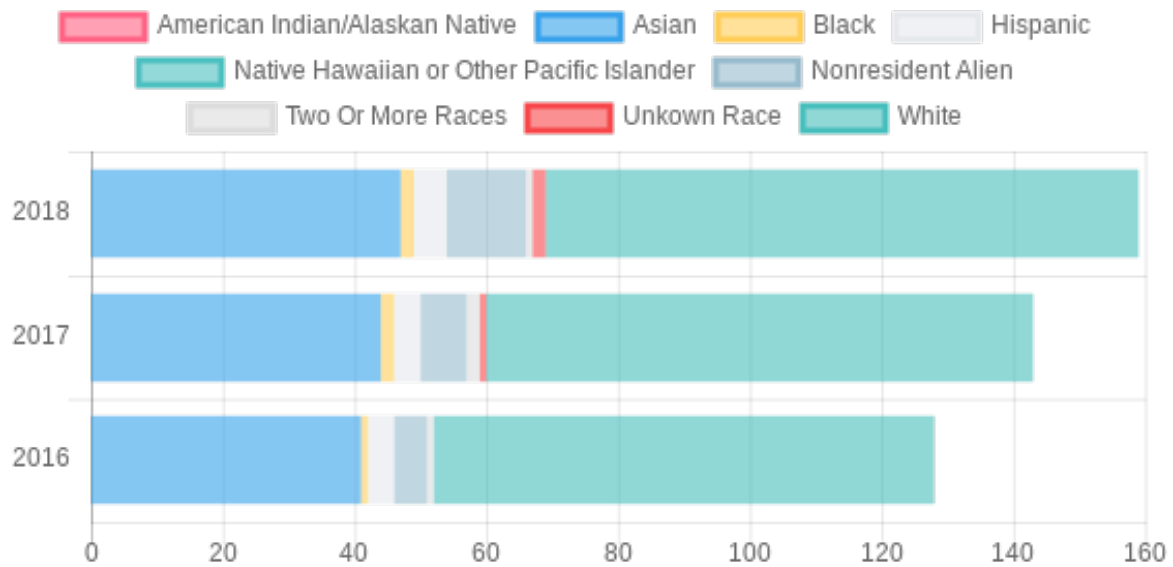
Faculty Information

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 2018 (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.

Academic Analytics Peer Comparison Blueprint 2019

All departments have been given data from Academic Analytics and other sources. Following departmental discussions, most programs have revised their set of peer and peer aspirant institutions. Please see appendix for chart

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?)

Please see appendix for information regarding present tables for each of our five PhD-granting departments (Computer Science and Engineering, and Chemical, Electrical, Mechanical, and Civil & Environmental Engineering), as well as the Biomedical Engineering program. For our Department of Computer Science and Engineering, we compare with other Computer Science departments nationwide, not Computer *Engineering.*

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

The college continued its 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 conducted its second annual one-half day Orientation for New CEC faculty, in August 2018. CEC maintains and adds to a BlackBoard site, containing all the handouts, presentations, and supplementary materials for the activities above. CEC had been using Hanover Research as an external consultant on some grants, and to provide some mentoring and an NSF CAREER workshop for new faculty. Results from this effort have not been as hoped, so the contract is being terminated. We will return to using our own resources and the PI Academy to provide the mentoring for new faculty.

We hired an Assistant Director of Pre-Award services in order to increase our capacity to prepare and submit grants, and to find funding. We arranged for faculty to be trained in the use of Pivot. We are now producing a bi-weekly email newsletter that highlights grant funding opportunities and research resources for our faculty.

CEC employed KB Science to help a senior faculty member write a very large team-based proposal to the Department of Energy. Unfortunately the project was not selected, but the same team is pursuing other opportunities including a National Science Foundation Engineering Research Center.

CEC continues to form inter-college and inter-university teams to pursue large interdisciplinary research projects. The topics include ocean engineering and security, big data science, and health. CEC and the College of Nursing collaborated to encourage teams of faculty to form to generate data in pursuit of interdisciplinary grants. Each college contributed $50,000 and three teams were given seed funding grants. We will report on the outcome of this in the next Blueprint period.

We have promoted one of our faculty to Associate Dean for Research, with a specific set of areas of responsibility. He works with the Senior Associate Dean for Research and Graduate Studies on all the above activities. The Senior Associate Dean is now able to devote more time to graduate studies and graduate student recruitment, as mentioned below.

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)

Teaching

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:

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

Table 4. Faculty-to-Student Ratio, Fall 2018, Fall 2017, and Fall 2016

Fall 2018	Fall 2017	Fall 2016
01:21.8	1:16.3	1: 26.0

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, 2017 and 2018 are: 24.5, 26.8. 27.0 and 26.0. 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

Faculty of CEC were recognized for their professional accomplishments in the categories of Research, Service, and Teaching.

Research Awards

Recipient(s)	Award	Organization
Chen, Frank	2019 Breakthrough Leadership in Research	USC VPR Office
Banerjee, Sourav	2019 Breakthrough Star	USC VPR Office
Matolak, David	2019 Breakthrough Leadership in Research	USC VPR Office
Yoon, Yeomin	CEC Research Progress Award	College
Knight, Travis	Research Achievement Award	CEC
Yoon, Yeomin	Research Progress Award	College
Farouk, Tanvir	Young Investigator Award	CEC
Giurgiutiu, Victor	Division Founders Award-Nondestructive Evaluation, Diagnosis and Prognosis	ASME
Chao, Yuh (Bill)	Founders Award for Contribution to DIC Development	International Society of Digital Image Correlation
Kidane, Addis	Young Investigator Award	SocietySEM for Experimental Mechanics
Kidane, Addis	The Peterson Award	SocietySEM for Experimental Mechanics
Kidane, Addis	P.S. Theocaris Award	SocietySEM for Experimental Mechanics

Service Awards

Recipient(s)	Award	Organization
Khan, Jamil	M. Biedenbach Service Award	CEC

Teaching Awards

Recipient(s)	Award	Organization
Farouk, Tanvir	2019 Ralph R. Teetor Educational Award	SAE
Jabbarzadeh, Ehsan	2018 South Carolina InnoVision Education Award	SC
Harik, Ramy	Samuel Litman Distinguished Professor Award	CEC
Gay, Gregory	2018 Graduate Teaching Award	CEC CSE Departmental Award

Other Awards

Recipient(s)	Award	Organization
Nelakuditi, Srihari	ACM Distinguished Member	Association for Computing Machinery
Valtorta, Marco	Named AAAI Senior Member	Association for the Advancement of Artifical Intellifence

Student Recruiting and Retention

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

Graduate We continue regular meetings of the departmental graduate directors and graduate administrators 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 won $10,000 proposals from the SC EPSCoR Office for funds to increase the diversity of the graduate student pool. The funds have been used in part to facilitate the hire of a visual and creative communications temporary hire in the college. We have now completely redone our graduate program recruiting materials, and have enlisted faculty and student in the recruiting effort at several national meetings. These include an annual graduate student fair at Oak Ridge National Laboratory, the National Society of Hispanic Engineers, and the National Society of Black Engineers.

The Senior Associate Dean has been awarded a second $10,000 grant from the state EPSCoR Office to help put on a graduate student recruiting event planned for October 2019. This is a "GRAD Lab" event, organized in collaboration with the National GEM Fellowship program. The event will benefit all STEM programs across campus, not just CEC. 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.

The Senior Associate Dean co-authored a $1M NSF proposal to establish the Louis Stokes SC Alliance for Minority Participation "Bridge to the Doctorate" program. If successful, this will fund a cohort of 12 incoming URM STEM PhD students for two years and will lead to development of campus-wide mentoring and support activities for this cohort.

The SEC Deans Fellows Program has been revamped. Also, we have identified funds to be used as top-off stipend funding for highly-qualified U.S. citizens and permanent residents who are seeing PhDs in CEC. We are rolling out this program now, hoping to award some fellowships in Fall 2019. We expect full benefit from this program for the Fall 2020 incoming class of graduate students, when it has been thoroughly marketed and used by the departments.

CEC continues participation 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. This database, along with the database from the National GEM Consortium, contains approximately 10,000 prospective graduate students from U.S. Institutions.

Student Retention

Efforts at retaining current students in College/School programs.

