re:think

insights on inclusion

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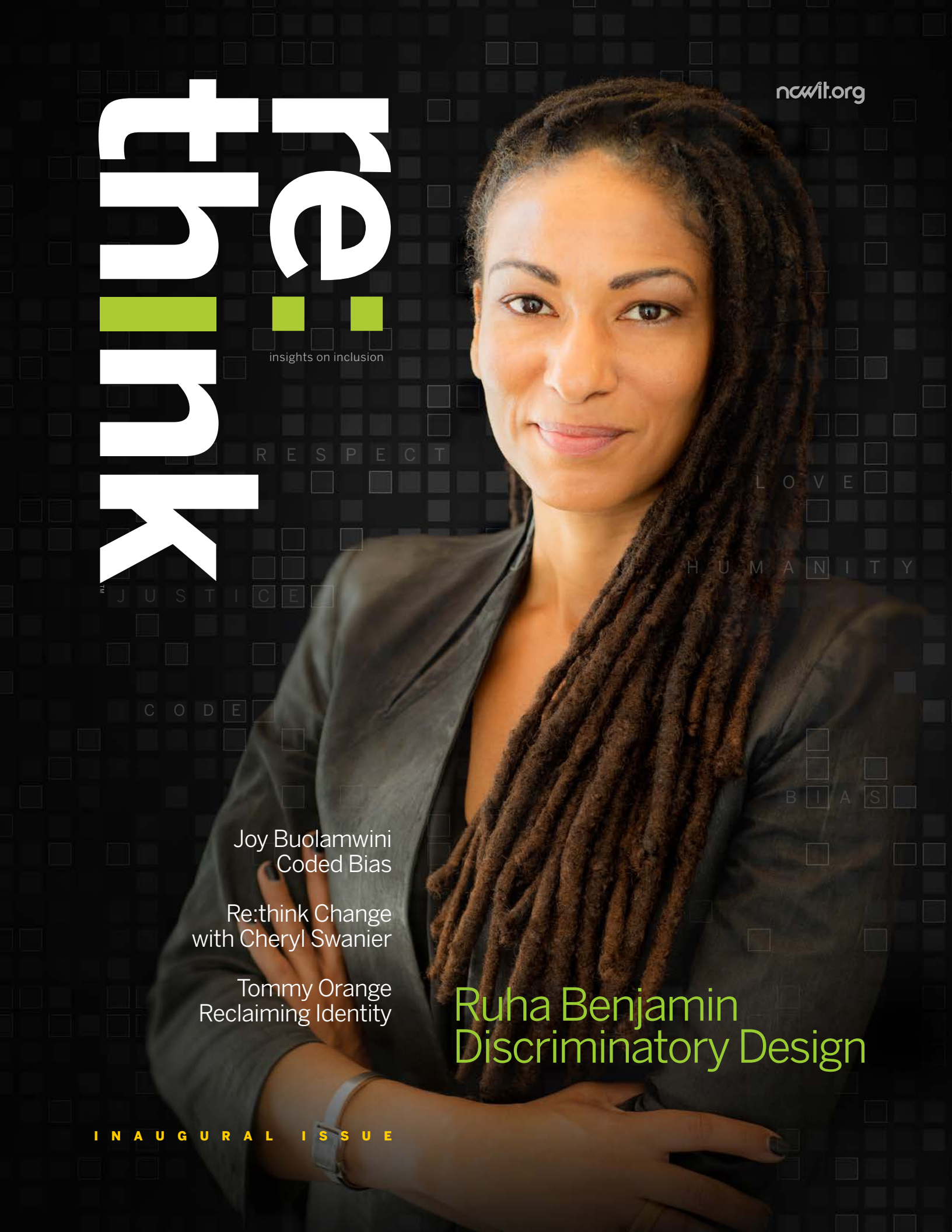

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INAUGURAL ISSUE

26% of the computing workforce were women in 2019

Learn more at **ncwit.org/bythenumbers**

re:think

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Welcome to the first issue of re:think magazine, created by NCWIT

We invite you to re:imagine who innovates, educates, and inspires the technologists of the future. Today's climate of isolation coupled with amplified demands for racial justice gives us the opportunity to re:think technical cultures both inside and outside our organizations. Re:imagine what it means to be a change leader, and the part we can play in creating a better future.

