2020 NCWIT PARTNERSHIP REPORT

2020

Partnership

+

Perseverance

2020

2020 NCWIT PARTNERSHIP REPORT

PARTNERSHIPS DRIVE PROGRESS

Let's state the obvious: 2020 was not easy. Yet, in the face of a health crisis that is affecting all of our families, our communities, our places of work, and our way of life, and in the face of amplified demands for racial justice, we recognize that our shared mission has become more critical—to build more inclusive work cultures, even while remote; to increase availability of virtual learning, mentoring, and internship opportunities for students; to examine ways that everyday practices and systemic processes contribute to normalizing whiteness and perpetuating racism. And so, we all remain focused.

NCWIT could not raise awareness, increase knowledge, and empower action to make sure every voice is heard without our sponsors and members. For this, we humbly extend our gratitude for your help in bringing more voices to an inclusive table, putting people on proven paths, and moving entire communities toward measurable success in the influential field of computing, particularly in terms of innovation and development.

Thanks to your support, we are disrupting biases and stereotypes, enlisting majority allies and advocates, providing supportive communities for high school and college women in tech, and so much more. These efforts, utilizing NCWIT research-based strategies and recommendations, are yielding impressive results and sustained reform, and our community continues to grow and thrive, expanding membership last year by more than 25%.

In an effort to expand our virtual connections with members and non-members alike, in 2020 NCWIT pivoted from an in-person Summit to a completely online experience: Conversations for Change. This series created engaging, inspiring content that was also shared through the inaugural edition of our re:think magazine. This one-of-a-kind magazine reimagines what it means to be a change leader, and invites those who might be unfamiliar with our work to join us in our mission.

In response to the pandemic we also transitioned traditionally in-person programs such as Counselors for Computing and Aspirations in Computing to fully virtual experiences. While challenging, we realized unexpected gains as well, reaching more people and places than we were previously able.

Progress is happening because of your commitment and generosity. You are among other NCWIT organizations and their individual representatives who are working together across boundaries in recognition of the need to increase the meaningful participation of girls and women — at the intersections of race/ethnicity, class, age, gender identity, sexual orientation, disability status, and other historically marginalized identities.

And, we are compelled to continue working alongside you. Keep reading to learn more about just a few of the things we accomplished together in 2020.

Conversations for Change

One of the first large scale shifts of 2020 was the sudden transition from in-person to virtual events. This was true across almost all of NCWIT's programs. Aspirations in Computing award events, AspireIT programs, TECHNOLOchicas events, Counselors for Computing Programs, Workforce Alliance Inclusive Culture Construction Workshops the NCWIT Summit, and more -- all these had to be rapidly reimagined and recreated to meet the needs of our changing world.

NCWIT canceled the 2020 Summit and in its place launched a new series that would prove to be far-reaching and inspiring: Conversations for Change.

Speakers originally scheduled for plenaries and select workshops were foundational to what became a persistent and powerful model for sharing, inspiring, provoking, and encouraging ongoing conversations. The virtual format allowed NCWIT to reach individuals and organizations who normally do not have access to the member-only in person event. More than 750 non-members from more than 400 non-member organizations listened to, and learned from these nationally-recognized speakers.

Attendees were inspired by a wide range of change leader experts on topics like ageism, being differently abled, the urban Native American experience, fostering a culture of respect, and the consequences of racial bias in technology.

11 THOUGHT LEADERS

Ruzena Bajcsy
Ruha Benjamin
Jane Goodall
Temple Grandin
Colleen Lewis
Paul L. Marciano
Kyla McMullen
Cheryl Swanier,
Janine Vanderburg
Nicki Washington
Darryl Yong

+

1,769 attendees

The inaugural edition featured articles with content from Dr. Ruha Benjamin, Dr. Cheryl Swanier, Tommy Orange, Dr. Ruzena Bajcsy, and Brad Feld.