•

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 Two Year Advisors.•

Hand-Off Advising Model: CEC uses Two 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 Two Year Advisors: Our six Two Year Advisors hired though a partnership with the University Advising Center are part of the 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 Senior Associate Dean for Academic Affairs to all incoming students and families is data-driven and focuses on academic success strategies and student engagement recommendations.•

Major Change Workshops: These presentations by the Senior Associate Dean for Academic Affairs assist students that are exploring different majors within CEC. They supplement advising sessions as they address cross-disciplinary student questions.•

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.•

Conversations with the Dean: We organize opportunities for the Dean to meet with students and discuss a range of issues from professional development opportunities to student needs.•

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, 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 2018	Fall 2017	Fall 2016
Undergraduate Enrollment			
Freshman	727	691	595
Sophomore	666	665	650
Junior	665	669	626
Senior	1175	1185	1049
Sub Total	3234	3210	2920
Graduate Enrollment			
Masters	234	276	256
Doctoral	331	307	319
Graduate Certificate	1	2	0
Sub Total	566	585	575
Professional Enrollment			
Medicine	0	0	0
Law	0	0	0
PharmD	0	0	0
Sub Total	0	0	0
Total Enrollment (All Levels)	**3800**	**3795**	**3495**

Illustration 3. Undergraduate Student Enrollment by Classification
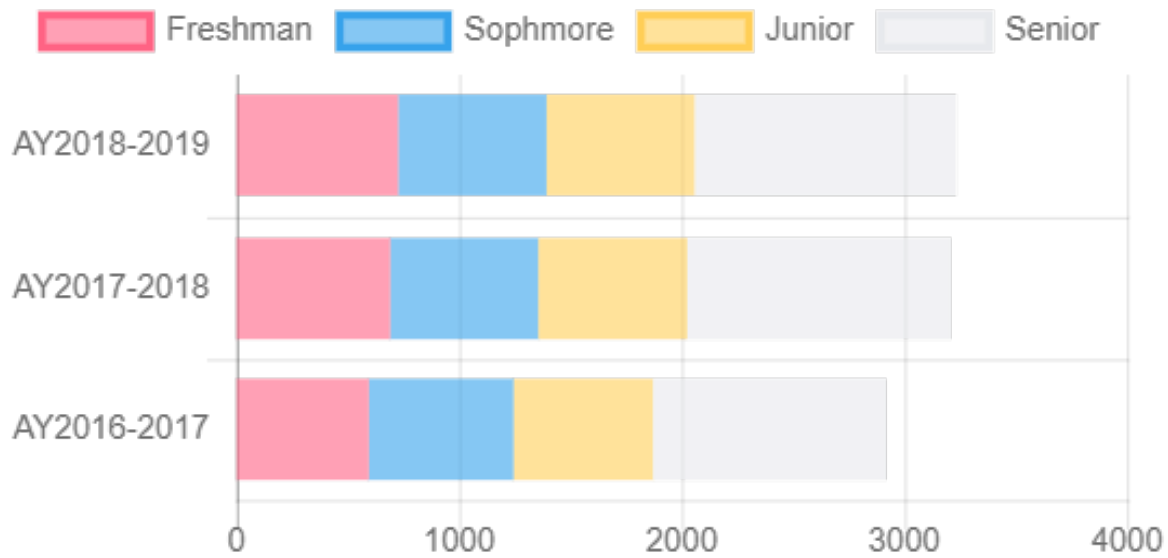
Illustration 4. Graduate/Professional Student Enrollment by Classification
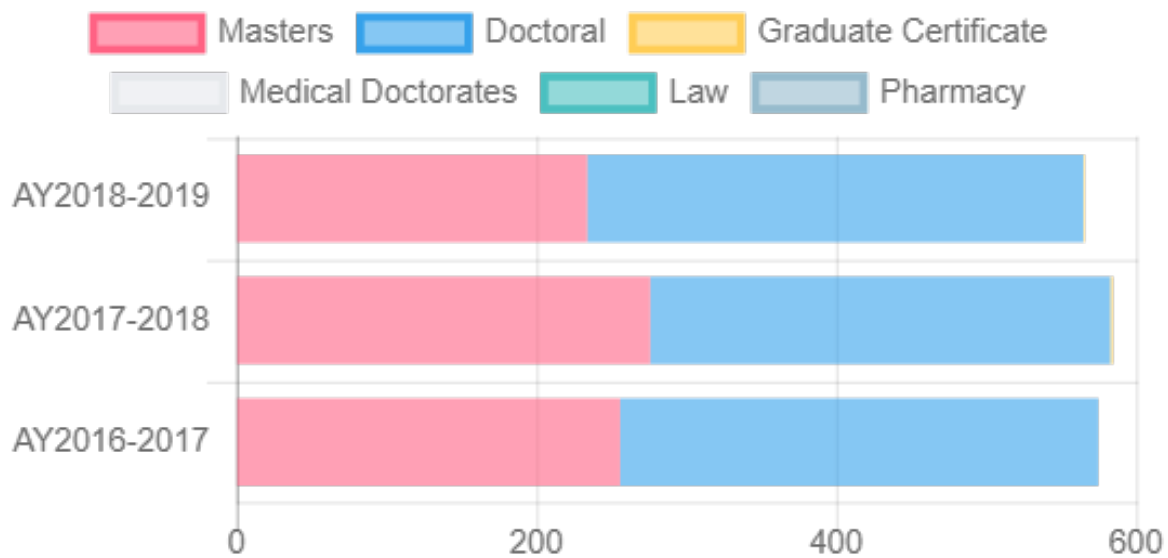
Illustration 5. Total Student Enrollment by Classification (All Levels)
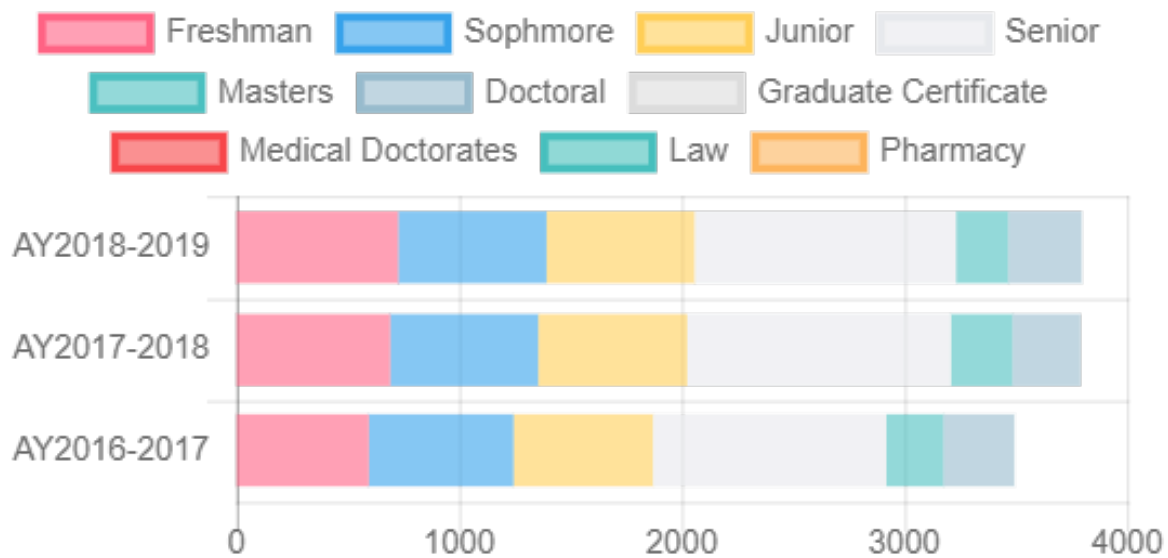
Enrollment by Time Status

Table 6. Student Enrollment by Level and Time Status.

	Fall 2018	Fall 2017	Fall 2016
Undergraduate	**3234**	**3210**	**2920**
Full-Time	3091	2985	2793
Part-Time	143	225	127
Graduate/Professional	**566**	**585**	**575**
Full-Time	410	420	441
Part-Time	156	165	134
Total - All Levels	**3800**	**3795**	**3495**
Full-Time	3501	3405	3234
Part-Time	299	299	299

Student Diversity by Gender
Table 7. Student Enrollment by Gender.

