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# A. James Clark School of Engineering Diversity Plan

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UNIVERSITY OF MARYLAND'S  
STRATEGIC PLAN FOR  
DIVERSITY

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ENGINEERING DIVERSITY COUNCIL  
2016

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**CLARK SCHOOL OF ENGINEERING  
DIVERSITY COUNCIL  
Recommendations**

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## **Diversity Statement**

The A. James Clark School of Engineering will ensure that all members of our college community will acquire the knowledge, experience and cultural competencies necessary to succeed in a multicultural, globally interconnected world. Ours is the long-term goal of equity and inclusion for women, underrepresented ethnic minorities, sexuality and gender identity-based cultures, citizens with disabilities, citizens from disadvantaged socio-economic backgrounds, veterans, and religious minorities.

This will be achieved by providing strong leadership that supports measurable diversity and inclusion at all levels within the college. We will also increase opportunities for leadership training, mentoring, and professional growth for students, staff and faculty as well as the advancement of diverse faculty and staff in all divisions.

The Clark School will create, promote and facilitate both academic and co-curricular programs and activities that foster positive relationships and interactions among students, alumni, faculty and staff and collaborate on initiatives with the Prince George's County community that support diversity and inclusion. The Clark School is committed to providing undergraduate students the opportunity to acquire the wealth of knowledge, diverse experiences and cultural capacities necessary to excel in the global community. In addition, all departments and programs within the Clark School will equip graduate students with diversity related expertise. We will also increase faculty capacity to educate students about diversity related issues and to develop inclusive learning environments.

For our cutting edge and innovative research, we will identify unintentional hindrances and difficulties that limit the inclusion of our diverse student and faculty populations and propose strategies that will enhance their opportunities. The Clark School will continue to perfect practices that will allow us to recruit the most talented students, staff and faculty to our program and support our diverse populations by creating an inclusive environment that allows us to retain the future leaders of tomorrow. Our commitment to diversity and inclusive excellence is measureable and will continue to forward the ideals of the University of Maryland.

## **Message from the Dean**

“As a part of the University of Maryland’s commitment to an increase in our awareness, knowledge and skills related to diversity and inclusion, the A. James Clark School of Engineering has an innovative vision to create an environment that is not only diverse, but is an example of inclusive excellence for our students, staff, faculty and alumni. As a core value, a diverse educational community is one of our greatest strengths. While current national focus is on race, race relations and racial justice, we realize that diversity a multifaceted topic and are actively working to implement strategies that will have a positive impact on the various demographics that the Clark

School represents, such as underrepresented ethnic minorities, persons with disabilities, and women. In addition to being a leading program for graduating minorities in STEM majors, we want to maintain our standing as one of the top 25 schools in the nation for inclusiveness of LGBTQIA students. We will actively enhance support of our veterans who are now our students, staff, faculty and alumni. We will identify areas that can prove to be an obstacle in the success of our students, staff, faculty and alumni and work to limit disparities in socio-economic status, age, gender and persons with disabilities. By living and working in a community that embraces diversity as a joy and privilege, we will further enhance the vitality of the educational experience. At the Clark School, we have a responsibility to provide all citizens, of not only our campus community but the Prince George's County community as well, access to the transformative experience of interaction with an institution of higher education and its opportunities for success. It is essential that we are exposed to different perspectives and interact with people from different backgrounds to explore ideas from different cultures in order to succeed in an increasingly diverse workplace and global community. I hope that you contribute to the establishment of the Clark School as a leading example of diversity, equity, and inclusive excellence."

- Dr. Darryll Pines  
Nariman Farvardin Professor and Dean of Engineering

## **Council Members and Structure**

Jasmine Cooper - *Chair*  
*Program Management Specialist – Electrical and Computer Engineering*

Andrew Berkovich  
*Graduate Student - Electrical and Computer Engineering*

Marion Devaney  
*Business Manager – Electrical and Computer Engineering*

Sharon Hodgson  
*Director of Administrative Services - Fire Protection Engineering*

Thomas Hurst  
*Assistant Director of Graduate Studies - Aerospace Engineering*

Dr. Birthe Kjellerup  
*Assistant Professor - Civil and Environmental Engineering*