Drawing on *NCWIT Conversations for Change: an online thought leadership series* for this first issue, we invite you to not just think, but re:think and delve deeper into the world of biased bots and altruistic algorithms, the role of technology as both a conservative and revolutionary force, Native American experiences and re:claiming narratives, and more.

Here's the common thread: it's imperative that we examine the human values, assumptions, desires, and worldviews that shape technology and its creators. We have a responsibility to ensure diversity because otherwise, many people are forced to live inside someone else's vision of the future.

By confronting some hard truths, we can create a world that is more just, more inclusive — a world that enriches our hearts and minds. Let's use the spirit of inquiry to become more informed and re:think what we believe about technology, inclusion, and culture.

— **LUCY SANDERS,** NCWIT CEO AND CO-FOUNDER

NCWIT's mission *is to increase the influential and 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 — in the field of computing. We do so by working with more than 1,400 organizations nationwide across the entire computing ecosystem (K-12 though career), helping them make systemic changes within their own organizations.*

re:think

CHANGE

WITH DR. CHERYL SWANIER

Dr. Cheryl Swanier knew she had a passion for leadership, and she was committed to pursuing her dreams, despite the obstacles she faced as a Black woman in the computing field. In this piece, excerpted from her presentation at *NCWIT Conversations for Change: an online thought leadership series*, Dr. Swanier shares the strategies that helped her to keep going, and some of the rewards she discovered along the way.

I was born in a country town in southwest Georgia, and I grew up in a home of educators. My dad was a math and science teacher, and my mom was a first-grade teacher, so it was understood that we would go to college. After I received my Bachelor of Science in Computer Science, I went on to The Ohio State University (OSU) for graduate school, and I completed my Master's in Computer Science at the State University of New York (SUNY).

I worked in the tech industry for about 13 to 15 years as a computer programmer, first at IBM and then at a well-known credit card processing company, Total System Services (TSYS). While I was working in the tech industry, it was always my desire to become a CEO. I wanted to be the CEO of a big tech company. But as I worked in different places, my dreams began to fade, and it just didn't seem like my dream was attainable. So I decided, "I think I want to be a college president." I started to inquire about what I would need to do to become a college president, and someone advised me that I needed to get my doctorate in Education and focus on higher ed administration.

And then I decided, I've reached this glass ceiling. I'm not going any further than I am. So I transitioned, I reinvented myself, and I became a high school math teacher. >

So there I was in K-12, teaching high school math. I've always had a love for mathematics, science, and computer science. But I said to myself, "Now how am I going to become a college president sitting on the South Side of Columbus teaching at-risk kids?"

Then one day I was at a reception and saw this guy I went to college with, and I asked him what he was doing. He said, "Oh, I'm the Provost of such-and-such university." And I was like, wow. If he's the provost, I'm doing something wrong. I should have been president a long time ago.

And so he asked me to give him my resume, and the next week I was interviewing for a job at Fort Valley State University. And after the interview, they hired me on as an Associate Professor. From there, my career just took off.

The students at Fort Valley State had not been involved in any type of organization that relates to their discipline, Computer Science. I re-established the Association for Computing Machinery (ACM) chapter there, and we started going to conferences. We started presenting research and posters at conferences. I had one student who had never flown on an airplane, whose first conference was at Microsoft in Redmond, Washington. Today, that particular student is a senior computer programmer. Working at Fort Valley State offered me the opportunity to do a lot of outreach, and it helped me to work with students from underrepresented groups and with the local high school students.

After leaving Fort Valley State University, I applied for a position at Claflin University and was hired as Chair of the Computer Science Department. And so, in a nutshell, that's been my journey.