	Fall 2018	Fall 2017	Fall 2016
Undergraduate	**3234**	**3210**	**2920**
Female	682	634	579
Male	2552	2576	2341
Graduate/Professional	**566**	**585**	**575**
Female	125	132	132
Male	441	453	443

Illustration 6. Undergraduate Student Diversity by Gender

2018 Undergraduate Gender
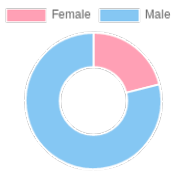
2017 Undergraduate Gender
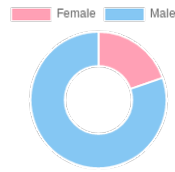
2016 Undergraduate Gender
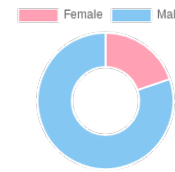
Illustration 7. Graduate/Professional Student Diversity by Gender

2018 Graduate Gender
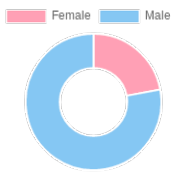
2017 Graduate Gender
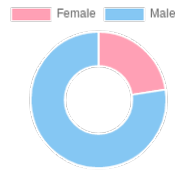
2016 Graduate Gender
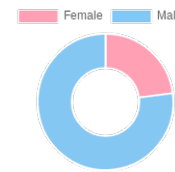
Student Diversity by Race/Ethnicity

Table 8. Student Enrollment by Race/Ethnicity.

	Fall 2018	Fall 2017	Fall 2016
Undergraduate	**3234**	**3210**	**2920**
American Indian/Alaska Native	7	6	9
Asian	153	147	126
Black or African	305	317	228
Hispanic or Latino	168	159	145
Native Hawaiian or Other Pacific Islander	4	2	2
Nonresident Alien	153	155	148
Two or More Races	128	116	103
Unknown Race/Ethnicity	30	35	32
White	2286	2273	2127
Graduate/Professional	**566**	**585**	**575**
American Indian/Alaska Native	2	0	0
Asian	14	14	18
Black or African	39	33	20
Hispanic or Latino	17	13	15
Native Hawaiian or Other Pacific Islander	0	2	2
Nonresident Alien	293	306	330
Two or More Races	15	17	10
Unknown Race/Ethnicity	6	5	3
White	180	195	177

Illustration 8. Undergraduate Student Diversity by Race/Ethnicity
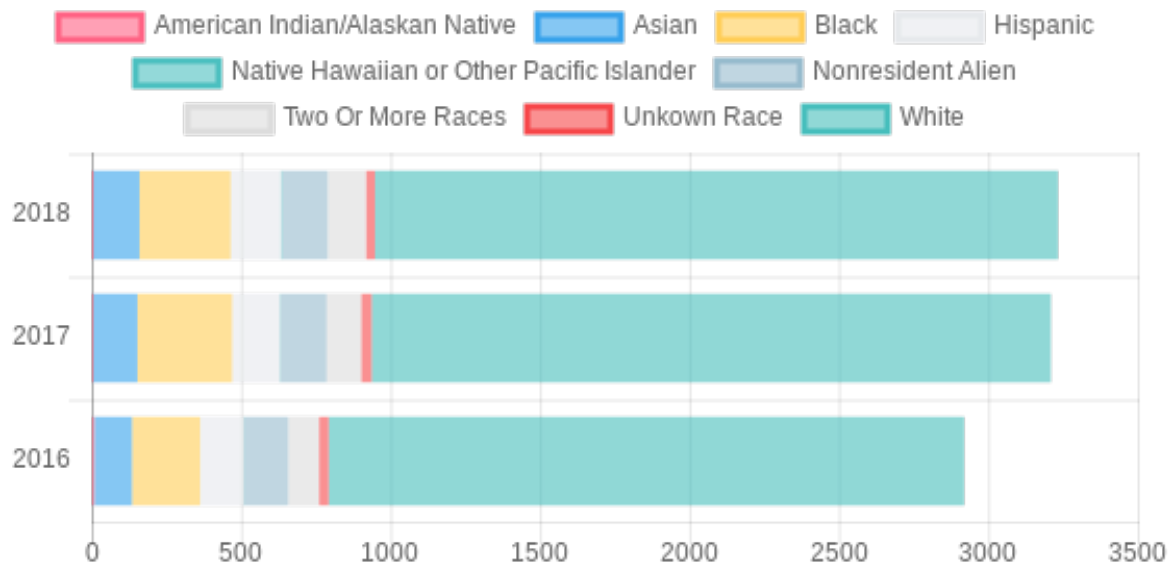
Illustration 9. Graduate/Professional Student Diversity by Race/Ethnicity
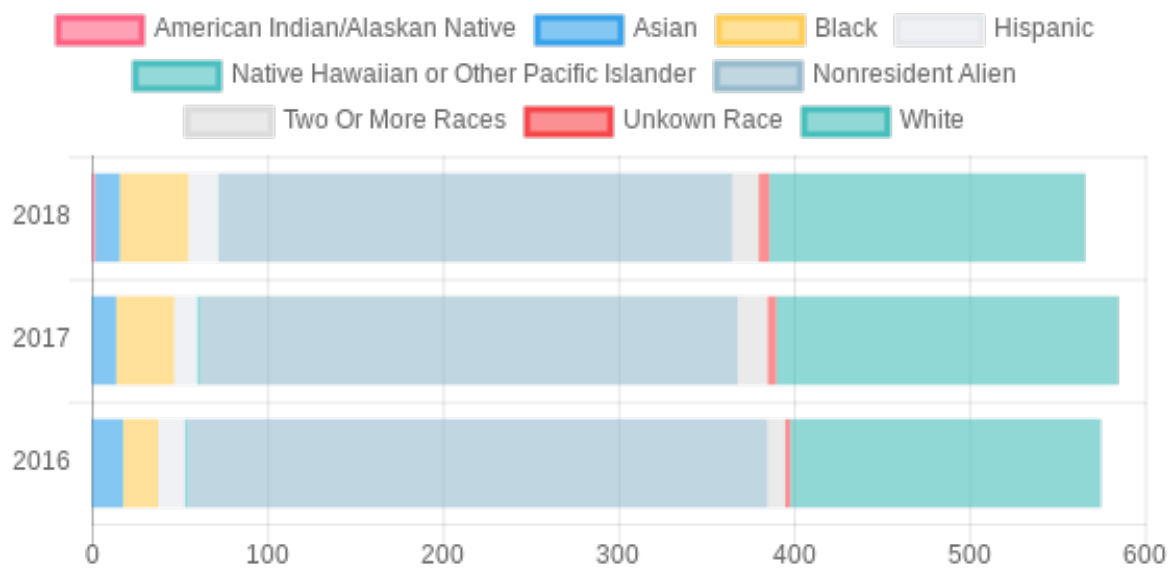
Undergraduate Retention

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

First Year
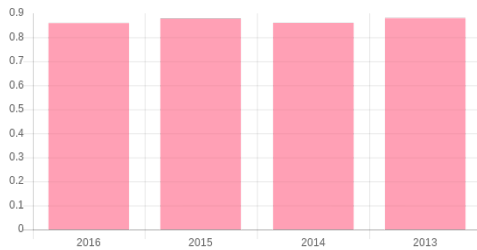
Second Year
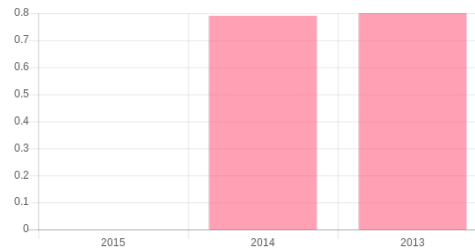
Student Completions

Graduation Rate - Undergraduate

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

	2011	2010	2009
4-Year Same	26.4%	24.3%	26.9%
4-Year Diff	10.6%	12.6%	14%
4-Year Total	37%	36.9%	40.9%
5-Year Same	38.5%	40.9%	39.5%
5-Year Diff	21.1%	22%	23.5%
5-Year Total	59.6%	62.9%	63%
6-Year Same	41.1%	42.8%	42.4%
6-Year Diff	23%	23.6%	27.1%
6-Year Total	64.1%	66.4%	69.5%

Degrees Awarded by Level

Table 11. Degrees Awarded by Level.