Dr. Peter Kofinas  
*Associate Dean for Faculty Affairs and Graduate Program - Clark School of Engineering*  
*Professor - Bioengineering*

Dr. Luz Martinez-Miranda  
*Associate Professor - Materials Science and Engineering*

Dr. Silvina Matysiak  
*Assistant Professor - Bioengineering*

Dr. Alejandra Mercado  
*Associate Director - Master's in Telecommunications Program, Electrical and Computer Engineering*

Nadjia Motley  
*Undergraduate Student – Clark School of Engineering*

Rosemary Parker  
*Director - Center for Minorities in Science and Engineering*

Dr. Jonathan Simon  
*Professor - Electrical and Computer Engineering*

Dr. Jelena Srebric  
*Professor - Mechanical Engineering*

Leopoldo Torres, Jr.  
*Graduate Student – Bioengineering*

Joshua Vincent  
*Graduate Student - Clark School of Engineering*

Dr. Nam Sun Wang  
*Associate Professor – Chemical and Biomolecular Engineering*

Tammie Wanning  
*Payroll & HR Coordinator - Mechanical Engineering*

### **Diversity Plan Draft Subgroups**

The Clark School's Diversity Plan will create an infrastructure that supports the implementation of the University's Strategic Plan for Diversity and the achievement of College-specific goals in six core areas: Leadership, Climate, Recruitment and Retention, Education, Research and Scholarship, and Community Engagement. The following Committee members were recruited to take the lead for the write-up of the recommendations in each are:

1. Leadership: Nadjia Motley (also leading the student diversity council)
2. Climate: Leo Torres, Jr. and Sharon Hodgson
3. Recruitment and retention: Andrew Berkovich and Alejandra Mercado
4. Education: Josh Vincent, Silvina Matysiak, and Nam Sun Wang
5. Research and Scholarship: Jonathan Simon , Luz Martinez-Miranda, and Birthe Kjellerup
6. Community Engagement: Jasmine Cooper

## Recommendations

For each of the six core areas, Leadership, Climate, Recruitment and Retention, Education, Research and Scholarship, and Community Engagement, the council compiled goals, strategies, and recommendations. Details of the Clark School's Diversity Plan can be found in the following sections.

### Leadership

**Goal 1: The Clark School will provide strong leadership for diversity and inclusion at all levels within the school of engineering.**

**Strategies:**

- a. The Dean will create a Diversity Council within the school of engineering. This council will consist of representatives from all divisions, including graduate and undergraduate student bodies, faculty and staff.
- b. Units represented on the diversity council will be responsible for providing diversity education, overseeing climate assessments, and supporting diversity-related recruitment/retention, programming, and evaluation efforts within the Clark School.
- c. The Clark School will establish leadership education and mentoring programs for talented staff from diverse groups that provide avenues for professional growth, network development, and career advancement.

**Goal 2: The Clark School will increase opportunities for leadership training, mentoring, and professional growth for students, staff and faculty as well as the advancement of diverse faculty and staff in all divisions.**

**Strategies:**

- a. The Clark School will establish leadership education and mentoring programs for talented staff from diverse groups that provide avenues for professional growth, network development, and career advancement.
- b. The Clark School will establish leadership education and mentoring programs for engineering student organizations in order to help develop strong connections and leadership avenues.

- c. The Dean, Department Chairs and Management will take steps to increase the diversity of leadership ranks across the departments/units to support a diverse and inclusive institution.
- d. All leadership (Dean, Department Chairs, Management etc.) will be strongly encouraged to attend Rainbow Terrapin Network Membership Training.
- e. The Dean will help each unit establish measurable goals for diversity and inclusion at the department/unit levels and help units meet their goals. Accountability mechanisms will be used to assess outcomes. Support for diversity and inclusion will be a uniform qualification for all leadership positions and a performance criterion in the annual reviews of all campus leaders, management and staff.