Expanding our reach

On the heels of the launch of NCWIT's Conversations for Change, and in the midst of the pandemic, we recognized the need to increase our digital communications. The interviews and stories we heard gave NCWIT an opportunity to rethink how we share inspiration, information, and resources more broadly and with a wider appeal. In 2020 NCWIT created a new thought leadership magazine that appeals to new audiences and advocates for a more diverse, equal, and inclusive technology industry.

re:think magazine provides insights on inclusion from experts who guide our shifting culture, from technologists whose innovations undoubtedly impact our daily lives, and from change leaders who use their positions of influence to remind us that inclusion changes what's possible.

It encourages readers to re:imagine the parts each of us play in creating a better future.

NCWIT members are putting our resources into action.

At NCWIT, resources are at the core of how we encourage social change. Based on sound social science theory and evidence, NCWIT resources provide guidance on how to serve as change leaders.

In 2020, NCWIT expanded our resource collection by 123, including new resources on virtual classrooms and learning in response to member needs for inclusive classrooms. We also grew our multimedia library with a new podcast series, Tech Culture Interrupted, available through streaming services.

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NCWIT's social science team has developed over 200 resources. In one year alone, NCWIT distributed over 141,000 hardcopy resources, with over 162,000 resource page views and 35,000 downloads.

98%

Almost all (98%) NCWIT member representatives indicated some level of activity related to increasing women's and girls' meaningful participation in computing, most of whom participated in several ways.

82%

82% of members report organizational change that affects employees because of NCWIT.

THE TECH INCLUSION JOURNEY

Digitizing Diversity

Computing is one of the most powerful and influential fields shaping society today. Yet women (diverse in race/ethnicity, class, age, gender identity, sexual orientation, disability status, and other historically marginalized identities) are severely underrepresented. This underrepresentation significantly impedes women's power and influence as innovators, leaders, and researchers in shaping the future. Decades of research and practice have shown why traditional DEI efforts have not improved this situation: in short, a lack of strategic attention to dismantling systemic barriers women face.

NCWIT has leveraged our well-respected resources and research to develop a unique scalable software platform (Tech Inclusion Journey™) that empowers corporate and post-secondary computing organizations to implement systemic, sustainable approaches to the creation of inclusive cultures.

83%
Saw an increase in attention being paid to whose voices are heard in meetings.

88%
Saw an improvement in their ability to create a more inclusive work environment.

93%
Saw an increase of workers thinking more about how subtle bias might be occurring at work.

20 organizations have begun implementing the TIJ. Initial promising results include:

1) the reduction of reports of bias in everyday organizational processes,

2) increases in hiring, retention and advancement rates for women in technical roles, and

3) increases in reports of ability to recognize and intervene in biased interactions and systems.

+

Qualitative data also illustrate that the TIJ shifts leaders' thinking in significant ways:

1) seeing themselves as "owning" the effort,

2) thinking more strategically about complex relationships between systems,

3) developing a habitual "spirit of inquiry," regularly asking questions about hidden biases in existing business processes.

25%

growth in AiC community membership

more than

20,000

women are in the AIC community today

"NCWIT is why I chose to stay in engineering. The resources and information that NCWIT provides to young women throughout the most formative years of their lives have impacted so many. I am so proud to represent the programs that built me."

91%

of surveyed AiC community members report a college major or minor in a STEM field

ASPIRATIONS IN COMPUTING COMMUNITY

Supporting high school, collegiate, and early career women

The COVID-19 pandemic has increased the isolation of AiC community members, an underrepresented and marginalized group already at risk of leaving their chosen career field. Students have lost access to critical educational and career opportunities, as well as social networking and support systems. Women in the AiC community are at a pivotal point in their lives, making long-reaching decisions about educational pathways and future careers. In 2020,

NCWIT accelerated its efforts to fill this gap before these students were forced to leave the creative, secure, and high-paying technology field. Progress we have made to date was, and is, at risk, as those who already have a tenuous foothold in the field may be compelled to make other choices. The computing discipline would be negatively impacted for many years to come if this critical talent, encouraged over many years, were to drop off the computing pathway due to the challenges presented by the COVID-19 crisis.

In 2020, the AiC Community increased by 25%, and those members had more opportunities for engagement. NCWIT offered webinars and other virtual gatherings that provide technical content, professional development, and access to resources (financial, mentoring, job, etc.), through our member organizations. NCWIT Workforce and Academic Alliance members found ways to connect with the AiC community now that they are foregoing many of their own outreach events, and many members hosted technical talks or other educational sessions. This allowed community members, colleges, and companies to connect directly with AiC community members.