	AY2017-2018	AY2016-2017	AY2015-2016
Associates Degree	0	0	0
Bachelors	595	511	410
Masters	141	110	79
Doctoral	54	49	46
Medical	0	0	0
Law	0	0	0
Pharmacy Doctorate	0	0	0
Graduate Certificate	19	26	0

Illustration 11. Degrees Awarded by Level
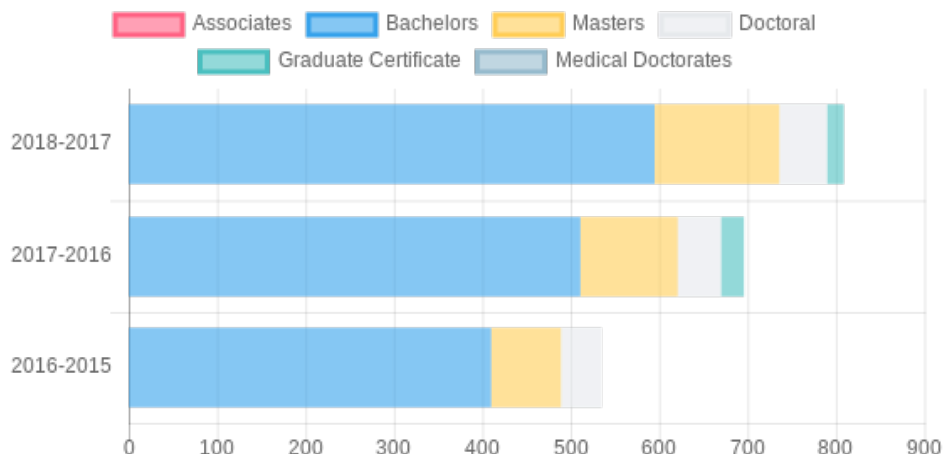
Alumni Engagement & Fundraising

Alumni

Substantial activities, engagements, and initiatives with alumni, focusing on relationships and activities with alumni.

In FY 18, the College of Engineering and Computing made some significant staffing increases and then in FY 19 lost their Senior Director of Development due to a family relocation and lost an Associate Director of Development in the Fall of 2018.

Development, Fundraising and Gifts

Substantial development initiatives and outcomes, including Fundraising and Gifts.

Alumni, Donor, and Corporate Outreach

In FY19, despite these changes the CEC maintained a calendar of old and new events. This included the following:

Annual Homecoming Celebration
Annual Scholar Donor Event
Young Alumni Board Inaugural Meeting
Faculty/Family Fund Appreciation event (New)
Cockaboose to promote Young Alumni Board
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

In January 2019, CEC hired Jennifer Shepard, Senior Director of Development. Jennifer came to CEC from the USC Honors College and prior to that was at Rensselaer Polytechnic Institute, University of Pennsylvania and Carnegie Mellon. Jennifer has focused a significant amount of time on organizing the school and department's priorities while focusing on alumni who have significant giving capacity.

Year-to-date the College has secured $4,522,610 in total giving from 375 donors. $517,184 of that has come from active alumni. With several major gifts pending we are at or close to exceeding FY 18 goal.

The Office of Development and Alumni Relations has one Assistant Director of Development position to be posted and a Director of Development FTE to be filled. The DOD will focus on business development at the mid-range level so not to overlap with the Office of Economic Engagement or the Central Development

Corporation and Foundations Office. CEC Development and Alumni Relations Office has spent many years focusing on corporate support and moving forward a new emphasis will be put on raising philanthropic support from alumni.

Community Engagement

Description

Community engagement and community based research, scholarship, outreach, service or volunteerism conducted, 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 2000 visitors to our College campus 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.

Collaborations

Internal Collaborations

•

Administration and Finance•
Arnold School of Public Health (Environmental Health Sciences; Health Promotions, Education and Behavior; Health Service Policy and Management; Epidemiology and Biostatistics)•
College of Arts and Sciences (Biological Sciences; Chemistry and Biochemistry; Mathematics; Physics & Astronomy; Geography; Archeology & Anthropology; Earth and Ocean Sciences; Statistics)•
College of Hospitality, Retail and Sports Management (Retailing)•
College of Information and Communication (Journalism and Mass Communication)•
College of Education (Educational Studies; Instruction and Teacher Education)•
College of Nursing•
College of Pharmacy (Drug Discovery & Biomedical Sciences; Clinical Pharmacy and Outcomes Sciences)•
Darla Moore School of Business (Management)•
Information Technology (High Performance Computing)•
School of Earth, Ocean and Environment•
School of Medicine (Cell Biology & Anatomy; Pathology, Microbiology & Immunology; Neuropsychiatry)•
University Libraries•
USC Aiken

External Collaborations

External Collaborations •
American Cancer Society•
American Institute of Chemical Engineers•
Apache Corporation•
BASF CorporationBattelle Energy Alliance, LLC•
Battelle Memorial Institute•
Boeing•
Booz Allen Hamilton•
C&B Tech•
CDF Research Corporation•
ClearSign Combustion Corporation•
Clemson University•
Coastal Carolina University•
College of Charleston•
Concurrent Technology Corporation•
Datos Consulting•
Duracell•
Emera Technologies, LLC•
Electric Power Research Institute•
ExxonMobil•
Florida State University•
Fokker AEROSTRUCTURES B.V.•
General Atomics•

George Mason University•
Giner Inc.•
Global Technology Connection, Inc.•
Golder Associates Ltd.•
Greenway Energy LLC•
GTD Unlimited•
HP Inc.•
Huawei Technologies Co., Ltd.•
Hyundai-Kia America Technical Center•
Intelligent Automation Inc•
Jacobs Engineering•
Korea Army Academy•
Korean Institute of Energy Research LAB•
Lawrence Livermore National Laboratory•
LG Fuel Cell Systems Inc.•
Los Alamos National Security, LLC•
Medical University of South Carolina•
Michigan State University•
National Energy Technology Laboratory•
National Institute of Aerospace Associates•
National Institute of Clean and Low-carbon Energy•
Navy Surface Warfare Center•
Neo Nanomedics Co. Ltd.-Korea•
NICE America Research Inc.•
Nuclear Regulatory Commission•
Ohio State University•
Reify, LLC•
Rensselaer Polytechnic Institute•
Safran Electrical & Power USA, LLC•
Savannah River National Lab•
Savannah River Nuclear Solutions•
SC Research Authority•
SC Space Grant Consortium•
Sejong University•
Siemens Energy, Inc.•
SMT, Inc•
Spectral Energies•
Sungkyunkwan University•
Sustainable Innovations, Inc.•
The Boeing Company•
The Regents of the University of California Lawrence Berkeley National Laboratory•
TIGHITCO•
Toray•
University of Mississippi•
Universal Technology Corporation (UTC)/ Air Force Research Laboratory (AFRL)•
University of Central Florida•
University of Kansas•
University of Puerto Rico•
University of Southern Mississippi•

University of Utah•
Virginia Commonwealth University

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

Campus Climate & Inclusion

Activities unit conducted that were designed to improve campus climate and inclusion.

The College of Engineering and Computing is committed to excellence through diversity. Our programs attract outstanding students with unique backgrounds and prepare them to be leaders in engineering and computing disciplines. We strive to create an academic environment that reflects the communities we serve and where all members feel valued and respected.

The purpose of the Office of Diversity, Engagement, and Inclusion (DEI) is to develop, coordinate, and promote resources to build a diverse and inclusive academic environment. Diversity, engagement, and inclusion are core values of the University of South Carolina and the College of Engineering and Computing.

Our vision is to create an academic environment where all members of the College of Engineering and Computing community are able to fully realize their potential. The College of Engineering and Computing aims be nationally recognized as a transformative and inclusive academic institute.

Our mission is to increase the diversity of students, faculty, and staff of the College of Engineering and Computing; to create an inclusive academic environment where all students, faculty, and staff are respected, understood, treated fairly, and valued.; and to improve the quality of life of our academic community and the external community through education, research, and thoughtful leadership.

The diversity blueprint is structured around the four strategic goals of the college:

Goal 1: Gain regional and national recognition of CEC as a leader in diversity efforts.

Goal 2: Develop an inclusive academic environment where discrimination and bias against any of the members of our community are not tolerated.

Goal 3: Increase the representation of underrepresented and underserved minorities and women in undergraduate and graduate CEC programs.

Goal 4: Increase the representation of underrepresented and underserved minorities and women in academic and administrative positions.

College of Engineering and Computing Facts

The College of Engineering and Computing (CEC) has historically low ethnicity and gender diversity across faculty, graduate student, and undergraduate student populations. Table 1 shows the gender and ethnic diversity percentages of the CEC faculty.

Despite focused efforts, gender and ethnic diversity of CEC faculty remains below national academic average. Ninety percent of CEC faculty are men. The worst gender diversity is at the Full Professor rank; 96% of the faculty are men.   Majority of the CEC faculty are White (56%) or Asian (40%) ethnic origin. Faculty participation with Hispanic/Latino (2%), African American (1%), or two-or-more (1%) ethnic origin are low.

Supplemental Info - Campus Climate & Inclusion

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

Concluding Remarks

Quantitative Outcomes

Explain any surprises regarding data provided in the quantitative outcomes modules throughout this report.