**Goal 3: Department Chairs and Management will provide opportunities for diversity and inclusion within the department.**

**Strategies:**

- a. Department chairs and management need to encourage participation at least semi-annually in a cultural awareness/diversity activity.
- b. Staff and faculty should attend training/workshops/seminars to help promote diversity and cultural differences. The Payroll/HR Coordinators and management within the departments should be responsible to disseminate information to the department regarding diversity programs/events sent.
- c. The department will sponsor student forums help develop a safe and inclusive learning environment
- d. The chairs and management should set examples by attending events and encouraging participation from the staff.
- e. Attendance at events should be included in the staff PRDs.
- f. Departmental Staff meetings should include information regarding Diversity/inclusion
- g. The Chair and management should also be mindful of discouraging behaviors that do not promote diversity and inclusion.
- h. When new employees are hired, training should be provided on diversity/inclusion.

## Climate

**Goal 1: The Clark School will provide an encouraging and supportive environment for students, faculty, and staff.**

### Strategies:

- a. Establish a college-level access point for information about resources in place for various groups.
- b. Modify current web site for ease of navigation
  - Keep web site up-to-date with current programs available
  - Change web site navigation options so that resources are broadcast more widely. Examples: women resources for students and staff, not only for faculty; and diversity resources for current students, not just prospective students.
  - Link the access point from department pages.
- c. Consider a platform other than the web site, for example on social media, for groups to access information, communicate, or come together.
- d. Use the college-wide calendar to communicate related events.
- e. Find ways to get constituencies together for exchange of ideas, appreciation, and spirit of community.
- f. Establish mentoring/counseling resources in the Clark School, accessible to anyone.
  - If programs exist at university-level, then re-direct them, as appropriate.

## Recruitment and Retention

The recommendations for this area are divided into those pertinent to (1) Recruitment and Admissions, and (2) Retention. Each one of these is also grouped into two types of implementations. One kind is designed to be visible and publicly available, such as in web pages, brochures, and posters. The other kind of implementation is not intended to be publicly displayed, but rather deals with enriching training, orientation, and mentorship within the engineering community.

### 1) Recruitment and Admissions

This section discusses student admissions for both undergraduate and graduate students, as well as staff and faculty hiring.

#### Strategies for Open and Publicly Available Implementation:

*These recommendations are designed to be visible and publicly available, such as in web pages, brochures, and posters.*

- a. Create and disseminate diversity recruitment materials
  - A few years ago the Center for Minorities in Science and Engineering worked with the other STEM colleges to create a Diversity Brochure. It would be very effective to do this again.
  - Create posters, videos, emails, letters promoting UM's vision of diversity in engineering.
  - Cater materials to target underrepresented groups:

For example, for the Holton Arms all girls' school, distribute a poster showing female engineering students working on projects, where the women in the photograph outnumber the men.

Another example: for brochures directed at the Frederick Douglass High School, show African American engineering students working on projects, showing that half the team's members are women.

- It is important to make sure that all publications, webpages and any other communications are inclusive.
- b. In ENGR web page, publish letters explaining that we actively seek and wish to recruit a diverse population
    - The idea here is to emulate the idea of Stanford's [open letter](#), "Needed: More women in data science," but in our case, expand the concept to include all under-represented groups.
  - c. Funding for underrepresented minorities to attend summer engineering camps (for high schoolers and for Research Experience for Undergraduates)

For example, promote students to apply to [NSF REUs](#) for admissions to graduate school.

Another example: find corporate sponsorship to fund these camps or REU opportunities.

### **Strategies for Internal Only Implementation:**

*These recommendations are not intended to be publicly displayed, but rather deal with enriching training, orientation, and mentorship within the engineering community.*

- a. Increase the matriculation rate through intensive recruitment of admitted students. These recommendations are currently being done by the Center for Minorities in Science and Engineering (CMSE), The Women in Engineering Program (WIE) and the Clark School Recruitment Office. However, it would be a step forward to have more collaboration between these offices and the departments.
  - Once students have been admitted, strongly encourage all admittees, particularly underrepresented students, to accept the offer of admission.

For example, telephone admitted students, and then follow up with an email.

Another example: invite all prospective students to the campus for a visit.

