FAMU-FSU College of Engineering Diversity and Inclusion Plan

April 22nd 2019

Mission of the FAMU-FSU College of Engineering:

The mission of the College of Engineering is to provide an innovative academic program of excellence at both the undergraduate and graduate levels, judged by the highest standards in the field and recognized by national peers; to attract and graduate a greater number of minorities and women in professional engineering, engineering teaching and research; and to attain national and international recognition of the College through the educational and research achievements and the professional service of its faculty and students.

We are a unique college of engineering as a partnership between two universities with overlapping but distinct missions. Our students enroll and graduate from either of our partner universities but their engineering education is delivered by joint faculty in shared courses with uniform standards. The Florida Agricultural and Mechanical University is one of the nation's leading public Historically Black Colleges and Universities (HBCU), being amongst the very top few producers of bachelor's degrees to African Americans and one of the nation's leaders in improving the social mobility of its graduates. Florida State University is one of Florida's most highly ranked research-based universities, and recently ranked 18th of all public universities in the nation by *US News and World Report*. As a consequence of the partnership our joint college is amongst the top five producers of Engineering PhD's to African Americans *and* more than any other top-ranked engineering school our undergraduate population reflects the racial and ethnic diversity of the US population.

We are therefore in a unique position to contribute to the nation's engineering diversity and train all our students to flourish in an inclusive environment, but we are not yet all that we can be. This plan identifies our commitment to improve in diversity and inclusion, and the goals and tools we will use to do so over the next five years. Within five years we also plan to export the successes of our partnership to other institutions that may be interested in more integrated partnering, and so widen the positive impact from our grand experiment.

While we have a student population diversity that may be the envy of other institutions, we have not yet reached the fully inclusive environment that we desire for our students. For example, students from lower socio- economic backgrounds are not as academically successful as others. This can be due to lack of preparation, financial and/or parental support, or institutional inadequacies all of which can mask talent and potential. Some students feel barriers to inclusion depending on their race, ethnic identity, gender and school of origin. Our student body's gender diversity currently exceeds the national average but is not yet at 50%. And our faculty does not reflect the diversity of our students, especially in gender. We wish to remove any barriers that our diverse faculty may feel regarding promotion and tenure. We wish to learn how inclusion influences positively the learning and professional development outcomes of our diverse students and of our faculty and staff. The value of diversity in learning has been recognized[1]. Based on better understanding of our situation we wish to take steps to enhance the outcomes from our educational model within our unique cohort, and pass any lessons on to others.

[1] "The Difference", Scott E. Page, Princeton University Press (2007)

Organization

The primary responsibility for improving diversity and inclusion at the joint college lies in the hands of the dean (and associate deans), department chairs, search committee members, faculty and staff. We believe firmly that accountability must lie in the normal management "chain" of the college – dean/chairs/faculty. The current dean has experience changing safety culture in a large organization that he directed, and the widespread recognition that only management responsibility and accountability leads to real changes. Safety officers provide critical assessment, support and advice, but cannot offset a lack of management responsibility[2]. That is because accountability and responsibility cannot be separated. However, we have set up a support structure to provide resources and implement the policies of the college in diversity and inclusion. The Associate Dean for Faculty Affairs is assigned with management of diversity and inclusion programming that relates to faculty and staff. This person has oversight for faculty recruiting, mentoring, promotion and tenure processes in the college. He/she also works with the Assistant Dean for Administration on staff diversity and inclusion. The Associate Dean for Student Services and Undergraduate Affairs oversees the Director for Student Success who develops and manages retention programming aimed at student success for under-represented groups, and the College Recruitment Coordinator who works to recruit and expand our diverse population. At the graduate level the Graduate Program Director, in the Office of the Associate Dean for Research and Graduate Education, oversees recruitment and retention programming for graduate students and is supported by a team of people including a Title III coordinator who manages our component of FAMU's support of graduate education for under-represented minorities. Both universities provide us with extensive resources for faculty development, mentoring, and student success.

A diversity committee, including faculty, staff and student representatives, is being established to guide development of policies, review our progress and assess the climate at the joint college. The initial goals and metrics that we will be following are identified in this plan, together with our current programming.