•

Notable increase in number of total and entering African American students•
10.8% increase in sponsored awards (on top of 37% the prior year)•
Continued impressive IP activity•
Still very high student to TT ratio, but decreasing

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	Comp	Electric	Environment	Mechanica	Nuclear
2019	95		93	56	89	92		97	N/R	77	RNP
2018	97	N/R	96	61	76	99	111	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

**O f f i c e   o f   R e s e a r c h
I n f o r m a t i o n   T e c h n o l o g y
&   D a t a   M a n a g e m e n t**

College of Engineering & Computing

Fiscal Year 2018

**UNIVERSITY OF
SOUTH CAROLINA**

Summary of Extramural Proposal Submissions by Source FY2017

Appendix 1

PI Home Department	Total Amt. First Year	Commercial	Federal	Other	Private/Non-Profit	State
Chemical Engineering	10,253,321	12	44	1	1	6
Civil & Environmental Eng.	4,228,816	2	31	1	4	5
Computer Science & Engineering	2,864,129	2	23	3	2	1
Electrical Engineering	4,106,112	1	19	2		
Eng. & Computing Dean's Office	60,000				1	
IIT - Engineering	879,382	2	4	1	2	
Mechanical Engineering	12,550,839	18	85	3	1	5
Total Count	*282*	*37*	*206*	*11*	*11*	*17*
Total Amt. First Year	*34,942,599*	*2,875,352*	*28,823,586*	*1,533,824*	*492,497*	*1,217,340*

Extramural Funding by Source, Department, Faculty & Rank - FY2018
Appendix 2

PI Home Department	Total Department	PI Name	Primary Job Desc/Rank	Tenure Status	Total Funding	Commercial	Federal	Other	Private/Non-Profit	State
Chemical Engineering		Alexeev, Oleg	RESEARCH PROFESSOR		187,596	187,596				
Chemical Engineering		Heyden, Andreas	PROFESSOR	TENURED	141,448		141,448			
Chemical Engineering		Jabbarzadeh, Ehsan	ASSOC. PROFESSOR	TENURED	150,000		150,000			
Chemical Engineering		Lauterbach, Jochen	PROFESSOR	TENURED	368,851		368,851			
Chemical Engineering		Matthews, Michael	PROFESSOR	TENURED	635,000		625,000			10,000
Chemical Engineering		Meekins, Benjamin	RESEARCH ASST PROF		10,000		10,000			
Chemical Engineering		Monnier, John	PROFESSOR	TENURED	250,000	108,000	142,000			
Chemical Engineering		Moss, Melissa	PROFESSOR	TENURED	148,934		148,934			
Chemical Engineering		Mustain, William	PROFESSOR	TENURED	400,000	240,000	160,000			
Chemical Engineering		Padak, Bihter	ASST PROFESSOR	TENURE-TRACK	60,000	60,000				
Chemical Engineering		Regalbuto, John	PROFESSOR	TENURED	1,213,948		1,213,948			
Chemical Engineering		Ritter, James	PROFESSOR	TENURED	652,268	200,000	352,268			100,000
Chemical Engineering		Shimpalee, Sirivatch	RESEARCH PROFESSOR		202,000		40,000	162,000		
Chemical Engineering		Weidner, John	PROFESSOR	TENURED	337,211	212,211	90,000			35,000
Chemical Engineering		White, Ralph	PROFESSOR	TENURED	613,783	613,783				
Chemical Engineering		Yu, Miao	ASSOC. PROFESSOR		-10,036		-10,036			
Chemical Engineering		Zhou, Xiao-Dong	PROFESSOR	TENURED	10,000	10,000				
Total Chemical	*5,371,003*									
Civil & Environmental Eng.		Berge, Nicole	ASSOC. PROFESSOR	TENURED	24,630		0			24,630
Civil & Environmental Eng.		Caicedo, Juan	PROFESSOR	TENURED	171,555		171,555			
Civil & Environmental Eng.		Chaudhry, M.	PROFESSOR	TENURED	168,428					168,428
Civil & Environmental Eng.		Huynh, Nathan	ASSOC. PROFESSOR	TENURED	915		165			750
Civil & Environmental Eng.		Matta, Fabio	ASSOC. PROFESSOR	TENURED	16,000		16,000			
Civil & Environmental Eng.		Meadows, Michael	ASSOC. PROFESSOR	TENURED	74,900		74,900			
Civil & Environmental Eng.		Mullen, Robert	PROFESSOR	TENURED	45,000		45,000			
Civil & Environmental Eng.		Rizos, Dimitris	ASSOC. PROFESSOR	TENURED	47,500		47,500			
Civil & Environmental Eng.		SAMADI, SEYEDEHZAHRA			6,040		6,040			
Civil & Environmental Eng.		Sasanakul, Inthuorn	ASST PROFESSOR	TENURE-TRACK	16,395	12,000	4,395			
Civil & Environmental Eng.		Viparelli, Enrica	ASSOC. PROFESSOR	TENURED	510,331		510,331			
Civil & Environmental Eng.		Yoon, Yeomin	ASSOC. PROFESSOR	TENURED	86,544		82,196	4,348		
Civil & Environmental Eng.		Ziehl, Paul	PROFESSOR	TENURED	558,942	110,000	448,942			
Total Civil	*1,727,180*									
Computer Science & Engineering		Bakos, Jason	PROFESSOR	TENURED	101,248		101,248			
Computer Science & Engineering		Hu, Jianjun	ASSOC. PROFESSOR	TENURED	38,373		38,373			
Computer Science & Engineering		Tang, Jijun	PROFESSOR	TENURED	10,000					10,000
Computer Science & Engineering		Terejanu, Gabriel	ASST PROFESSOR	TENURE-TRACK	12,000		12,000			
Computer Science & Engineering		Tong, Yan	ASSOC. PROFESSOR	TENURED	10,000		10,000			
Computer Science & Engineering		Valafar, Homayoun	PROFESSOR	TENURED	150,895		150,895			
Computer Science & Engineering		Valtorta, Marco	PROFESSOR	TENURED	110,008		110,008			
Computer Science & Engineering		Wang, Song	PROFESSOR	TENURED	23,375		23,375			
Computer Science & Engineering		Yan, Yonghong	ASST PROFESSOR	TENURE-TRACK	375,853		375,853			