- One major barrier here is financial support. We lose some admitted underrepresented students because they receive better scholarship offers from other institutions.
- b. Generate a tutorial, preferably a video, to guide new admissions committee members.
- Ideally, during any new admissions officers' orientation, they would be shown a video made by the Dean who would speak to the committee about our diversity vision.
  - Help new admissions officers understand the importance of diversity consideration.
  - Provide guidance on how to translate this into admissions decisions.
- c. Cater each action to a specific group, not a general "we love diversity" statement, but understand and react to the group that is least represented (see Appendix C for population and enrollment proportions, as an example).
- The Dean has a plan and a vision for what population densities for these groups we strive for. Label this the "ideal" population distribution, that is to say, *our goal*. Compare current populations to that goal, and numerically measure which groups are farthest from that goal.
  - Use a numerical metric, like the Kullback-Leibler diversion metric, to identify specific groups that require most attention (see Appendix A for an example obtained from the U.S. Census Bureau)
  - Include the results of this analysis in the tutorial for admissions committees, and hiring officials

## 2) Retention

This section discusses student retention, retaining undergraduate students for graduate programs, as well as staff and faculty retention, and diversity in tenure.

### Strategies for Open and Publicly Available Implementation:

*These recommendations are designed to be visible and publicly available, such as in web pages, brochures, and posters.*

- a. Promote, support, collaborate with Center for Minorities in Science and Engineering (CMSE) and Women in Engineering (WIE)
- b. Track activities and events by the [UMCP Office of Diversity and Inclusion](#), [UMCP ADVANCE](#), and [TCTC](#).
- Disseminate and promote events

For example: [Annual Pow Wow](#) (Native American)

- Expand these events within ENGR, (For example, ECE's International Day could be a tag-along to an ODI event).
- c. Promote events like ECE's International Day, but for all of the School of Engineering, and make it for Diversity (not just International):
- lunchtime pot luck, each; encourage people to bring food from their culture
  - diverse music (MP3 player with wireless speakers)
  - broadcast request for favorite music celebrating diversity
- d. Include quick links in engineering and department web pages to social networks that help to supply support to underrepresented groups:

For example, the [Rainbow Terrapin Network](#) (LGBTIA)

Another example: [Sister to Sister](#) (women)

- e. Fund underrepresented minorities to attend Research Experience for Undergraduates

For example, promote students to apply to NSF REUs for admissions to graduate school.

Another example: find corporate sponsorship to fund these camps or REU opportunities.

### **Strategies for Internal Only Implementation:**

*These recommendations are not intended to be publicly displayed, but rather deal with awareness, enriching training, orientation, and mentorship within the engineering community.*

- a. Promote awareness among faculty and staff, and present data reflecting diversity trends in tenure track promotions (see Appendix B)
- b. Acknowledge that change in this process takes years to become manifest.
  - Underrepresented faculty may need mentoring for winning research grants, and succeed in the publishing process.
  - Promotion committees can receive the diversity education package, which includes the video made by the Dean who would speak to the committee about our diversity vision. This should be a resource not only for prospective applicant, but also for faculty and staff who are mentoring.

## Education

**Goal 1: The University will ensure that undergraduate students acquire the knowledge, experience, and cultural competencies necessary to succeed in a multicultural, globally interconnected world.**

### Strategies:

- a. Provide undergraduates with a diversity module before registering for their fall classes. The module will include a video (about 5 minutes), supplemental reading, diversity-focused elective course listings, and a review of diversity resources on campus. The Clark School Diversity Council will be responsible for creating and implementing the module with the assistance of the ADVANCE, TLTC and Office of Diversity and Inclusion office.
- b. Identify opportunities to interweave topics of diversity into existing courses. Implementation should be similar to ABET accreditation criteria. Departments are responsible for documenting their efforts and for reporting them to the Clark School Diversity Council.
- c. Support the School's Science, Technology, and Society Scholars Program, and encourage undergraduate students to enroll in the Program's elective courses.
- d. Host seminar talks on diversity in the college and encourage undergraduate students to attend them.
- e. Mix students in group formation in classes instead of letting students form their groups. The faculty will create groups such that the diversity composition is maximized.

**Goal 2: Departments and programs will equip graduate students with diversity-related expertise.**

### Strategies:

- a. Provide graduate students with a diversity module before registering for their fall classes.
- b. Encourage graduate students to partner with high-school students from minority institutions seeking summer internships in the college. This will be done in partnership with the Women in Engineering and the Center for Minorities. PI's will lead on taking high-school students, who will be partnered with graduate students.
- c. Include seminar talks on diversity in the college and ensure graduate students attend them. The seminar can be once a semester, in the regular seminar series of each department.