91 percent of surveyed existing AiC community members report a college major or minor in a science, technology, engineering, or mathematics (STEM) field, 72 percent in computing or engineering specifically. These metrics serve as stark contrast to the 4% of all women who earn engineering or computing degrees.

In a needs-assessment fielded in 2020, respondents said due to the pandemic they need additional scholarship (96%), internship (94%), educational (92%), and job (93%) opportunities.

Inspiring high school and collegiate women

Aspirations in Computing differs from similar initiatives for girls and women in tech because it is research based and offers complementary programs that provide continuous engagement and ongoing encouragement at each pivotal stage of a woman's educational and professional development.

Critical to the holistic program are the awards NCWIT offers, recognizing high school students and the educators who encourage them, and college students as well.

NCWIT has presented more than 17,000 awards to young women in high school across 80 US affiliates, Puerto Rico, the US Virgin Islands, Guam, and all overseas military bases. Almost all (99%) surveyed awardees said receiving the award prompted them to feel more positively in a psycho-social area. A majority of respondents reported feeling more confident or positive about themselves, their technical abilities, and/or their future. One young woman wrote, "[I am more...] confident, not only in my computing abilities, but in my life year-round."

Educators play a pivotal role in encouraging 9th-12th grade students to explore their interest in computing and technology. NCWIT recognizes these educators for their outstanding efforts to promote gender equity in computing. Since 2011, more than 500 educators have been recognized and have received more than $225,000 in professional development funding to improve their computing education skills.

Christopher Kerr

2020 HIGH SCHOOL EDUCATOR AWARD WINNER

Before changing careers to become a Computer Science teacher, Christopher spent over 15 years in the IT and Computer Science industry doing everything from fixing computers, to graphic design, to software development. Now in his seventh year in the secondary level classroom, he brings his knowledge and experience to bear in creating exciting experiences for students. His professional goal is to help his students find where they belong in the wide world of technology. His personal goal is to create mindful young adults who will choose love over hate and happiness above all else. As he says to his students, "Stay curious!"

NCWIT Collegiate Award

The NCWIT Collegiate Award celebrates the outstanding computing accomplishments of women undergraduate and graduate students. But it's much more than that. It's a prestigious and rigorous competition that honors women who are already having impact in the world even though they have not yet graduated from college, and directly connects them to the larger NCWIT Community. To date, NCWIT has honored 75 women and their technical contributions to our world.

2020 winners included projects in areas such as:

Genomic sequencing and its relationship to autism

The use of deep learning to detect heart disease

Semi-automated hate speech identification

Smartphone microscope to diagnose blood diseases

An anonymous social network for abuse victims

Learning noise distributions to protect privacy

Biometric fusion for user verification

17,000

awards presented to young women in high school

C4C
GOES
VIRTUAL

Meeting school counselors where they are.

NCWIT's Counselors for Computing (C4C) program helps school counselors learn about computing careers in ways that enable them to explicitly guide and encourage girls and other students from historically underrepresented groups to pursue computing. Counselors are influencers. They advise and encourage students in their education and career aspirations, provide recommendations for course selections, and expose students to occupations through career fairs and internships.

If underrepresented populations are to get the exposure and encouragement they need to pursue computing, it is essential that counselors are up to date on the knowledge and resources necessary to guide effectively. They are critical allies based on their unique position in the pathways students take.

C4C not only influences the counselors it trains, but creates sustained capacity in participating schools because it helps counselors overcome barriers they themselves have identified (e.g., lack of awareness, limited teachers, stereotypes about who belongs in CS). C4C leaves each region it visits better prepared to build awareness and pathways in curricula by creating change leaders who support all students having equitable access to computing and other STEM classes.

More than 95 percent of Counselors for Computing participants surveyed report having a better understanding of computing and greater confidence to guide students toward computing education and careers. More than 96 percent reported that their advising practices have changed since attending a C4C workshop.

