IRIBE INITIATIVE FOR INCLUSION & DIVERSITY IN COMPUTING

MCWIC | MARYLAND CENTER FOR WOMEN IN COMPUTING

Iribe Initiative for Inclusion and Diversity in Computing (I4C): <u>Web</u> | <u>Twitter</u> | <u>LinkedIn</u>| <u>Instagram</u>
Break Through Tech DC at UMD: <u>Web</u> | <u>Twitter</u> | <u>LinkedIn</u> | <u>Instagram</u>
<u>2022-2023 Overview Slides</u>

2022-2023 Report

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1.   Executive Summary

The <u>Iribe Initiative for Inclusion and Diversity in Computing</u> (I4C) aims to create a supportive, vibrant and inclusive community of students, educators and researchers coming together to increase the involvement—and success—of all individuals from historically marginalized populations in computing. I4C delivers on this mission by hosting a wide variety of current student programming including mentoring, tutoring, community building, and student support—as well as K-12 outreach. A unit within the University of Maryland's Department of Computer Science, I4C supports all computing majors across campus. <u>Break Through Tech DC at UMD</u>, a national initiative committed to increasing gender equality in tech, is also housed within I4C. The <u>RESET Project</u>, a new program for Black, Latina and Native American (BLNA) women, launched in Spring 2023. Over 2,700 K-12 students and educators and over 1,100 UMD students directly engaged with I4C programming each year through <u>support from our many partners</u>. Over 75% of all students served are from populations underrepresented in computing.

In the academic year 2022-2023, <u>24 corporate and community partners</u> provided funding for the following programs:

- Over 1,100 current students attended our programs, including diversity conferences, tutoring, mentoring, and community-building programs.
- Over 160 students attended Diversity Conferences this year, including <u>Richard Tapia Celebration of Diversity in Computing</u>, <u>Grace Hopper Celebration</u>, <u>AfroTech</u>, <u>BEYA STEM</u>, <u>Wonder Women in Tech DC</u>, and oSTEM.
- Free <u>Guided Study Sessions and 1:1 tutoring</u> for undergraduate students were offered for CMSC 122, 125, 131, 132, 216, 250, 330 and 351— supported by 18 tutors. Over 300 students engaged in 1,100+ tutoring hours.
- 1200+ students, faculty, and staff have joined our I4C DICE Lounge Slack community

- Over 80 computing undergraduate and graduate students participated in the I4C Mentoring Program, which featured technical workshops, topics and monthly meetings with upperclassmen and alumni mentors. 35 alumni participated in the expanded program.
- 61 students from across the U.S. participated in the hybrid Tech + Research workshop as part of Technica. 9 different UMD faculty led projects.
- Break Through Tech DC at UMD hosted 16 community-building workshops with 882 unique attendees
- 92 students participated in Break Through Tech's Summer Guild program and 212 students participated in a supported intro course (CMSC 100/INST 101 or CMSC 125)
- 110 students participated in Break Through Tech's Sprintership and Career Launch
- 42 outreach ambassadors supported 150 activities that encouraged students from underrepresented populations to pursue computing careers and interests serving over 1,600 K-12 students, families and educators.
- Computing after-school programs were held at College Park Academy, Mother Jones Elementary, and Heather Hills.
- 220 campers participated in our Summer 2023 summer academy programming through AI4ALL, JumpStart Computing, Create Tech, CompSciConnect and Cyber Defense,
- I4C supports recruitment efforts for undergraduate students from underrepresented populations by mailing postcards and hosting open houses for admitted students.
- New funding was received from Reboot Representation to support BLNA women scholarship through the RESET Scholars
- New funding was received from NSF to support Broadening Participation efforts on the Secure IT project & to lead the BP efforts for TRAILS
- Monthly communications through the Diversity newsletter were shared with all students to encourage a more inclusive climate.

2. Iribe Initiative for Inclusion and Diversity and Computing Staff
- Founding Director: Dr. Jan Plane
- Interim Director: Dr. David Weintrop
- Associate Director: Kate Atchison
- Program Manager, Current Students: Veronica Sanchez
- Program Manager, Community Outreach: Charlotte Avery
- Coordinator, S3C2: Ronaisha Ruth
- Career Access Lead, Break Through Tech DC: Caitlin Rudy
- Communications Lead, Break Through Tech DC: Katie Bemb
- Community Outreach Lead, Break Through Tech DC: Cholly Estes
- Curriculum Innovation Lead, Break Through Tech DC: Elias Gonzalez
- K-12 Research Graduate Assistant: Kristina Kramarczuk
- Current Students and Marketing Graduate Assistant: Asia Jones
- Break Through Tech Data Graduate Assistant: Yeri Jeong
- K-12 Outreach Graduate Assistant: Lucy Allan
- Office Undergraduate Student Worker: Amber Melton
- Undergraduate Research Students: Neha Shijo, Anaum Khan and Genevieve Sampson
- 54 Student Outreach Ambassadors throughout the academic year
- 18 I4C Tutors throughout the academic year
- 12 Summer 2022 Ambassadors

2.7K+ K-12 students impacted

50+ student staff (Ambassadors/Tutors)

60+ professional and social events

160+ Diversity Conference Scholarships

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2022-2023 HIGHLIGHTS

1.2K+ students in DICE Lounge Slack

80 students in Mentoring Program

60 students participated in Tech + Research

1.1K+ students engaged with Break Through Tech

3.   Break Through Tech DC

Break Through Tech DC at UMD is a national initiative committed to increasing gender equality in tech, and is housed within I4C. Through curriculum innovation, career access, and community building, Break Through Tech's goal is to achieve gender equality in tech. Break Through Tech DC at UMD works to create a more inclusive tech ecosystem, starting right here in College Park..