- d. Each department will report yearly to the Clark School Diversity Council their efforts regarding recruitment of under representative students.
- e. Include training on diversity-related topics during the TA orientation/training. The Clark School Diversity Council will be responsible for creating the material with the assistance of the ADVANCE program, TLTC and Office of Diversity and Inclusion office.

**Goal 3: The University will increase faculty capacity to educate students about diversity related issues and to develop inclusive learning environments.**

**Strategies:**

- a. Provide faculty with a diversity-training module once a year. This module will include literature that discusses diversity, learning styles, intrinsic biases, etc. The Clark School Diversity Council will be responsible for creating and implementing this module with the assistance of the ADVANCE, TLTC and Office of Diversity and Inclusion office.

## **Research and Scholarship**

### ***Objectives***

- To identify unintentional hindrances and difficulties that limit the inclusion of a diverse student population in research activities.
- To propose strategies that will enhance the diversity of students in research.
- To identify unintentional hindrances and difficulties that limit the research activities of a diverse faculty population.

### ***Recommendations***

#### **1. Impact of faculty teaching and service load on underrepresented undergraduate students in research**

Conduct an evaluation of faculty teaching load (considering course size, time and effort, TA support, etc.), and service load (including mentoring), across all Clark School departments to identify faculty with a disproportionately heavy teaching and service load. Such heavy loads limit faculty's ability to include underrepresented undergraduate students in research.

### **Strategies:**

The faculty teaching load data is already available in individual departments (which faculty have taught which courses, the course sizes and TA support, race/ethnicity and gender of faculty) and would only require collation and analysis of that data. Data on faculty time spent on service and mentoring has not yet been gathered, but surveys conducted already by the ADVANCE program

demonstrate that this data is straightforward to collect and analyzed. Limiting both data collections to the most recent five years (or even three, if it would substantially reduce the data collection burden) would be reasonable and appropriate. Data should not be simply averaged over departments (which can conceal inequities) but analyzed with respect to race/ethnicity and gender both within departments and school-wide.

If the results show that some or many underrepresented minorities have disproportionate teaching and service load, there will be a follow-up proposal with action items, which should also include salary as part of the analysis.

## **2. Survey of underrepresented minority undergraduate student research**

Conduct a survey evaluating the number of underrepresented undergraduate students involved in research activities, both during the semester and during breaks, and both on and off campus.

### **Strategies:**

Limiting the survey data to formal research mentoring (e.g., only departmentally sponsored, or federally funded, undergraduate research programs) would be important in order to keep the collection of such data feasible, since such programs are already require (or are likely to require) the collection of diversity information.

## **3. Clark School Summer Internship Program for underrepresented students and professors**

Establish a Clark School Summer Internship Program for underrepresented students and professors

### **Strategies:**

This program would be modeled after NSF REU programs. The program would recruit underrepresented minorities at the national scale for summer undergraduate research in Clark School labs. Ten slots would allow for inclusion across the eight Clark School departments and still allow for two “at-large” slots, e.g., for larger departments. The students would be provided with an 8-week stipend, residency and (limited) supplies for their research, i.e., comparable to that offered to NSF funded REU students. The Clark School would also need to provide staff to run the program (e.g. to organize housing, GRE and other tutorials, plan summer events and tours, etc.) and appropriate summer compensation for the program’s faculty director. Faculty who are also underrepresented minorities, and therefore role models, should be strongly incentivized to participate with small but meaningful stipends (or overhead) as well.

Funding would come primarily from the dean’s office, with only limited and modest contributions from the department.

Clark School UMD-student-focused summer undergraduate research programs already in place would need to be bolstered so as not to create a two-tiered system where the best UMD underrepresented minority undergraduate students would, in practice, be penalized for being a UMD student.

#### **4. Continue efforts to externally fund undergraduate research student programs**

The Clark School must continue to apply for grants that can be used for inclusion of undergraduate research students. These proposals could/should include faculty in order to include engineering disciplines into the proposals. These could be similar to ADVANCE grants, REU proposals or other from NSF and other funding agencies and private foundations.