I will say this: the journey to the PhD was not an easy one. I clearly recall when I was working on my Master's at OSU that I was the only [Black woman], and I remember suffering from imposter syndrome, both at SUNY and at OSU — just not feeling like you're good enough, and believing that others perceive that you're not good enough, that you can't quite make the mark.

the key thing is having that support system to help you push through those barriers, the barriers of isolation

But the truth of the matter is, you know we are good enough. Because if we were not good enough, we would not have made it there. And so the key thing is having that support system to help you push through those barriers, the barriers of isolation, the barriers of not feeling good enough, like you can't do this. Because the reality is, you can do it. You are just as smart as your classmate that is sitting next to you.

So I learned how to strategize. I learned how to navigate grad school. And I learned how to be successful. I learned how to walk up to my classmates and say "Hi, I'm Cheryl. Can I be a part of your study group?" Or I'd initiate conversations about a homework assignment, just to discuss it so that I could get a better conceptual idea of the problem that we were trying to solve. It's good to have support systems in place, so that you don't have to deal with the barriers of isolation and impostor syndrome.

When I was at OSU, the first day I met my adviser, who happened to be a white male, the first words out of his mouth were — and I will never forget this, and I will carry this to my grave — "People of your color come into our program and you don't succeed. You are deficient in this, and you are deficient in that."

I felt like the scum of the earth. I'm just this 21-year-old country girl coming from South Georgia, and I flew by myself on a little crop duster to Atlanta and from Atlanta to Columbus, Ohio, to be met with that type of opposition.

I never gave up. I didn't quit. I kept going.

I was always taught to respect my elders, and I was never the type of student that would talk back or say anything. I just sat there and took my tongue-lashing, if I could call it that. And from that moment forward it set the tone for the rest of my journey at The Ohio State University.

But I persevered, I got through it. I never gave up. I didn't quit. I kept going. And I am where I am today because I didn't quit.

And I must say this, and I have to give NCWIT kudos for this, because it was at NCWIT that I met a Vice President from OSU. I was able to share with this Vice President my struggles at OSU, and she was floored when I shared my story with her. A few years later, The Ohio State University brought me back to the campus as a distinguished speaker in the College of Engineering, and I had a meeting and luncheon with the president of the university. So I believe that was their way of saying to me, "I'm sorry."

One project that I'm working on right now, one that is very close to my heart, got its start at another NCWIT Summit. Margot Shetterly was one of the keynote speakers, and I was just so inspired by her book, *Hidden Figures*, about the Black women mathematicians who worked at NASA during the early days of the space program. And I was sitting in the audience thinking she needs to do a book about me, and women like me. She needs to do a book about Black women in computing.

I never got a chance to have a one-on-one conversation with her at the actual Summit, but it just so happened that we were flying out on the same day, and I saw her in the airport terminal. Bold person that I am, I walked over to her, and I said, "Hi Margot, I'm Cheryl Swanier from Claflin University, and I really love your book, but can you write a book about me and my colleagues, about Black women in computing?" And she said, "No, Cheryl, you write your own narrative. You tell your narrative. No one can tell your narrative better than you can."

Some months later, the inspiration came for *HERstory: Untold Stories of Black Women PhDs in Computing*. And I began to share the idea with my close computer science colleagues. I said, "We have to do this. We have to tell our stories." And we are here today. The book includes research, but it also focuses on the personal stories of Black women PhDs in computer science. They tell their stories about their path to the PhD and some of the struggles that they actually face. We talk about some of the contributions that these Black women PhDs in computing have made to computer science, both in academia and in industry. And we also discuss the need for changing the face of technology, and increasing the number of underrepresented groups in computing. Because no one can tell these stories better than we, ourselves, can. □

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RUHA BENJAMIN DISCRIMINATORY DESIGN

Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it.

- Excerpt from Arundhati Roy's essay "The Pandemic as a Portal"

This image in particular—dragging the carcasses of our prejudice and avarice, our data banks and dead ideas—resonates.