Undergraduate Diversity and Inclusion

Our current diversity at the undergraduate level includes, as of 2019, 20% African American and 19% Hispanic students, reflecting the largest minority groups in the US population in a way not found anywhere else in doctoral-granting engineering education. Our gender diversity (fraction of female students) is at 28% in 2019 and has been steadily climbing. We hope to reach 50% in ten years. We also exhibit extensive economic diversity due to the different populations and entrance requirements of our two partner universities. Major challenges in achieving diversity and inclusion goals for our undergraduates are:

a) Student success is not uniform over our racial/ethnic and economic groups. We must address this aggressively in the coming years. Using models from other universities, and tools from professional societies such as the National Society for Black Engineers and others, we have developed programming that begins to address these issues, and so have seen improvements in the last two years. We must continue to develop programs and learn the most promising practices, for example expanding our summer bridge and living learning community programs, and extending programming into the second year. We also recognize the importance of financial support for economically-challenged students, tutoring resources and intrusive advising.

[2] See for example the Department of Energy's Integrated Safety Management system: https://www.energy.gov/ehss/integrated-safety-management-ism

b) One tool to improve our student success is a strategy being employed by FAMU more generally to increase their graduation and retention metrics. We are seeking to encourage FTIC applicants who do not have adequate preparation to enroll in a community college and transfer into the joint college when they have met the math and science criteria. In recent years we have not had a large number of transfer students (<5% of our enrollment) but we are developing articulation agreements with several community colleges and plan to increase our transfer student enrollment at FAMU to 20% within 5 years. In parallel we will aim to be more selective with incoming FTIC students and support all those we recruit through retention programming beginning with our summer bridge program.

c) We are not satisfied at our gender balance of 28% female, even though it is substantially above the national average. We have seen no evidence for retention issues that are gender-dependent at the bachelor's level, which is encouraging, so we are working hard to recruit more aggressively for female students at both our partner universities. One factor that we believe will be essential to sustain this growth in female population is hiring more female faculty (see later).

d) Because of our unique partnership, it is important for us to maintain the balance of students institutionally. Even when of the same race, there is a difference in the preparation and economic security of our students who enter through the two universities. It is important to preserve the opportunity – larger numbers of students may enter FAMU with lower incoming scores than could do so at FSU or at other highly-ranked universities. FAMU was recently listed as the #3 of all universities in the US to improve the social mobility of its graduates. In that way our partner institutions are complementary, and we are a unique place where these two important missions coexist in one integrated college. We believe that we are a model for how to implement change while preserving the unique capabilities of the two institutions. In itself this aim will be our "gold" contribution to the national diversity and inclusion picture in engineering education. It is therefore crucial that we sustain a true partnership and ensure a balance of FAMU and FSU students. Based on the overall size of the two institutions we feel that a balance of 25% FAMU to 75% FSU students should be our goal. But it is also important to note that equalizing student success on the FAMU side would alone lead to a major increase of the graduating student numbers to approach this goal, even without further recruiting. Increasing the percentage of FAMU graduates is a high priority, combining student success and enrollment improvements.

e) Last, but by no means least, we are committed to providing a truly inclusive education for our uniquely diverse population of students. The ability to have majority and minority students work together in teams, for example on senior design, offers students a unique opportunity to bridge cultural boundaries and tap into the creativity of diverse teams. Employers will value these skills, and we believe anecdotally from our alumni that we are providing these today to all our students. However, we need to prove this by collaborating with academics in education, sociology, business and other disciplines to assess the current state of our model and practices. We must work to remove any barriers that exist today, and identify promising practices that could be more effective. We are in fact an experimental platform to uniquely understand how an inclusive education in a US context could be delivered, and we plan to do so more intentionally. In the coming three years we will invite experts to come in and evaluate our environment, develop and implement the best practices to maximize the positive outcomes. We will seek collaborative funding from government and foundations to assess and improve our

model. One of the first things we will do is identify some metrics that we can use for assessment and tracking of this aspect.

f) While we have an enviable undergraduate student population diversity as a result of our partnership, we are lacking in certain ethnic groups, in particular Asians and Pacific Islanders and Native Americans. We aim to recruit at the Seminole tribe in Florida, and attract a larger share of Florida's relatively small Asian population to attend, and seek out-of-state students from these populations.

Graduate Diversity and Inclusion

We are in a unique position as the most highly-research intensive college in the nation that is associated with an HBCU, to graduate African-American engineering PhD's, and thus fill the very limited pipeline for African-American faculty members in the US. We have been intentionally recruiting and increasing our numbers, and in 2018 we were #4 in the nation for producing African-American engineering PhD's. One of our strengths is that our faculty comprises a relatively high percentage of African-Americans and these faculty share the same expectations for research productivity that is common to graduate engineering schools, and not typical in HBCU's. As a result we have a unique environment with role models to support African American graduate student success. We are committed to increasing the fraction of African Americans on our faculty to reflect our population of undergraduates. Through increased staffing and partnerships with other Historically-Black undergraduate universities, such as Bethune Cookman, we have ramped up our recruiting efforts for under-represented minority PhD students,.