"C4C has inspired me to look broader at which students are registering for our computer science courses, it has challenged me to help students see their potential as a computer scientist."

95%

of Counselors for Computing participants surveyed report having a better understanding of computing and greater confidence to guide students

"So empowered to help my students. I haven't felt this encouraged in a very long time."

96%

reported that their advising practices have changed since attending a C4C workshop

15,000+

C4C has trained over 15K counselors and educators, with a potential reach to over 7M students

"Before attending the first C4C event, I honestly did not have an understanding of the different tech courses offered on my campus or in my district. I now know the difference between the courses and I understand the need for these skills, which helps shape my conversations with all levels."

Number of students potentially reached in one year:

2,596,308

TECHNOLOCHICAS

Reaching out to Latinas and their families.

28

events in 2020 that reached at least

1,100 attendees

As Marian Wright Edelman once said, "You can't be what you can't see." TECHNOLOchicas creates role models for young Latinas and their families, raising awareness about opportunities and careers in technology. Ambassadors from diverse backgrounds share their technology career experiences, turning broadcast television, local events, social media, and online videos into tools of inspiration. In speaking engagements, workshop volunteering, interviews, and outreach, TECHNOLOchicas' powerful stereotype-shattering encounters inspire young women to chart their own trajectories.

We collaborated with 18 different organizations for the TECHNOLOchicas events and added 213 new TECHNOLOchicas Ambassadors to our community, 25 of whom were college students new to the Aspirations in Computing Community.

ASPIREIT

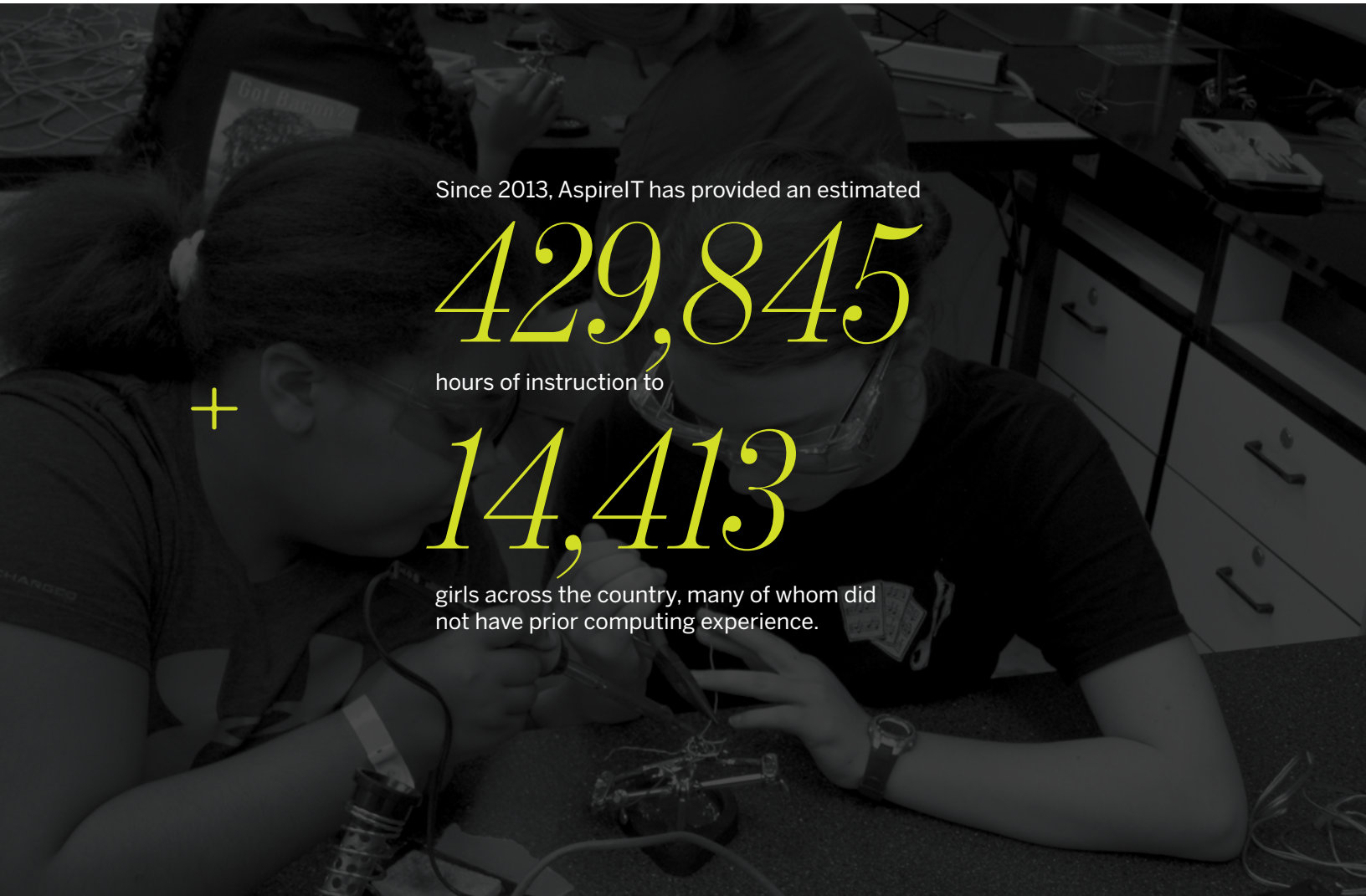
Sparking the imaginations of girls.