We must move through this portal as individuals, communities, and institutions; and at all levels we have this opportunity to either drag outmoded ways of thinking and doing things with us, or we can begin to imagine and craft a world that is more habitable, more just and joyful. >

human values, assumptions, desires, and world views that shape technology are often left unexplored

No technology is preordained, but rather grows out of the broader context that makes some inventions appear inevitable and desirable. The imagined user is gendered, raced, and classed without gender, race, or class ever being mentioned. Code words in this sense encode the interlocking systems of inequality as part of the design process. Precisely by ignoring social reality, tech designers will almost certainly reproduce it.

From everyday apps to complex algorithms, technology has the potential to hide, speed, and deepen discrimination, while appearing neutral and even benevolent when compared to racist practices of a previous era.

Because if we are not careful, what will likely happen is that many dead ideas will be repackaged as new and innovative tech solutions for the problems we face.

But we can avoid this.

First by recognizing that there are two popular stories we currently tell about technology—that tech is either going to save us or slay us. That it will take all of the jobs and make everything more efficient, or precipitate our undoing. Silicon Valley loves the utopian vision because they evoke it to sell gadgets. Hollywood loves the dystopian version because it helps sell tickets. Both are flawed.

These versions may seem like opposites on the surface, but they share an underlying logic that technology is in the driver's seat, harming or helping us.

But the humans behind the computer are too often missing from this view. The human values, assumptions, desires, and world views that shape technology are often left unexplored.

At the moment only a narrow slice of humanity is doing the shaping.

So how do we contend with a system whose principal players have a vested interest in perpetuating the status quo?

What I would like us to consider is what it means for more people to participate in imagining and building the digital and physical world we all inhabit, and what is the responsibility of those in leadership positions to broaden participation?

Racism is productive. Not in the sense of being good, but in the literal capacity of racism to produce things. A value to some even as it wreaks havoc on others. Many of us are still taught to think of racism as an aberration, a glitch, an accident, an isolated incident, a bad apple in the back woods and outdated rather than as innovative, systemic, diffuse, an attached incident. The entire orchard in the ivory tower, in the tech industry, forward looking, productive.

In sociology race is understood to be socially constructed, but we often fail to state the corollary—that racism constructs.

It's important to think about the ways that race and technology shape one another because more and more people are accustomed to thinking and talking about the social and ethical impacts of technology, but that's only half of the story.

Social norms, values, and structures all exist prior to any given tech development.

So, it's not simply the impacts of technology that we need to be concerned about, but the social input that makes some inventions appear inevitable and desirable.

Which leads to another provocation that imagination is a contested field of action, not an ephemeral afterthought that we have the luxury to dismiss or romanticize, but a resource. A battle ground, an input and output of technology and social order. In fact, we should acknowledge that many people are forced to live inside someone else's imagination.

One of the things we have to come to grips with is how the nightmares that many people are forced to endure are the underside of elite fantasies about efficiency, profit, security, and social control. Racism among other axes of domination, including sexism, ableism, classism helps to produce this fragmented imagination where we have misery for some, monopoly for others.

This means that for those of us who want to construct a different social reality, one that's grounded in justice and joy, we can't only critique the underside—who's harmed or left out by the current structures—but we must also wrestle with the deep investments, the desire even that many people have for social domination.

So how do we contend with a system whose principal players have a vested interest in perpetuating the status quo?

The current tech workers' movement, which includes students and workers across many disciplines and institutions, can draw from past organizers' experiences and learning to navigate the contradictions and complexities of organizing in tech today, which includes building solidarity across race and class.

Until very recently, I think a lot of people wanted to believe that technology was neutral. When you say, "No, it's situated. Technology grows out of a particular worldview, desires, aspirations," that brings it down to earth and may seem to pollute it or corrupt it.

But just because something is situated in the social world, doesn't mean it can't be a very good thing. Especially when you create technology out of an ethic of love and care for the people that are going to be engaging with it, that makes you much more deliberate and conscious about what you are creating.

For that reason, we also need a slower approach to technology, because one of the reasons we have discriminatory design is due to the market logic of "faster, better, cheaper" to beat competitors. >

discriminatory design is directly tied to the pace and the market logic of faster, better, quicker

If those are the animating forces—speed, competition, and profitability—that doesn't allow time to consider all of these questions about equity and discrimination. That requires time. So moving forward, we need to slow down if we really care about how these things are going to circulate in the world.