On March 2, 2021, UMD announced a grant from Break Through Tech to propel more women into computing degrees and careers in tech through curriculum innovation, career access and community building. The grant's goal is to increase the number of women graduating with a tech degree at UMD by at least 12% by 2026. At UMD, this increase to CIP code 11 means that 35% of computing graduates will be women and at least 200 additional women will graduate with computing degrees by 2027. Since 2016, UMD's CIP code 11 has increased the number of women graduating by 5.8%.

2022-2023 Impact By the Numbers (June 2022-May 2023)

92 students in 3 sessions of Summer Guild

110 students in Sprinternship and Career Launch

1.5K+ followers on social media

1,221 students receive newsletter

882 unique community event attendees

23 yield and orientation events with 1,000+ new students

212 students in CMSC100/INST101 and CMSC125

71 industry volunteers from 14 different organizations

90 attended Grace Hopper Celebrations

16 community-building events

[Break Through Tech DC website](#)
[About Us and Staffing](#)
[2022-2023 Report & 2023-2024 Stategic Planning](#)

4.   Research Efforts & Special Projects

I4C is actively involved in the computer science (CS) education research community. We are committed to learning more about current efforts in CS education research as well as contributing our own research ideas and findings to the field. By attending and presenting at national conferences such as SIGCSE, AERA, Tapia, and RESPECT, we continue to identify and implement high quality and data-driven practices that acknowledge and target disparities in computer science that exclude the participation of students based on their gender identification, race, ethnicity, socioeconomic status, sexual orientation, and/or disability status.

I4C and MCWIC regularly evaluate their programs to understand how exposure and access to computing in the K-12 landscape affects girls and BLNA students' confidence in pursuing STEM majors and careers. Through one-day workshop-style events, summer camps and after-school programs, pre- and post-surveys are collected from student participants. An initial analysis of surveys collected shows several trends in the lack of encouragement and exposure to computing that girls and BLNA middle school students receive. Analysis also shows that our outreach efforts, including our virtual programming, have a positive impact on student confidence and interest in the field of computing. During the last year, the following submissions were accepted:

- **A Longitudinal Study of the Post-Secondary Experiences of Women of Color in Computing -** *Paper accepted for the 2023 Research for Equity and Sustained Participation in Engineering, Computing, and Technology Annual Conference*
- **CompSciConnect: A Multi-Year Summer Program to Broaden Participation in Computing -** Paper accepted for the *2023 ACM Technical Symposium on Computer Science Education Annual Conference [(link)](#)*

- **Computing Education for Social Good: Preparing Undergraduate Computer Science Majors to Become Anti-biased K-12 Educators -** *Round table accepted for the 2023 American Education Research Association Annual Conference*

5.   In the News and Recognition

- [UMD Receives $500K to Boost Number of Black, Latina and Native American Women in Computing](#)
- [Finding the Confidence to Try New Things in Computing](#)
- [UMD Top Ranked for Bachelor's Degrees Awarded Overall and to Minority Groups in Computer and Information Sciences](#)
- [UMD's Computer Science Undergraduate Program Climbs Two Spots to No. 16 in U.S. News Rankings](#)
- [Undergrads Take Community-building Solutions to the Next Level](#)
- [Digital Skills 'Break Through' Across Disciplines](#)
- Which state is doing the best to improve access to computing education? ([Part 1](#)) ([Part 2](#))
- [Champion for Women and Underrepresented Students in Computing Retires from UMD](#)
- [Three Honorees to Be Recognized at Women of Influence Awards](#)
- [60 Terps to Lead Commencement Procession as Senior Marshals](#)
- [UMD Students Kickstart Their Tech Careers with Micro-internships](#)
- [Computer Engineering Students Participate in Break Through Tech's Inaugural Micro-Internship Program](#)
- [Seven iSchool Undergraduates Join UMD's First Sprinternship™](#)
- [Goodshuffle Pro is Partnering with Break Through Tech's Sprinternship Program](#)
- [Easy Dynamics Partners With Break Through Tech DC, Welcomes Group of Female UMD Students as "Sprinterns™"](#)
- [A VR View of Black Broadway: Students Create Virtual Tour to Showcase Decades of U Street Culture](#)
- [Upcoming Workshop Offers Positive Undergrad Research Experience](#)
- [Research Projects Open Doors for High School Students](#)
- [Undergrads Explore Tech Careers by Building Apps to Solve Transportation Challenges](#)
- [How the Iribe Initiative's Alumni Mentoring Program Prepares Undergraduates for the Professional World](#)
- [Five Computer Science Graduates Turned Internships into Full-Time Jobs](#)
- [Kate Atchison receives Department staff award](#)
- [Jan Plane receives Provost's Excellence Award](#)
- [Donna White named Break Through Tech DC Director](#)
- [UMD iSchool, CMNS & I4C Celebrate Break Through Tech DC Partnership to Foster Diversity in Computing](#)