NCWIT AspireIT is designed to teach K-12 girls and young women programming fundamentals and computational thinking in fun, creative, and hands-on environments. AspireIT participants are ultimately encouraged to contribute their unique perspectives and ideas to future innovations, and its impact is undeniable:

In 2020, NCWIT helped programs move to virtual platforms to continue to educate and inspire girls to pursue computing.

Programs built kits to send out to participants, sent devices to participants without access to a computer, and found other innovative ways to support participants during this time.

Girls' confidence in computing skills grew by about 20% after attending an AspireIT program, and 75% of participants express an interest in taking more computing classes.



Since 2013, AspireIT has provided an estimated

429,845

hours of instruction to

+

14,413

girls across the country, many of whom did not have prior computing experience.

EXTENSION SERVICES

Moving the national needle on women in computing

In 2019, women earned only 21% of all computing bachelor's degrees from US nonprofit post-secondary institutions, but more than half (58%) of all bachelor's degrees. NCWIT's Extension Services (ES) program equips computing faculty and administrators with evidence-based strategies to develop, implement, and evaluate strategic plans for attracting women to their majors, retaining them through graduation, and creating inclusive and equitable departmental cultures.

Since its 2006 launch, ES has successfully worked with 129 undergraduate computing departments. The 32 earliest ES participants steadily increased the percentage of awards to women from 11% in 2008 to 23% in 2019. In contrast, computing departments not participating in ES remained relatively flat, gaining only 2% in the same time period. Extension Services schools awarded degrees to 3 times as many women in 2017 as in 2012.

"By creating targeted recruitment strategies based on the data obtained as an Extension Services client, we increased the percentage of women majoring in computing from 12 percent in 2007 to 22 percent in 2016."

-Tiffany Buckley, Associate Director, Department of Computer Science, The University of Texas at Austin

2020

MENTORING AWARD WINNERS

Dr. Mary Lou Soffa,
The University of Virginia

Dr. Donghee Yvette Wohn
New Jersey Institute of Technology

Dr. Susan Rodger
Duke University

Dr. Dave Levin
University of Maryland

Dr. Lenore Cowen
Tufts University

ACADEMIC ALLIANCE SEED FUND AND AWARDS

Celebrating post-secondary educators who go above and beyond

$775,450

To date, 70 member organizations have received a total of $775,450 in Seed Funds to grow their initiatives.

Post-secondary educators play a critical role in a woman's technical journey. NCWIT recognizes that these contributions can sometimes be overlooked and underfunded. Our Academic Alliance Seed Funds and Awards aim to highlight and reward educators who go above and beyond their already hectic schedules.

NCWIT provides Seed Funds for projects that support inclusivity within computing and IT programs. We also recognize faculty members who combine outstanding research and excellence in mentoring for undergraduate and graduate students alike.

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