So one way, perhaps, to practice love when we think about tech, design, and imagination is that love should allow us to slow down out of a sense of caring for how these things are going to circulate in the world.

practice love when we think about tech, design, and imagination

So here is a final proposition. If it is the case that inequity and injustice is woven into the very fabric of our society, then that means each twist, coil, and code is a chance for us to weave new patterns, practices, and politics. The vastness of these problems will be their undoing. If this pandemic is a portal, my hope is that we use this time to imagine and craft a world in which we can all thrive. □

Ruha Benjamin *is a Professor of African American Studies at Princeton University and author of People's Science: Bodies and Rights on the Stem Cell Frontier (Stanford University Press). She has studied the social dimensions of science, technology, and medicine for over fifteen years and speaks widely on issues of innovation, equity, health, and justice in the U.S. and globally.*

Playback Ruha Benjamin's presentation from NCWIT Conversations for Change: an online thought leadership series *at* ***ncwit.org/RaceFutureVideo***

3% of the computing workforce were African American women in 2019

Learn more at **ncwit.org/bythenumbers**

JOY BUOLAMWINI

THE POWER OF STORYTELLING FOR SOCIAL CHANGE

Artificial intelligence (AI) is increasingly interwoven into the technology that shapes our daily lives. Its proponents argue that involving AI in a wide range of situations can lead to increased safety, improved efficiency, and more neutral decisions. However, a growing body of research shows that because AI relies on machine learning processes that are programmed by humans, artificial intelligence often ends up replicating—and even amplifying—biases around race, gender, and other dimensions of identity.

The Algorithmic Justice League (AJL) is an organization dedicated to "leading a cultural movement towards equitable and accountable AI." Through research and advocacy, they are working to ensure that AI is developed and used in transparent ways, and that the uses of AI are subject to oversight in order to prevent civil rights violations, discrimination, and other forms of harm. The organization also advocates for equitable AI based on affirmative consent, meaning that people should be made aware when they are interacting with AI, and have the opportunity to give or withhold permission for the use of their personal data. >

Photo credit: Steve Acevedo

“Why isn’t my face being detected?”

Joy Buolamwini, AI researcher and founder of the Algorithmic Justice League, describes herself as a poet of code. As the AJL’s website explains, “We believe in the power of storytelling for social change. We tell stories that galvanize action with both research and art. We follow a scientific approach to our research, experiments, and policy recommendations. We rely on art, freedom, and creativity to spread the word, generate awareness about the harms in AI, and amplify the voice of marginalized communities in today’s AI ecosystem.”

As a graduate student, Buolamwini worked on a project at the MIT Media Lab called the Aspire Mirror, which incorporated generic face detection software as part of an application that projected digital masks with positive messages onto a user’s reflection. However, Buolamwini ran into a problem when testing the program: the software would not detect the presence of her face unless she wore a white mask. This was far from the first time she had encountered similar issues with AI and with facial recognition software in particular. As an undergraduate, her work on a robot that could play “peek-a-boo” stalled when the robot could see her roommate, but not her.

“Why isn’t my face being detected?” Buolamwini asked in her viral 2016 TED Talk. “Well, we have to look at how we give machines sight,” she explained. “Computer vision uses machine learning techniques to do facial recognition. So how this works is, you create a training set with examples of faces… And over time, you can teach a computer how to recognize other faces. However, if the training sets aren’t really that diverse, any face that deviates too much from the established norm will be harder to detect.” The good news, she went on, is that human input is needed to create the training sets, “so there is an opportunity to create full-spectrum training sets that reflect a richer portrait of humanity.”

Identifying and correcting the bias built into AI is of critical importance. Indeed, it is a matter of life or death. As Buolamwini wrote in a 2019 article for TIME Magazine, “There’s no shortage of headlines highlighting tales of failed machine learning systems that amplify, rather than rectify, sexist hiring practices, racist criminal justice procedures, predatory advertising, and the spread of false information.”

