Exploring the Data on Dual Pandemics: How Racism and COVID-19 Have Impacted the Computing Community

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ABSTRACT

As the COVID-19 pandemic began to unfold, reports of the impact on lives, public and private industry, and education systems began to emerge. Almost simultaneously, the long-standing pandemic of racism in the U.S. was called to the forefront. The policies, structures, and members of the computing community are not immune from the impacts of these dual pandemics. While we do not yet know the long-term effects on the computing community, several efforts have emerged to advance our understanding through data collection and analysis. This panel present preliminary findings from surveys conducted by multiple organizations that explore the impact of these dual pandemics on conditions of work and education in the computing community, with a focus on the impacts on populations that have been historically underrepresented in computing. The panel invites discussion about promising (and not-so-promising) practices that have emerged in response to these pandemics and next steps to support the computing community.

CCS CONCEPTS

• **Applied computing → Education**; • **Social and professional topics → Computing industry**; **User characteristics**.

KEYWORDS

broadening participation in computing, computing education, computing profession

1 SUMMARY

The COVID-19 pandemic quickly altered the landscape of our personal and professional lives. Most acute has been the effect of losing

lives to the virus. As nations, states, and localities issued shelter-in-place orders across the globe, those who were able largely shifted to work and study from home. Others faced entering workplaces with uncertainty and health risks; many others found themselves without work or income. Some companies pivoted to new products and ways of interacting with customers; others shuttered their doors. Individuals grappled with the psychological and social impacts of social isolation and contracted lives.

The computing community, in some ways, was well-positioned to weather many of these changes. Most computing work can be done remotely, and computing professionals have the skills to quickly adjust to a world where the digital dominates. Even so, the computing community faced (and likely will continue to face) challenges in their work and education environments as a result of COVID-19. Teachers and college faculty had to quickly shift to online course delivery [1] and some computing faculty have shouldered the additional burden of providing professional development and support to colleagues. Students, with various access to technology and spaces to work, also had to make the shift to online courses, and lost access to communal labs that support collaborative work. Computing students also experienced cancellations or alterations in their summer research and industry internships [2]. And even with a digital advantage, the computing industry saw hiring freezes and layoffs [3–5].

In the midst of all of these changes resulting from the COVID-19 pandemic, the murders of George Floyd, Breonna Taylor, and Ahmaud Arbery called attention to the long-standing pandemic of systemic racism and injustice against Black people in the United States, and reignited a movement calling for change. The computing community is not immune from this pandemic; structural and institutional racism is part of our educational systems, professional societies, academic and industry practices, committees, and networks. Many organizations have met calls for change with actions, ranging from posting statements affirming commitments to anti-racism, to providing implicit bias training, to revising policies and practices to remove structural barriers that prohibit the full participation of Black people in computing. These actions (and inaction) have the potential to not only impact organizations, but will also likely impact the individual members of the computing community in terms of the nature of their work and education, environment, sense of belonging, and well-being. These impacts and the perceived effectiveness of supports provided may potentially alter perceptions of computing and intention to remain in the discipline.

To systematically explore and understand the impacts of these dual pandemics, several organizations have devised studies that survey members of the computing community. The surveys sample across the computing ecosystem, including perspectives from K-12 teachers; post-secondary program leaders, educators, and students; and individuals in the computing workforce. This panel presents preliminary findings from these surveys on the impacts of COVID-19 and racism on the computing community, and includes a discussion of the practices introduced as a result of these dual pandemics that are promising for broadening participation of groups that are historically marginalized and underrepresented in computing.

2 PANEL STRUCTURE

This panel will provide perspectives on the impact of COVID-19 and racism on stakeholders across the computing ecosystem. The panel moderator will provide a video overview of the session, explaining the motivation for the studies explored and introducing the panelists. Each panelist will be featured in a 5 minute video to share highlights of the survey data from a particular perspective. Next, the moderator will open a live session for questions from the audience. The moderator will conclude the session by asking panelists to reflect on promising practices introduced as a result of these dual pandemics that are promising for broadening participation of groups that are underrepresented in computing, to identify possible next steps, and to share resources.

3 PANELISTS AND PERSPECTIVES

Insights on the impact of the dual pandemic is collaboratively explored in this panel through a partnership formed among 4 organizations that serve to support the computing community:

- **AnitaB.org** helps women make significant contributions to technical fields, providing support to organizations that employ women in technical positions and academic institutions training the next generation. Programs and awards highlight the accomplishments of women technologists, and events and communities enable women to establish networks. AnitaB.org administers Top Companies for Women Technologists, a national survey reaching over 500K technologists from 76 companies, and the Technical Equity Experience Survey (TechEES), which aims to accelerate and scale equity for women in technology worldwide.
- **NCWIT** convenes, equips, and unites over 1,700 change leader organizations to increase the meaningful participation of girls and women — at the intersections of race, ethnicity, class, age, sexual orientation, and disability status — in computing. NCWIT member organizations span the computing ecosystem: from small start-ups to large technology companies, from community colleges to research universities, from local K12 initiatives to national nonprofits.
- **STARS** is a national alliance of academic institutions with the mission to build capacity for research and practice, ignite action, and foster an academic community for broadening participation of groups that are underrepresented in computing. STARS operates as a community of practices, with faculty and student members working and learning together to take action for diversity, equity, and inclusion in computing.
- **CRA** strengthens and supports the research portion of the computing ecosystem. CRA works with doctoral-granting departments of computing, government, and industry research labs and government agencies to enhance computing research efforts. Focus areas include policy and government affairs, talent development including programs to widen participation in computing research, visualization activities to identify directions for research growth, and collection and dissemination of data to support decision making and program improvement.

Panelists include:

Dr. Quincy Brown is the Senior Director of Innovation Research at AnitaB.org. She is a co-founder of blackcomputeHER.org, a non-profit organization that provides education and support to Black women and girls in computing and tech, and is a co-founder of Black in Computing.

Dr. Beth Quinn is a senior research scientist at the National Center for Women & Information Technology (NCWIT) and Director of Strategic Initiatives for the Academic Alliance. An interdisciplinary social scientist, her work focuses on developing research-based interventions to broaden participation of women in computing.

Dr. Wendy DuBow is the Director of Evaluation and a senior research scientist at the National Center for Women & Information Technology (NCWIT) and affiliate faculty member in Women and Gender Studies at the University of Colorado. She conducts mixed methods social science research and evaluates the effectiveness of NCWIT's programs and resources.

Dr. Betsy Bizot is Director of Statistics and Evaluation at the Computing Research Association (CRA). She conducts the annual CRA Taulbee Survey of doctoral departments and works on other projects about data on computing in higher education, such as the 2017 Generation CS report on the undergraduate enrollment surge in computer science.

Dr. Jamie Payton (moderator) is an Associate Professor and Chair of the Department of Computer and Information Sciences at Temple University. She is the Director of the STARS Computing Corps, a national alliance of over 50 colleges and universities with the mission to broaden participation in computing, and a co-founder of the RESPECT conference, a venue for peer-reviewed research on diversity, equity, and inclusion in computing.

ACKNOWLEDGEMENTS

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