Department	Total	Name	Title	Tenure						
Total CSE	**831,752**									
Electrical Engineering		Ali, Mohammod	PROFESSOR	TENURED	738,744		738,744			
Electrical Engineering		BAE, Seongtae	ASST PROFESSOR	TENURE-TRACK	900,000			900,000		
Electrical Engineering		Benigni, Andrea	ASST PROFESSOR	TENURE-TRACK	885,559	685,559	200,000			
Electrical Engineering		Chandrashekhar, MVS	ASSOC. PROFESSOR	TENURED	369,999		369,999			
Electrical Engineering		Dougal, Roger	PROFESSOR	TENURED	1,224,312	63,616	1,160,696			
Electrical Engineering		Ginn, Herbert	ASSOC. PROFESSOR	TENURED	322,452	-9,766	332,218			
Electrical Engineering		Khan, Asif	PROFESSOR	TENURED	294,604		294,604			
Electrical Engineering		Mandal, Krishna	ASSOC. PROFESSOR	TENURED	740,000		740,000			
Electrical Engineering		Matolak, David	PROFESSOR	TENURED	1,398,779		1,398,779			
Electrical Engineering		Santi, Enrico	ASSOC. PROFESSOR	TENURED	-10	-10				
Electrical Engineering		Wang, Guoan	ASSOC. PROFESSOR	TENURED	83,859		83,859			
Electrical Engineering		Wang, Xiaofeng	ASST PROFESSOR	TENURE-TRACK	300,000		300,000			
Electrical Engineering		Zhang, Bin	ASST PROFESSOR	TENURE-TRACK	367,449		367,449			
Total Electrical	**7,625,747**									
IIT - Engineering		Crichigno, Jorge	ASSOC. PROFESSOR	TENURE-TRACK	420,377		420,377			
IIT - Engineering		Hikmet, Neset	PROFESSOR	TENURED	153,240				153,240	
IIT - Engineering		Schooley, Benjamin	ASST PROFESSOR	TENURE-TRACK	19,972	-10,028			30,000	
Total IIT	**593,589**									
Mechanical Engineering		BADEA, MADALINA	RESEARCH ASST PROF		267,035		267,035			
Mechanical Engineering		Bayoumi, Abdel	PROFESSOR	TENURED	243,442		243,442			
Mechanical Engineering		Besmann, Theodore	PROFESSOR	TENURED	372,600		372,600			
Mechanical Engineering		Chao, Yuh	DISTINGUISHED PROFESSOR	TENURED	30,000		30,000			
Mechanical Engineering		Chen, Fanglin	PROFESSOR	TENURED	302,000		302,000			
Mechanical Engineering		Dryer, Frederick	RESEARCH PROFESSOR		330,585	60,000	270,585			
Mechanical Engineering		Farouk, Tanvir	ASST PROFESSOR	TENURE-TRACK	497,988	33,064	464,924			
Mechanical Engineering		Giurgiutiu, Victor	PROFESSOR	TENURED	738,020	442,264	295,756			
Mechanical Engineering		Gurdal, Zafer	PROFESSOR	TENURED	836,113	256,286	579,827			
Mechanical Engineering		Harik, Ramy	ASST PROFESSOR	TENURE-TRACK	418,070	182,842	235,228			
Mechanical Engineering		Huang, Kevin	PROFESSOR	TENURED	412,405	195,000	217,405			
Mechanical Engineering		Huang, Xinyu	ASSOC. PROFESSOR	TENURED	426,861	5,860	421,001			
Mechanical Engineering		Khan, Jamil	PROFESSOR	TENURED	37,866		37,866			
Mechanical Engineering		Kidane, Addis	ASSOC. PROFESSOR	TENURED	75,000		75,000			
Mechanical Engineering		Knight, Travis	PROFESSOR	TENURED	445,711		445,711			
Mechanical Engineering		Li, Chen	PROFESSOR	TENURED	243,720		153,720			90,000
Mechanical Engineering		Reynolds, Anthony	PROFESSOR	TENURED	335,422	215,000	120,422			
Mechanical Engineering		Scopatz, Anthony	ASST PROFESSOR	TENURE-TRACK	140,324		140,324			
Mechanical Engineering		Sockalingam, Subramani	ASST PROFESSOR	TENURE-TRACK	24,890		24,890			
Mechanical Engineering		Sutton, Michael	DISTINGUISHED PROFESSOR	TENURED	48,107	48,107				
Mechanical Engineering		van Tooren, Michael	PROFESSOR	TENURED	2,458,188	1,556,341	621,874		100,000	179,973
Mechanical Engineering		Wang, Yi	ASSOC. PROFESSOR	TENURE-TRACK	427,603		427,603			
Mechanical Engineering		Won, Sang Hee	ASSOC. PROFESSOR	TENURE-TRACK	86,495	80,000		6,495		
Mechanical Engineering		Xue, Xingjian	ASSOC. PROFESSOR	TENURED	1,495,169		1,495,169			
Mechanical Engineering		Yu, Lingyu	ASSOC. PROFESSOR	TENURED	212,500		212,500			
Total Mechanical	**10,906,114**									
Total Funding	**27,055,385**				**27,055,385**	**5,557,725**	**19,522,796**	**1,072,843**	**283,240**	**618,781**

COLLEGE OF ENGINEERING & COMPUTING

	Invention Disclosures	Provisional Patent Applications	Non-Provisional Patent Applications	Issued Patents
TOTALS:	**25**	**36**	**40**	**14**
Department Breakdown				
Biomedical Engineering	**1** (ID no. *1320 (shared w/ Pharmacy)*)	**1** (ID no. *1320 (shared w/ Pharmacy)*)	**2** (ID no. 1201 (2))	**0**
Chemical Engineering	**7** (ID no. 1295, 1297, 1304, 1305, 1309, *1326 (shared w/ Electrical Eng.)*, 1339)	**18** (ID no. 1217, 1273, 1261, 1267, *1212 (shared w/ Electrical Eng.)*, 1295, 1304 (2), 1278, 1279, 1280, 1282 (2), 1295, 1271, 1339, 1365, 1305)	**15** (ID no. 1242, 1257, 1258, 1250, 1216, 1246, 1248, 1259, 1255, 1240, 1278, 1279, 1280, 1282, 1115)	**6** (ID no. 960, 1040, 1019, 1004, 1115, 1013)
Civil & Environmental	**1** (ID no. 1303)	**2** (ID no. 1153, 1303)	**3** (ID no. 1184, 1191, 1172)	**0**
Computer Science & Engineering	**1** (ID no. 1314)	**0**	**1** (ID no. *1208 (Shared w/ Public Health & w/ School of Medicine)*)	**1** (ID no. *968* (shared w/ Mechanical Eng.))
Electrical Engineering	**5** (ID no. 1302, 1311, 1316, *1326 (shared w/ Chemical Eng.)*, 1335)	**4** (ID no. *1212 (shared w/ Chemical Eng.)*, 1302, 1326, 1316)	**8** (ID no. 1260, 948, 1118, 1119, 1311, 1249, 1252, 1285)	**5** (ID no. 616, 694, 948, 1129, 1125)
Mechanical Engineering	**11** (ID no. 1262, 1286, 1292, 1310, 1312, 1324, 1325, 1334, 1336, 1342, 1343)	**12** (ID no. 1286, 1268, 1198, 1262, 1292, 1233, 1277, 1275, 1227, 1272, 1324, 1325)	**11** (ID no. 1162, 1207, 1193, 1206, 1199, 1157, 1233 (2) 1274, 1190, 1268)	**3** (ID no. 820, *968 (shared w/ Computer Eng.)*, 1113)

Note:

- These numbers include US, PCT, and foreign applications/patents
- Disclosure numbers include trademark and copyright disclosures
- USC's Fiscal Year 2018 = July 1, 2017 – June 30, 2018

Appendix 4. Faculty Information

CEC PEER GROUP					
ECHE	**ECIV**	**CSCE**	**ELCT**	**EMCH**	**BMEN**
Florida	Clemson	Georgia	NC State	Kentucky	Florida International
U Mass	Oklahoma State	Kentucky	Clemson	Connecticut	U Texas Arlington
Ohio State	Kentucky	Connecticut	UNC-Charlotte	Central Florida	Wayne State U
Oklahoma	South Florida	Louisiana State U	Arkansas	NC State	U Arkansas
Washington	New Hampshire	New Mexico	Nebraska	Tennessee	
		U Nebraska-Lincoln			
CEC PEER-ASPIRANT GROUP					
Texas	Wisconsin-Madison	Minnesota			Clemson
Berkeley	Penn State	Colorado-Boulder			Arizona State
Delaware	UCLA	Virginia			U Connecticut
Illinois U-C	U Minnesota-Twin Cities	Florida			U Alabama-Birmingham
Wisconsin					

Appendix 5. Academic Analytics Report

BluePrint Data, Peers and Peer Aspirants, By Department

Academic Analytics Data for Civil & Environmental Engineering: Peers and Peer Aspirants

institutionname	no. fac	journal pubs per fac member	total journal pubs	citations per fac member	citations per pub	total citations	conf proc per fac member	total conf proc	dollars per grant	grant dollars per fac member	total grant dollars	awards per fac member	total awards
Clemson	21	12.67	266	119.43	7.53	2508	3.19	67	$ 133,867	$ 152,991	$ 3,212,812	0.48	10
Oklahoma State	21	6.14	129	37.1	5.06	779	2.43	51	$ 64,217	$ 24,464	$ 513,738	0.81	17
Pennsylvania State	38	15.39	585	258.45	13.79	9821	1.89	72	$ 123,670	$ 165,978	$ 6,307,161	0.97	37
UCLA	24	20.75	498	351.54	13.95	8437	1.58	38	$ 111,262	$ 245,703	$ 5,896,867	1.88	45
Kentucky	20	5.6	112	31.9	4.43	638	1.9	38	$ 86,670	$ 8,667	$ 173,339	0.5	10
Minnesota, Twin Cities	33	12.03	397	169.91	11.15	5607	1.24	41	$ 93,113	$ 70,540	$ 2,327,832	1.03	34
New Hampshire	20	4.75	95	53.25	9.18	1065	1.2	24	$ 126,193	$ 119,883	$ 2,397,667	0.25	5
South Carolina	19	10.05	191	123.74	10.18	2351	3.21	61	$ 83,039	$ 83,039	$ 1,577,742	0.42	8
South Florida	20	11	220	94.65	7.12	1893	0.85	17	$ 162,190	$ 218,957	$ 4,379,138	0.8	16
Wisconsin - Madison	29	17.17	498	184.72	8.99	5357	2.17	63	$ 101,551	$ 108,555	$ 3,148,083	1.48	43