In her TED Talk, she noted, “Law enforcement is also starting to use machine learning for predictive policing. Some judges use machine-generated risk scores to determine how long an individual is going to spend in prison.”

After listing numerous cases where biased AI has been shown to have a discriminatory effect, the AJL website concludes, “The examples are endless.”

Fortunately, there are many people working on solutions. The AJL says, “We know making change is a team effort. Fighting for algorithmic justice takes all of us.” When a major vendor of facial recognition software for law enforcement attempted to discredit Buolamwini’s work in 2019, a group of more than 70 “Concerned Researchers” from universities around the world banded together to affirm her results. In June 2020, an article in Quartz cited Buolamwini’s work on the Gender Shades Project, in collaboration with the MIT Media Lab and Google Research Scientist Timnit Gebru, as central to IBM’s decision to stop developing facial recognition technology due to its potential uses for “mass surveillance, racial profiling, [and] violations of basic human rights and freedoms.”

While there is much work to be done to eliminate bias in AI and ensure its responsible, ethical use, Buolamwini and her colleagues have hope. “For some time the Algorithmic Justice League has been me, a mask, and a shield,” Buolamwini said. “I am so glad we now have resources to start building a team and creating a world with more equitable and accountable AI.” In the words of the Algorithmic Justice League, “We want the world to remember that who codes matters, how we code matters, and that we can code a better future.” ☐

Who codes matters. How we code matters. And, we can code for a better future.

__Joy Buolamwini__ is a member of the NCWIT Aspirations in Computing Community. She received the NCWIT Collegiate Award in 2016. Learn more about her work with the Algorithmic Justice League in the film Coded Bias, released in January, 2020.

The Aspirations in Computing Community is vibrant and dynamic. With nearly 20,000 technical high school, college, and early career women, it is the largest of its kind.

Support and learn more about Aspirations in Computing at ***ncwit.org/aspirations***

2% of the computing workforce were Hispanic women in 2019

7% of the computing workforce were Asian women in 2019

Learn more at **ncwit.org/bythenumbers**

Brad McLain, PhD
Catherine Ashcraft, PhD

this can be an opportunity for our cultural norms and values to respond for the better

By now, you may have noticed it: an apparent "we're in this together" vibe. On the street, in the neighborhood, on TV, and yes — even on conference calls — people are often friendlier, waving, and taking a moment. Many conversations these days begin with or are dominated by COVID-19 concerns — a sharing and comparing of our journeys through this. On one hand, in a most ironic way, this social isolation is increasing our awareness of our shared culture and our need for connection. Amidst all the challenges and fears we are experiencing, we miss each other! Could it be that herein lies a hidden opportunity to build more inclusive future cultures at work — while we are all at home?

On the other hand, the "we're in this together" vibe may not be all that it seems. While it can create an important sense of camaraderie, it also glosses over important differences. As this crisis unfolds, it is increasingly true that "we" are experiencing this pandemic in many different and often hidden ways. Many people are losing their jobs, with or without savings to sustain them. Many people have loved ones whose health is more vulnerable or already in jeopardy. Many people have loving homes in which to shelter in place, but many do not. Many people have access to the internet and technologies that make remote work possible, while many do not. What's more, this type of crisis tends to amplify existing inequities, especially those related to race, class, language, ability, and other marginalized identities. Structural and environmental biases, racism, and income inequality make it disproportionately difficult for these groups to work remotely, and to navigate and benefit from health and financial systems, putting them at greater risk for both exposure to the virus and to its economic and social ripple effects.

Now, as we hunker down in social distancing, it is important to recognize that the norms associated with both our workplace cultures and society at large are changing. In our research at NCWIT, we define culture as a shared set of norms and values. Culture is, if nothing else, dynamic. Our experience of culture is a conversation between ourselves and the larger communities we belong to. >

And, that conversation is rapidly evolving. If we are alert and attend to the differences noted above, this can be an opportunity for our cultural norms and values to respond for the better towards creating more inclusive cultures, now and in the future. Here are ***three suggestions*** for doing so:

1.

Recognize we're in this together, but it's NOT the same for everyone.