Faculty Diversity and Inclusion

At the faculty level we have some things to be proud of especially our relatively high percentage of African-American faculty. We are not satisfied with this number however, and are keen to increase it because of our unique relationship with FAMU, one of the nation's leading producers of African American BS degrees. However, we are seriously underrepresented with regard to Hispanic faculty (4), and our faculty gender demographic (15%) is well below that of our students. Addressing the latter two issues is a very high priority for us. We began search committee awareness and training last year using the STRIDE model from NSF's ADVANCE program, and have tapped into resources from FSU and invited Applied Theatre players to provide training to search committees. Best practices that we are implementing include the use of rubrics, the requirement for a diversity plan from all searches, and a broad advertising/recruiting plan. The Dean was a former Advance Grant P.I. at a previous institution, and brings some of the experience from this program to our recruiting. We will take advantage of the NSF INCLUDES EDGE program and other resources to add to our tools, but have already seen an increase in the fraction of females hired in the last two years (exceeding 30%). Florida State University has developed a "future faculty" postdoc program that we will take advantage of. We have also established a mentoring network for our new faculty, and will provide them with monthly opportunities to hear from other faculty and mentoring experts. We will also develop a comparable mentoring program for our mid-career faculty.

Staff Diversity and Inclusion

Our staff are an important component of the college, and it is important that we pay attention to diversity and inclusion within staff and in the relationships between staff and faculty/students. We have begun awareness training this year to address this issue.

FAMU-FSU College of Engineering Tracking/Assessment Metrics for Diversity and Inclusion

FAMU-FSU Engineering Metrics	2016	2017	2018	2019	2020	2021	2022
Number of African American PhD graduates	2	1	5	2	*4*	*6*	*8*
Number of African American BS graduates	49	62	56	28	*50*	*60*	*80*
Number of female PhD graduates	1	5	7	6	*9*	*12*	*15*
Percentage of BS graduates from FAMU	6%	9%	9%	6%	*7%*	*8%*	*10%*
Percentage of female BS graduates	22%	24%	21%	23%	*24%*	*25%*	*27%*
Number of Hispanic PhD graduates	1	0	0	1	*2*	*3*	*4*
Number of Hispanic BS graduates	47	71	63	75	*80*	*89*	*100*
Second year retention rate at FAMU	N/A	N/A	N/A	79%	*83%*	*85%*	*87%*
Six year graduation rate at FAMU	N/A	N/A	N/A	40%	*43%*	*46%*	*50%*
Percentage of female faculty	N/A	N/A	N/A	15%	*17%*	*20%*	*22%*
Percentage of female faculty in annual hiring cohort	N/A	N/A	N/A	30%	*50%*	*60%*	*60%*
Percentage of under-represented minority faculty (not including gender)	N/A	N/A	N/A	13%	*15%*	*17%*	*19%*
Percentage of tenure-line faculty from FAMU	26%	27%	27%	26%	*26%*	*26%*	*26%*
Number of FTIC students entering FAMU as engineers	N/A	209	233	300	*330*	*360*	*390*
Number of female PhD cand. enrolled	43	42	45	51	*54*	*57*	*60*
Number of Hispanic PhD cand. enrolled	4	6	5	3	*6*	*9*	*12*
Number of FAMU PhD students enrolled	26	30	32	44	*48*	*53*	*58*
Number of transfer students in engineering at FAMU	N/A	12	14	15	*30*	*50*	*70*
Percentage of female BS enrollment	26%	25%	26%	28%	*29%*	*31%*	*33%*
Percentage of BS enrollment from FAMU	15%	15%	15%	17%	*19%*	*21%*	*23%*
Percentage of staff who are African American	N/A	N/A	N/A	23%	*25%*	*25%*	*25%*
Percentage of staff who are female	N/A	N/A	N/A	58%	*58%*	*58%*	*58%*
Percentage of staff who are Hispanic	N/A	N/A	N/A	3%	*5%*	*7%*	*9%*
Number of Joint Appointments with FAMU or FSU colleges outside engineering	N/A	N/A	N/A	1	*3*	*5*	*7*