Academd Analytics Data for Electrical Engineering: Peers and Peer Aspirants

institutionname	no. fac	journal pubs per fac member	total journal pubs	citations per fac member	citations per pub	total citations	conf proc per fac member	total conf proc	dollars per grant	grant dollars per fac member	total grant dollars	awards per fac member	total awards
Auburn	29	11.48	333	153.52	11.69	4452	7.62	221	86436.47	44708.52	1296547	0.52	15
Iowa State	63	10.9	687	146.84	10.81	9251	10.56	665	126998.9	296330.7	18668831	1.14	72
North Carolina State	65	8.95	582	202.85	18.24	13185	13.6	884	132303.1	242216.4	15744066	1.37	89
Kentucky	25	8.08	202	86	8.43	2150	6.8	170	159176.3	146442.2	3661055	0.48	12
Minnesota, Twin Cities	45	14	630	322.78	17.98	14525	13.07	588	157121.5	359633.7	16183515	1.44	65
Missouri	40	9.6	384	126.3	10.66	5052	7.88	315	140230.8	224369.3	8974770	0.43	17
Nebraska - Lincoln	38	13.21	502	259.45	16	9859	8.5	323	122712.7	96878.42	3681380	0.47	18
North Carolina Charlotte	26	4.96	129	119.85	19.97	3116	11.88	309	80352.95	61809.96	1607059	0.12	3
South Carolina	15	12.67	190	165.6	10.75	2484	12.8	192	189787.5	303659.9	4554899	0.27	4
Virginia	32	12.16	389	207.16	13.81	6629	14.63	468	127047.6	285857.2	9147430	1.56	50
Wisconsin - Madison	44	12.77	562	291.39	18.19	12821	11	484	197811.2	346169.7	15231465	1.43	63

Academic Analytics Data for Biomedical Engineering: Peers and Peer Aspirants

institutionname	no. fac	journal pubs per fac member	total journal pubs	citations per fac member	citations per publication	total citations	conf proc per fac member	total conf proc	grant dollars per fac member	total grant dollars	awards per fac member	total awards
Arizona State	42	10.98	461	198.52	14.48	8338	2.24	94	276860.4	11628135	0.33	14
Clemson	32	7.66	245	77.28	7.85	2473	1	32	182350.8	5835227	0.5	16
Florida International	9	13.44	121	157.78	8.4	1420	2.67	24	609050.9	5481458	0.44	4
Alabama at Birmingh	49	14.51	711	179.06	10.4	8774	0.31	15	359200.4	17600820	0.29	14
Arkansas	9	14.89	134	152.89	8.71	1376	3.22	29	196878.3	1771905	0.33	3
Connecticut	21	17.9	376	342.95	15.69	7202	6	126	366050.3	7687056	0.95	20
South Carolina	18	10.78	194	137	9.48	2466	1.39	25	159103.6	2863864	1.06	19
Texas Arlington	13	16.77	218	189.31	9.32	2461	2.85	37	357369.3	4645801	0.85	11
Wayne State	16	9.88	158	119.56	8.82	1913	2.69	43	97464	1559424	0.69	11

Academic Analytics Data for Chemical Engineering: Peers and Peer Aspirants

institutionname	no. fac	journal pubs per fac member	total journal pubs	citations per fac member	citations per publication	total citations	grant dollars per fac member	total grant dollars	awards per fac member	total awards
Ohio State , The	23	19.52	449	399.91	16.11	9198	$ 332,845	$ 7,655,435	2.26	52
California, Berkeley	23	40.91	941	1434.09	29.19	32984	$ 705,192	$ 16,219,407	4.83	111
Delaware	26	25.19	655	675.42	21.49	17561	$ 774,048	$ 20,125,241	3.38	88
Florida	21	16.81	353	220.81	10.1	4637	$ 245,307	$ 5,151,452	1.52	32
Illinois at Urbana-Champaign	21	28.52	599	805.14	22.57	16908	$ 514,596	$ 10,806,518	2.57	54
Massachusetts Amherst	21	12.71	267	239	15.4	5019	$ 184,769	$ 3,880,157	1.48	31
Oklahoma	13	16	208	279.08	14.51	3628	$ 233,086	$ 3,030,113	0.92	12
South Carolina	18	15.22	274	246	13.14	4428	$ 254,030	$ 4,572,533	1.56	28
Texas at Austin, The	27	34.52	932	951.67	21.74	25695	$ 556,854	$ 15,035,070	5.7	154
Washington	21	16.05	337	410.05	20.45	8611	$ 694,200	$ 14,578,191	1.95	41
Wisconsin - Madison	20	27.3	546	732.65	21.68	14653	$ 634,112	$ 12,682,237	3.65	73

Academic Analytics Data for Mechanical Engineering: Peers and Aspirants

institutionname	no. fac	journal pubs per fac member	total journal pubs	citations per fac member	citations per pub	total citations	conf proc per fac member	total conf proc	grant dollars per fac member	total grant dollars	awards per fac member	total awards
North Carolina State	42	14.48	608	199.4	16.52	8375	7.64	321	$ 157,054	$ 6,596,254	0.76	32
Ohio State , The	59	13.54	799	233.66	13.76	13786	8.85	522	$ 165,409	$ 9,759,113	1.32	78
Central Florida	32	11.69	374	145.47	13.47	4655	6.19	198	$ 142,342	$ 4,554,931	0.5	16
Connecticut	24	16.83	404	273.29	11.42	6559	5.17	124	$ 196,375	$ 4,713,007	1	24
Florida	49	15	735	206.63	11.26	10125	5.59	274	$ 236,308	$ 11,579,074	1.43	70
Illinois at Urbana-Champaign	64	18.75	1200	380.44	11.09	24348	6.83	437	$ 265,508	$ 16,992,527	1.97	126
Kentucky	33	9.85	325	126	10.45	4158	2.55	84	$ 114,662	$ 3,783,838	0.58	19
Oklahoma	25	6.44	161	53.52	10.01	1338	5.36	134	$ 93,110	$ 2,327,738	0.64	16
South Carolina	31	15.9	493	194.1	10	6017	5.58	173	$ 106,655	$ 3,306,305	0.84	26
Tennessee, The	54	8.46	457	120.52	9.82	6508	4.2	227	$ 76,018	$ 4,104,989	0.85	46
Wisconsin - Madison	30	17.37	521	201.37	6.4	6041	5.57	167	$ 217,701	$ 6,531,025	0.9	27

Academic Analytics Data for Computer Science: Peers and Aspirants

institutionname	no. fac.	Total grant dollars	grant dollars per fac member	total journal pubs	citations per pub	total citations	citations per fac member	conference proceedings per fac	total awards	awards per fac member	total conf proc	conf proc per fac member
Clemson University	31	$ 6,825,685	$ 220,183	151	4.87	2279	73.52	12.66	22	0.71	225	7.26
Louisiana State University	21	$ 3,348,271	$ 159,441	85	4.05	1084	51.62	10.84	13	0.62	130	6.19
Connecticut	25	$ 6,435,324	$ 257,413	180	7.2	3957	158.28	17.74	15	0.6	217	8.68
Georgia	19	$ 2,998,064	$ 157,793	121	6.37	1982	104.32	13.3	5	0.26	174	9.16
Kentucky	23	$ 3,911,669	$ 170,073	113	4.91	4038	175.57	28.44	18	0.78	155	6.74
Nebraska - Lincoln	30	$ 7,626,805	$ 254,227	151	5.03	3025	100.83	16.18	34	1.13	283	9.43
New Mexico, The	17	$ 4,291,771	$ 252,457	77	4.53	1553	91.35	14.79	22	1.29	138	8.12
Virginia	27	$ 7,657,137	$ 283,598	176	6.52	6298	233.26	29.43	50	1.85	379	14.04
Colorado Boulder	47	$ 16,024,588	$ 340,949	245	5.21	5046	107.36	16.28	39	0.83	414	8.81
Florida	41	$ 12,531,334	$ 305,642	274	6.68	4105	100.12	12.25	74	1.8	406	9.9
Minnesota, Twin Cities	39	$ 18,769,696	$ 481,274	390	10	7807	200.18	15.97	66	1.69	471	12.08
South Carolina	20	$ 2,060,018	$ 103,001	104	5.2	1125	56.25	8.33	19	0.95	121	6.05