At NCWIT, we talk a lot about the importance of attending to and interrupting everyday biases. Being attentive to different and nuanced ways these biases are playing out now is all the more important. We can start by recognizing and interrupting the subtle biases that lie behind a simple interpretation of being "in this together."

What Individuals Can Do: Seek to understand the experience of our colleagues and their families. That means employing a "spirit of inquiry," taking the time to ask and to listen. This could be in the first few minutes of team meetings or planned informal virtual get togethers. It also means intentionally seeking out information about various groups' experiences (for example, communities of color; socioeconomic status/income inequality; LGBTQ+ communities; people with disabilities— to start).

What Organizations/Leaders Can Do: Personally check in with direct reports and open a conversation about particular needs during this time. Some of these might include: 1) ensuring adequate access to paid sick leave policies, 2) letting people take time off without penalty, 3) providing translation services where needed, 4) providing financial and emotional support to the employees and their families most hard hit, and 5) ensuring all employees have access to remote work technologies. In addition, it is likely that social distancing orders will be eased before the threat is really under control, which may be even more stressful and dangerous for those with vulnerable health status and/or vulnerable family members. Be flexible and conscientious about ongoing risk rather than expecting a hasty return to normal.

2.

Going remote requires us to see each other with new eyes.

In tech, many of us are used to working remotely, but now more of us than ever are doing so. On video calls we are now seeing more of each other's lives. Whether it's as simple as catching surprising glimpses of someone's home in the background or children coming to sit on your lap in the middle of the meeting, we are seeing many more of our intersecting identities and blurring traditional boundaries between our personal and professional selves. Understandably, this introduces risk and vulnerability — especially for populations marginalized by race, gender expression, sexual orientation, or anyone who may not have been able to bring as much of their full selves to work in the past, but who now suddenly find themselves in this reality. This, however, also brings opportunity.

What Individuals Can Do: This exposure of multiple identities requires that we appreciate and learn about each other in new ways. We need to see each other with compassion and empathy, and establish norms that come to view such vulnerability not as a weakness — but as a faculty that invites us to a deeper understanding of our teams and perhaps of ourselves in the process.

What Organizations/Leaders Can Do: This alternate view of vulnerability becomes especially powerful when exhibited by leaders. It also has the power to establish a new norm when we all return to work — that is, to continue to value the blurring of the personal and the professional. Doing so can be a significant step toward building more inclusive cultures given that artificial distinctions between these two arenas have long been a workplace barrier for women and other underrepresented groups (e.g., having to downplay conversations about family events or concerns).

3.

Recreate your culture by design rather than default.

As we said earlier, our experience of culture is a conversation between ourselves and the larger communities we belong to. Given this crisis, that conversation is rapidly evolving and will ultimately reshape our cultures, whether we attend to this process or not. So, now is the time to be intentional about how that happens.

What We All Can Do: Enter the conversation. Leaders who start the conversation by forefronting their own vulnerability can make this happen. What does this look like? It begins, as noted above, with sharing our mutual experiences, but then evolves into an on-point discussion about what our changing norms and values are — and what we want them to be. For example, the adjustments being made now to improve remote work can be preserved to support your workforce after this crisis is over. Likewise, the work done to see each other with a "spirit of inquiry" can help us establish new norms that enable us to bring more of ourselves to work and to remain more curious and caring about each other's lives. There is no predicting where this conversation will go, but wherever it goes, it signals to your team that we are in this together while also acknowledging our differences and that by entering the conversation together, we can navigate the stormy seas ahead. And that, friends, could be a pretty good start towards a more inclusive culture for here and now — as well as long into the future. □

Catherine Ashcraft is a Senior Research Scientist with the National Center for Women & Information Technology (NCWIT) at the University of Colorado Boulder. Her research focuses on issues related to gender, diversity, and technology; organizational change and curriculum reform; and popular culture, media representations, and youth identity (especially as it relates to race-ethnicity, gender, class, sexuality).