6   Additional Department Diversity Efforts and Student Support

Kate Atchison, Elias Gonzalez, and Veronica Sanchez are all active on the CMSC Diversity Committee. You can view the highlights of the 2022-2023 work on the [CS diversity tab](#).

In September 2020, Dean Amitabh Varshney created the CMNS Diversity and Inclusion Advisory Council. Dr. Mihai Pop and Kate Atchison serve on this committee.

Over the last seven years, I4C has participated, partnered, and been invited to participate with the following external organizations and research efforts focused on diversity, equity, and inclusion. Current collaborators include:

- Maryland Site Lead: NCWIT Aspirations: 2015-Present
  - Recognizes high school women interested in computing
- Maryland Center for Computing Education: (MCCE)
  - State center to support K-12 computing education

- NCWIT Learning Circles: 2019-2020
  - Assist academic computing departments with the development and implementation of strategic initiatives to increase gender diversity in their undergraduate programs to create a customized strategic recruitment and retention plan, discuss challenges, and track progress.
- LEAP Alliance 2021-Present
  - Increase diversity in Ph.D. candidates among the African American, Hispanics, Native/Indigenous Americans, and People with Disabilities

Over the last few years, the number of student organizations supporting computing students has grown significantly, including specific identity-based organizations. Student organizations are significant in providing students an opportunity to explore their interests and connect to peers while building a strong sense of community. Over 2000 students are engaged in student organizations. Key identity-based organizations include the Association of Women in Computing (AWC), Technica, Code:Black, JHacks, Girls Who Code, and Hack4Impact. Additional CS students receive support and take on leadership roles in larger engineering or STEM-based groups such as BES, SHPE, SACNAS, and oSTEM.

7. Mission for Iribe Initiative for Inclusion and Diversity in Computing

Vision:
We are committed to diversifying the tech sector and making all areas of computing inclusive across the intersections of gender identification, race, ethnicity, socioeconomic status, sexual orientation, and disability status.

Mission
We aim to create a supportive, vibrant and inclusive community of students, educators and researchers coming together to increase the involvement—and success—of all individuals from historically marginalized populations in computing.

Goals:
- Support, educate and mentor students from populations underrepresented in computing majors and minors at the University of Maryland

- Collaborate with the K-12 community to encourage all students, especially those from historically marginalized populations, to become creators and leaders within computing

- Foster a safe space for faculty and staff along with undergraduate and graduate students in computing to connect across intersections of their identities through social, academic and professional programming

- Train, teach, and model community-building and advocacy skills so our community members are equipped with the tools and resources to advocate for change and make the computing field more inclusive.

In the Iribe Initiative for Inclusion and Diversity in Computing, we base the foundation of our definition for "underrepresented populations in computing" on the National Science Foundation (NSF) statement below.

"Across the computing workforce at all levels, there is underrepresentation of various populations including women, minorities (African Americans/Blacks, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, Native Pacific Islanders, and persons from economically disadvantaged backgrounds), and persons with disabilities." (https://www.nsf.gov/pubs/2018/nsf18101/nsf18101.jsp or https://www.nsf.gov/cise/bpc/)

Definition of Computing: Computing refers to academic and job-related activities that involve coding, software engineering, information science, immersive media, artificial intelligence, data science and other applications of computer science knowledge and skills.

8. Supporters and Funding

Fiscal Year 2023 Budget Total:
Annual Budget Allocation
$25,000 – Department of Computer Science
$25,000 – UMIACS (University of Maryland Institute for Advanced Computer Studies)

Additional Financial Support
- $1,000,000 gift from Brendan Iribe to start I4C
- $2.9 million grant from Break Through Tech via Pivotal Ventures
- $26,000 yearly – AFCEA Bethesda
- $40,000 yearly from DOD's research lab – Laboratory Telecommunication Science (LTS) – earmarked for research
- $500,000 Reboot Representation for RESET Scholars
- Corporate Partner Support/Alumni Giving- ~$51,000 for 2022-2023
- Registration Fees for summer programs and workshops
- Various Gifts and Grants – NCWIT, NSF, and more

2022-2023 Sponsors
Champion Level
AFCEA Bethesda
LTS
Reboot Representation
Break Through Tech

Advocate Level ($5000+):

Amazon	Qualcomm
Google	STR
	Workday

Additional Support ($3000):

Accenture	Lockheed Martin
Appian	M&T Tech
Capital One	Stripe
Fact Set	Two Six Technologies
Fannie Mae	Uber
Leidos	Zillow