Appendix 6. Alumni Engagement & Fundraising

Unit Performance

Data update time: 2/27/2019 1:04:59 PM - Printed by Jennifer Shepard

FY - YTD Production
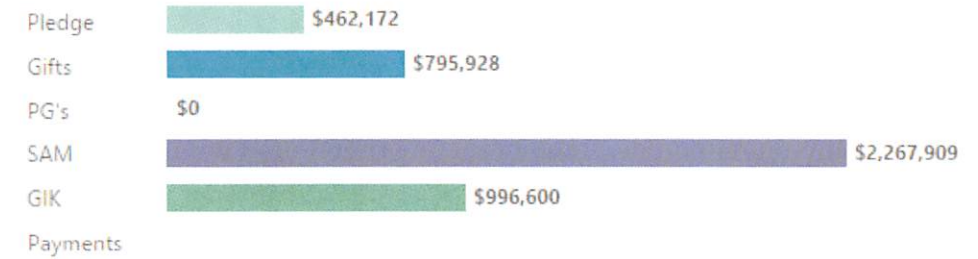
$4,522,610

FY 2019

Total $ by Purpose

$3.6M	$694.9K	$180.3K	$5.K
Program Enhancements	Student Support	Unrestricted	Faculty Support

Gift Type

$2M

$1M

$0M

FY 2019

Total $ by Gift Type

Pledge	$462,172
Gifts	$795,928
PG's	$0
SAM	$2,267,909
GIK	$996,600
Payments	

Donor # by Constituency

300

200

100

0

07/01/2018

Total $ & Donor # by Constituency

$3.1M	$522.3K	$517.2K	$245.7K	$152.K	$10.8K	$5.3K	$.M
Corporation	Individual	Alumni	Foundation	Organizati..	Parent	F&S	Student

Designation

$3.9M

Spendable

Endowment

$582.K

07/01/2018

Total $ by Designation

Spendable	$3,940,588
Endowment	$582,021
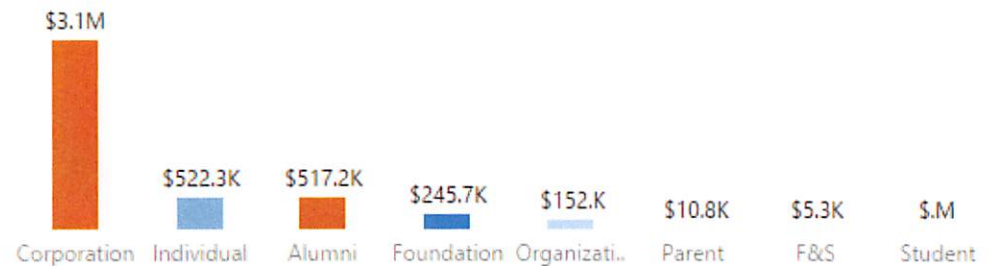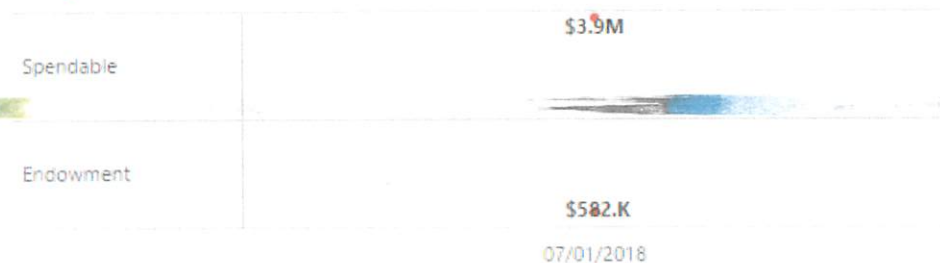
USC College of Engineering and Computing GCR Pyramid

$1M - $10M
30

$500K - $1M
53

$250K - $500K
16

$100K - $250K
414

$50K - $100K
1,397

$25K - $50K
2,202

Below $25K
7,558

No Rating/Unable to Rate
5,611
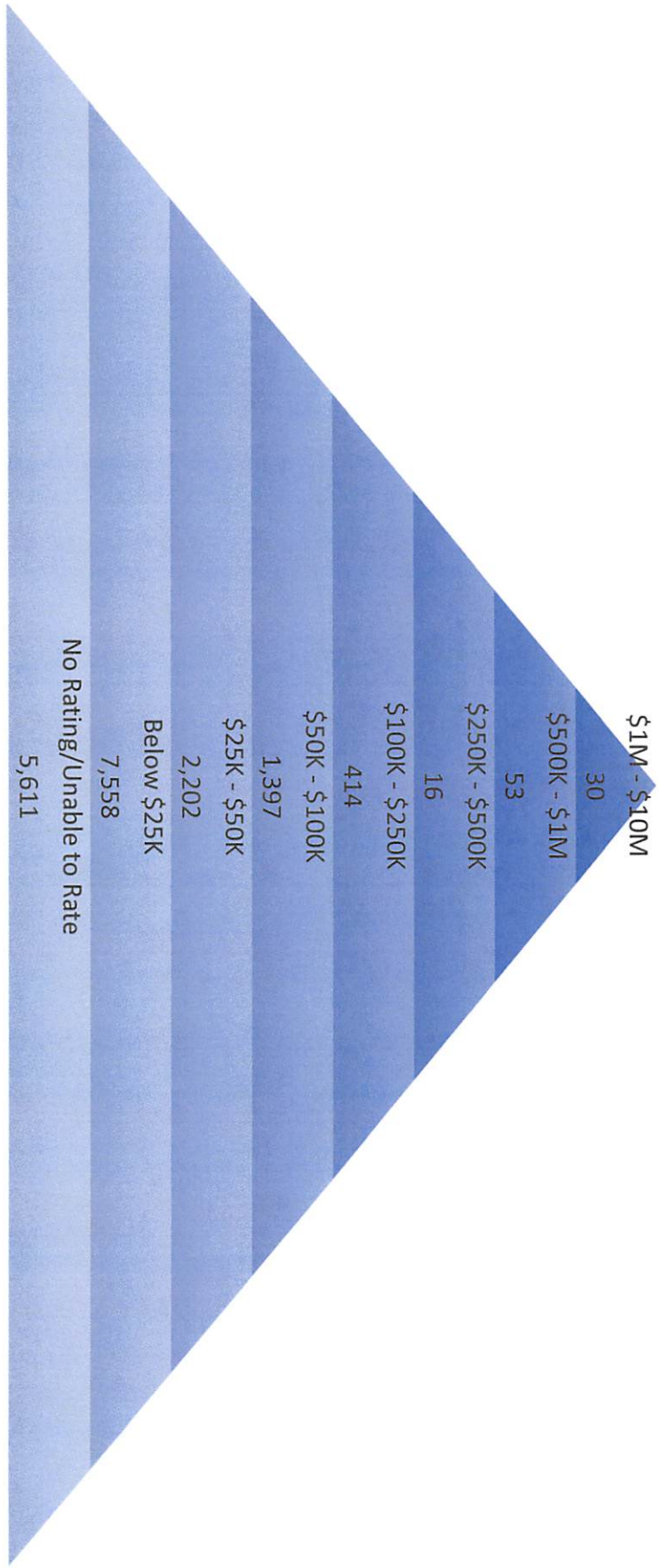
Appendix 9. Campus Climate & Inclusion

Faculty % of sub-population	Gender	Hispanic or Latino	American Indian or Alaskan Native	Asian	African American	Hawaiian or Other Pacific Islander	White	Two or more
Total Faculty								
Men	90	2	0	35	1	0	51	1
Women	10	0	0	5	0	0	5	0
Full Professors								
Men	96	4	0	21	0	0	69	2
Women	4	0	0	0	0	0	4	0
Associate Professors								
Men	85	2	0	43	2	0	37	0
Women	15	0	0	7	0	0	9	0
Assistant Professors								
Men	88	0	0	46	0	0	42	0
Women	12	0	0	12	0	0	0	0

Table 1. CEC Faculty population percentage (Fall 2018)

Table 2 shows the current student gender and ethnic diversity of the college. Graduate students' diversity is dominated with white (31.79%) and non-resident alien (51.92%). African American (6.55%), two-or-more (5.11%), Hispanic/Latino (0.64%), and Asian (2.4%) ethnicity. Only 22% of the graduate student population is women. Undergraduate students' ethnic diversity has the following composition: white (70.52%) and non-resident alien (4.77%). African American (9.29%), two-or-more (8.25%), Hispanic/Latino (1.07%), and Asian (4.77%) ethnicity. Less than 20% of the college's undergraduates are underrepresented minorities. Twenty-one percent of the undergraduate population is female.

Students % of sub-population	Hispanic or Latino	American Indian or Alaskan Native	Asian	African American	Hawaiian or Other Pacific Islander	White	Two or more	N/R Alien	Unknown
Graduate Students Men: 78 % Women: 22%									
	0.64	0.32	2.40	6.55	0	31.79	5.11	51.92	1.44
Undergraduate Students Men: 79 % Women: 21%									
	1.07	0.22	4.77	9.29	0.13	70.52	8.25	4.77	0.98

Table 2. CEC student enrollment (Fall 2018)