The iAAMCS Guidelines

for Successfully Mentoring Black/African-American Computing Sciences Doctoral Students

The iAAMCS Guidelines for Successfully Mentoring Black/African-American Computing Sciences PhD Students

These guidelines were established to articulate successful strategies for mentoring African-American doctoral students in Computing Sciences (CS). We define "student mentoring" as the process of supporting, encouraging and guiding students' academic and social progress with the goal of facilitating career and personal development. Grounded in project-based results and similar empirical research, the following guidelines emerged: (1) recruit strategically, (2) establish community, (3) foster a research culture, (4) provide holistic advising, (5) provide funding and (6) promote professional development. It is our hope that institutions, departments and faculty use these guidelines to bolster the participation of African-American students pursuing doctoral degrees in CS.

Although the iAAMCS Guidelines serve as best practices for mentoring African-American students in computing, these strategies are useful for optimal mentoring all students. Our data suggests that implementation of the practices outlined in these guidelines will enable African-American students to persist and graduate in CS PhD programs across the US. Integral to the iAAMCS Guidelines is the assertion that inclusion is key to the success of African-Americans in CS and that inclusion is the responsibility of all campus constituents. Using the "7 Barriers to STEM Disciplines and the PhD" as a rubric,[1] the following guidelines aim to mitigate the challenges students face in pursuit of their doctoral degrees.

Jackson, J.F.L., Charleston, L. J., Gilbert, J.E., & Seals, C., (2013) **Changing Attitudes About Computing Science at Historically Black Colleges and Universities: Benefits of an Intervention Program Designed for Undergraduates,** *Journal of African American Studies*, 17, 2, pp. 162-173.

(1) Recruit Strategically

» Recruit African-American students in **COHORTS OF 2-3**

» Bolster recruitment by **PARTNERING WITH HBCUs AND OTHER MSIs**

» Schedule visits to **MEET WITH THE ACADEMIC COMMUNITY;** specifically, research scientists, postdoctoral fellows, and senior graduate students

» During the recruitment process schedule **INTERACTION WITH LOCAL AFRICAN-AMERICAN AND RELATED COMMUNITY ORGANIZATIONS**

» Establish **INSTITUTIONAL PARTNERSHIPS** with pipeline programs (i.e. NSF REUs) to develop strong relationships)

(2) Establish Community

» Retain a "critical mass" of African-American students in computing thus **CULTIVATING A CAMPUS COMMUNITY**

» Create **DISSERTATION WRITING GROUPS** for students to provide each other meaningful feedback throughout the PhD experience

» **ENCOURAGE COLLABORATION,** peer mentoring, and a supportive environment

» For **BROADER NETWORKING,** introduce students to the Black Graduate Student Association (BGSA) and the National Society of Black Engineers (NSBE), and diverse faculty across campus

» Establish institution-wide diverse faculty and staff support groups to enrich the African-American community and **MODEL DIVERSITY AND INCLUSION ON CAMPUS**

(3) Foster a Research Culture

» Expose undergraduate and graduate students to **FOUNDATIONAL RESEARCH TRAINING** through coursework and hands-on experience

» **INCREASE UNDERGRADUATE STUDENT RESEARCH OPPORTUNITIES** (i.e. partnering with the Ronald E. McNair Scholars Program, Louis Stokes Alliances for Minority Participation, etc.) to develop the graduate student pipeline

» Establish or encourage students to **PARTICIPATE IN FUTURE FACULTY MENTORING PROGRAMS**

» **CONTINUOUSLY ENGAGE STUDENTS** in activities to integrate them into their research communities (i.e. poster sessions, doctoral consortiums, student paper competitions)

(4) Provide Holistic Advising

» Initiate the transition into graduate school with **STRONG SUPPORT SYSTEM** by establishing a cohort, departmental ally, mentor, and advisor

» Assign a **DEPARTMENTAL ALLY/FACULTY MENTOR** to help students navigate their program

» Assign a **FACULTY ADVISOR** to train students in conducting research, the publication process, and the unspoken conventions of academia

» **ENSURE STUDENTS ARE PRODUCTIVE IN THEIR DOCTORAL PROGRAMS** by checking student CVs annually for adequate publications, conference participation, and honors

» Inform students of **ADDITIONAL SUPPORT AND RESOURCES,** such as psychological services, to foster their overall health and wellbeing

» Allow students to **ENGAGE CULTURALLY** without penalty

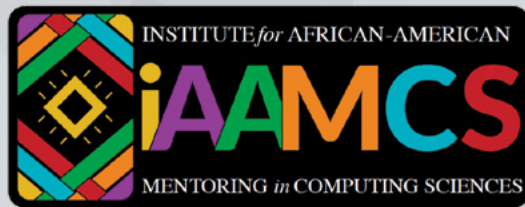» Provide opportunities for students to **LEAD AND MENTOR**

(5) Provide Funding

» Use **INTERNAL FUNDING SOURCES** from the department or advisor to support students

» Encourage students to **SEEK EXTERNAL FUNDING,** such as competitive STEM fellowships

» Fund students (if viable) to **REMAIN ON CAMPUS OVER THE SUMMER** to continue research or encourage participation in **PAID SUMMER INTERNSHIPS**

» Allow students **FLEXIBILITY TO PURSUE PAID INTERNSHIPS** during the academic term

» **PROVIDE SUPPLEMENTAL FUNDING** for external fellowship recipients

(6) Promote Professional Development

» Encourage students to **EXPLORE AND ATTEND CONFERENCES** relevant to their research that expand their professional network

» **SUPPORT PARTICIPATION IN INTERNSHIPS** to help solidify their research and/or industry interests

» Establish a speaker series, **INVITING DIVERSE GUEST LECTURERS** from industry and academia to periodically present their work/research. Allow interested students to have **ONE-ON-ONE DISCUSSIONS** with the speakers

» Spotlight and widely share information on programs that **BROADEN THE EXPERIENCE OF UNDERREPRESENTED STUDENTS**

For More Information

iAAMCS.org