Departmental BPC Plan
Knight Foundation School of Computing and Information Sciences
Florida International University

Effective dates of plan: 06/26/2024 - 06/26/2026
Point of Contact: Dr. Jason Liu (Chair KFSCIS: liux@fiu.edu)

1. Context

FIU is recognized as a leading producer of STEM degrees for students of diverse backgrounds and has over 25 STEM degree programs in 12 departments including Knight Foundation School of Computing and Information Sciences. Further, we accept our responsibility as a vital driver for economic mobility across South Florida, especially given that 85% of our undergraduates are from the local region and 69.85% remain within 200 miles and 79.30% remain in Florida after graduation. FIU's demographics represent that of our future nation and thus FIU has embraced its role as a lab for the future of STEM.

Faculty: KFSCIS currently has 58 full time faculty members across the categories of Full (12), Associate (11), and Assistant (13) Professors, and Full (1), Associate (9), and Assistant (12) Teaching Professors. Of these, at least 21 (40%) are women, Hispanic, and/or African American, all groups minoritized in computing (hereafter: *minoritized groups*).

Graduate Students: KFSCIS is home to 440 graduate students across the categories of Doctoral and Master's (341) students, with the following racial and gender distribution: White 18 (4%); Hispanic 142 (32%); Black or African American 16 (4%); Asian 10 (2 %); unknown 254 (42%); Male 345 (78%); Female 95 (22%). In total at least 186 (42%) are members of minoritized groups.

Undergraduate Students: KFSCIS is home to 3,876 undergraduate students, with the following demographics: White 338 (9%); Hispanic 2,471 (64%); Black or African American 514 (13%); Asian 192 (5%); unknown 361 (9%); Male 3,029 (78%); Female 847 (22%). In total at least 3,177 (82%) are members of minoritized groups.

2. Goals (G), Activities (A), and Measurement (M)

G1. *Increase the number of students from minoritized groups who enroll in entry-level computing courses and computing majors each year. We hope to stimulate interest and improve outcomes for all computing degrees at FIU by reimagining career pathways, igniting curiosity for CS and Technology, and building a supportive community to create and sustain a sense of identity. (Contact: Nirmala Arunachalam and Steven Luis)*
G1A1. Highlight interesting topics from faculty research areas by designing and/or implementing short modules (2-3 hours) to be used in BPC-focused outreach and the BPC-focused Break Through Tech (BTT)-Miami's Guild program.
G1A2. Assist with weekly coaching of the FIU Programming Team consisting of high representation of the students from minoritized groups with the goal of preparing them for intercollegiate programming competitions.
G1M1. Success is measured by the number of students from minoritized groups enrolling in an entry-level computing course or changing their majors to computing. Sprinternships are evaluated by the number that turn into a full internship or employment collected by the Break Through Tech - Miami team.

G2. *Measure and increase the number of CS-trained K-12 teachers who teach in South Florida schools, a majority of whose students are from minoritized groups. (Contact: Giri Narasimhan)*
G2A1. Design and/or implement modules (3 hours to 20 hours) to train K-12 teachers who serve primarily students from minoritized groups for implementation in South Florida schools in computing topics such as Data Science, Cybersecurity, Robotics, AI, Cryptography, Visualization, Bioinformatics, eCommerce,

Computational Finance, or Blockchain, with applications in a specific domain such as Life Science, Environment, Business, or the Arts.

G2A2. Design and/or implement training modules for K-12 teachers who serve primarily students from minoritized groups to be certified to teach CS in K-12 schools.

G2A3. Design computing-oriented activities (such as challenges and competitions) for K-12 students from minoritized groups.

G2M1. Success of the professional development workshops is measured by the number of K-12 teachers trained, the number of K-12 schools that implement the training in their classrooms, and the number of K-12 students in those classrooms collected by the Academy for CS Education team.

G3. *Annually increase the belonging and inclusion reported by people from minoritized groups in annual surveys, focus groups, and interviews. We hope to demonstrate an increase in the integration of the voices and agency of students from minoritized groups into institutional decision-making and enhancing faculty and administration commitment to their success. (Contact: Janki Bhimani)*

G3A1. Participate in the 3-day Inclusive Teaching Summit (ITS) where *the participants will be introduced to the* data, research findings, theoretical frameworks, lived experiences, and readings focused on student success of the minoritized groups.

G3A2. Facilitate and encourage students from minoritized groups to participate in FIU's in-house Gateway Student Perceptions & Behaviors Survey (GSPBS) to explore the learning environment and belonging in STEM classes and engage in evidence-based course reform.

G3A3. Participate in the inclusive-teaching reading group designed to create opportunities for difficult conversations around mindset, departmental, and institutional culture, in teaching and learning by FIU's Center for the Advancement of Teaching (CAT).

G3M1. Success is measured mainly for the three aspects- Student, Faculty, and Institutional effects, by the number of students, faculty, and departments participating in the activities and the quantitative and qualitative impacts measured from the surveys, focus groups, and interviews conducted with the Students, Faculty, Chairs, Deans, Provost, Staff, and FIU admins conducted by the VOCES team.

G4. *Faculty Hiring and Retention – Demonstrate increases in numbers of faculty from minoritized groups recruited and retained in each year covered by this plan. (Contact: Jason Liu)*

G4A1. Establish clear department tenure and promotion criteria. Prior research suggests faculty from minoritized groups receive less informal mentoring and particularly benefit from clear expectations. Clearer criteria can also reduce the role of implicit bias in promotion decisions.

G4A2. Assist junior faculty for professional development, including: 1) a formal peer mentoring program, designed to help junior faculty members by matching with experienced faculty members who can share experiences, expertise, and advice on research and teaching, and provide general guidance; and 2) a professional development workshop series, with topics including graduate student recruitment, proposal writing and grant management, tenure and promotion expectations, networking and collaborations, and so on. Prior research suggests faculty from minoritized groups receive less informal mentoring and particularly benefit from formal mentoring programs.

G4M1. Success is measured by the number of faculty from minoritized groups recruited, compared to national average, and retention of faculty from minoritized groups, compared to those in non-minoritized groups, collected by the Director of KFSCIS.