##### **Strategies:**

Many externally funded undergraduate research student programs, e.g., NSF, place strong value explicitly showing commitment to support underrepresented minority students. Adding such explicit support to proposals put submitted by individual Clark School departments and programs would benefit both the proposal and the underrepresented minority students eventually funded by them. PIs should be offered commensurate rewards for leading such programs (e.g., reduction in teaching load or extra TA support).

#### **5. Distribute information pertinent for underrepresented minority students.**

It is sometimes hard to navigate the maze of internships, fellowships etc. and how to apply for these. This is in particular the case for undergraduate students that are not experienced and are easily intimidated by all aspects of the application process. The Engineering Co-op and Career Services Office provides a website that identifies sources of funding, and resources which new students need to be made aware of.

##### **Strategies:**

- 1) In order to make this information more easily accessible, the Dean of the Clark School will, each term, send a message to the advisors of the different departments about the website for undergraduate students, as well as the resources for graduate students.
- 2) The office of the Dean will also send brief reminders to students about these resources, and urge them to ask their advisors about them.

## **Community Engagement**

**Goal: The Clark School will create, promote and facilitate both academic and co-curricular programs and activities that foster positive relationships and interactions among students, alumni, faculty, staff and the Prince George's county community that support diversity and inclusion.**

### **Strategies – Intra Clark School:**

- a. An annual Day of Inclusive Excellence will be established within the Clark School. All faculty, staff, students and alumni will be invited to attend. The Day will include an evening component will be created in order to include members of the Prince George's County community. All employees in supervisory roles will be strongly encouraged by the Dean of the Clark School to attend. In coordination with University Human Resources, Clark School human resource employees will disseminate information that pertains to diversity within the areas of professional, social, economic and spiritual development.
- b. The Clark School Diversity Climate survey will be administered every two years in October to students, faculty and staff. The Clark School will actively work to promote minority based student groups and their programing. This will be achieved by Clark School Communicators sharing information regarding these groups with their respective departments.

### **Strategies – Outside of the Clark School:**

- a. Members of the Clark School Diversity Council will contact the cities of College Park, Riverdale Park, Hyattsville, and Berwyn Heights to establish relationships with civic leaders who can provide information about the needs of the diverse community populations and potential collaborative programing. The Clark School will also work in conjunction with existing community service based student groups and the office of Services 24/7 at the University of Maryland, to further assess opportunities for engagement.
- b. Through working with the Leadership and Community Service and Multicultural Involvement and Community Advocacy offices at the University of Maryland, the Clark School will collaboratively establish programing and promote existing programing between diverse populations within the Clark School and diverse populations within the surrounding community. All undergraduate students will complete two hours of community service per academic school year. Departmental

undergraduate staff will reinforce these recommendations and with the departmental External Relations offices, will help establish opportunities for engagement.

## Contact Information

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# Appendix

## Appendix A - Kullback-Leibler Diversion Metric Example

Consider minority representation in engineering throughout the United States today. This Appendix shows an example of one metric that compares current populations to an ideal goal, and sorts which groups are farthest from that goal.

Define a plan and a vision for what population densities for underrepresented groups we strive for. Label this the “ideal” population distribution: our goal. For example, you may identify that a population, denoted  $M$ , has a density of 30% in the general U.S. population. Then, our goal would be to strive for 30% of Engineers belonging to that group,  $M$ .

The Kullback-Leibler diversion metric compares current populations to that ideal goal, and numerically measure how far we currently are from that goal.

For our example, if 30% of Engineers in the United States belong to the group  $M$ , then the Kullback-Leibler diversion will be 0.0: a perfect, ideal fit. But, what if only 0.0001% of Engineers in the United States belong to the group  $M$ ? Then the Kullback-Leibler diversion will be 5.1: a very bad fit, and an indication that we, the Engineering community, must work very hard to increase the number of  $M$ -persons in Engineering.

For specific examples of underrepresented groups working in Science & Engineering in the United States, this methodology yields the results shown in Table 1, sorted from worst to best.

**Table 1 Kullback-Leibler Diversion Metric for populations within the United States. Where, if  $\{q(i)\}_{i \in I}$  is the current proportion and,  $\{p(i)\}_{i \in I}$  is the ideal (goal) proportion, then the distance is  $\sum_{i \in I} p(i) \cdot \log_2 \left( \frac{p(i)}{q(i)} \right)$**

Underrepresented Group	Distance from target (goal) proportions
Female	0.34
Hispanic (HY)	0.08
Persons with Disability	0.07
Black	0.06
LBG **	0.03
Veterans ***	0.02
American Indian or Alaskan Native	0.004
Native Hawaiian or Pacific Islander	0.0004

\*\* Note no Government Census data was readily available about LBGTQIA population in the United States at the time of this document. Only LBG data was found in Government Census tables. Also, no reliable percentages were readily available about LBG in Engineering, and this study references LGBT in all STEM areas, not just Engineering. Sources remark that many LBGTQIA persons in STEM refrain from publicly identifying themselves as such.

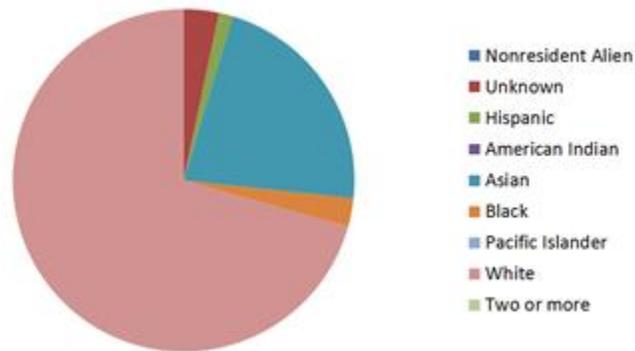
\*\*\* The Engineering Diversity Panel is grateful to Brian Bertges, Coordinator for Veteran Student Life of the University of Maryland, for finding the source for this data.

The data for Table 1 was collected from the U.S. Census Bureau, the National Science Foundation, the National Center for Science and Engineering Statistics, the Scientists and Engineers Statistical Data System (SESTAT), the National Survey of College Graduates (NSCG) (2010), the U.S. Department of Veterans Affairs, the American Society of Engineering Education (ASEE), the U.S. Center for Disease Control and Prevention (CDC), among other sources (<http://sestat.nsf.gov>).

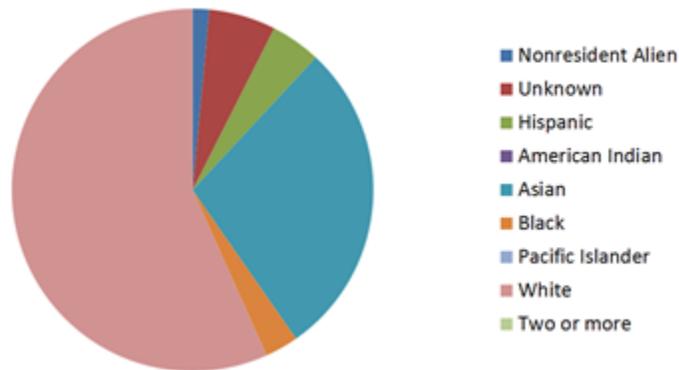
## Appendix B – Example of Tracking Diversity Trends for Tenure

This appendix presents an example of what diversity trend tracking might look like, and how it may raise awareness for leadership, and Tenure Committees.

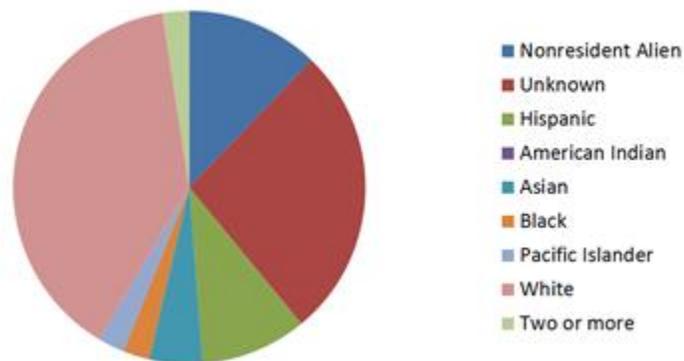
Tenure-Track: Full Professor Profiles



Tenure-Track: Associate Professor Profile



Tenure-Track: Assistant Professor Profiles



## Appendix C - Example of Tracking Population and Enrollment Proportions

This appendix presents an example of what diversity trend tracking might look like, and how it may raise awareness for leadership, admissions officers, faculty, and staff.