Brad McLain is a social scientist and researcher with NCWIT. He also co-directs the Experiential Science Education Research Collaborative (XSci) at the University of Colorado Boulder. Brad's research focuses on identity development, diversity and inclusion in relation to STEM learning and career pathways, including the nature and impacts of extraordinary experiences and how such experiences may change our sense of self and life trajectories at different ages.

Check out Episode 2 of the Tech Culture Interrupted podcast at:
ncwit.org/TechCulturePodcast

The process that brings anything to its current form, chemicals, synthetic, technological or otherwise, doesn't make the product not a product of the living Earth. Buildings, freeways, cars, are these not of the Earth? Were they shipped in from Mars, the moon? Is it because the process where they were manufactured? Are we so different? Were we not, at one time, something else?

Tommy Orange

INSIGHTS on his book THERE THERE and the reclamation of identity.

Native people have been stereotyped and depicted in a very singular way, which is often historical and sad and digestible. I didn't want the narrative to continue to be a sad, gone people, so I decided that having a lot of characters is one way of speaking against that stereotypical narrative.

Having their identities be complex was a way to introduce something that I didn't see depicted in books or in movies when I was a kid. There's still a lot of historical stuff being pushed, and I grew up in Oakland, which was a very mixed community, a lot of interracial marriages producing a lot of kids like me, and I grew up on a street that everyone was half of one thing and half of another. >

In the Native community, there are so many different complexities to think about—having to do with blood quantum, having to do with tribal proximity. Did you grow up on the reservation? Did you grow up in the city? So I wanted to explore the range of what it means almost to humanize something that's been dehumanized.

I had a passion for it because I saw it so much in the community, and I had lived it so much myself, and I wanted to try to render it for the book because it was interesting to me, and ultimately, it ended up resonating with a lot of people that aren't Native because identity is a core aspect of our humanity. Identity is a social phenomenon, but it's social in two different ways. It's how the world sees you and how you see yourself. And there's tension between those two things.

For Native people, we have often been defined by the outside, so we especially have that conflict within us. How much do we believe in what we are? And how much is it believed from the outside? There are even other

A lot of the book is from my own experience and from experiences I have had in the Native community in Oakland. When I started working on the book, I was a brand new father, working full time, and I would wake up every day and just write as much as I could before having to go to work. In that first year, four or five of the central characters emerged, and I ended up reading parts of that work to a group of Native youth, under a Native youth suicide prevention grant, and that was probably the scariest reading I ever did. Because Native youth, or any youth, are scary to read to, and I didn't think they would care. But they had a really emotional reaction to the reading and a lot of questions, and that was really important for me at the beginning of the book, to really feel like I was doing something that mattered. If it could reach the Native youth, then that was a really important point for me to continue.

I grew up pretty immersed in technology. I grew up playing video games. I experienced having no phones or only video games and TV as technology, and then I was becoming an adult when the

I was becoming an adult when the internet was first born, and so I have always been fascinated by technology.

Native people that will tear each other down and say it's not enough or you don't qualify. It also comes with a history of people who shouldn't be identifying and sort of stealing the romanticized version of our culture to feed their own vanity.

internet was first born, and so I have always been fascinated by technology.

I purposefully wanted it in the novel because Native people have been depicted exclusively historically, and it does a lot of damage if you only see yourself in the past. You are already gone. How can you develop as a human? How can you develop an identity if you feel like the only depiction of you is somebody already gone? It makes you feel like a ghost.

So I wanted to have them interface with technology purposefully so they could feel as contemporary as possible. I wanted to explore how different people have relationships with technology now. I was trying to find interesting and human and emotional ways that people use technology.

All of the Native people in my life have completely embraced technology, but it's not the way that we have often been seen and depicted, so it was a kind of resistance to the way we have been defined from the outside as being old and gone and not interfacing ever with technology.

How can tech help people reclaim their narratives?

We started a digital storytelling lab at the Native American Health Center, called Story Center. There's a lot of language and history and storytelling around different tribes, and the way we think of ourselves as storytellers is already something the community self-identifies with. We also knew these stories were not out there, the Oakland Native story. >

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We think of technology and innovation as its own thing, and that it's not related to equanimity, but it is.

The beauty of this storytelling model is not that you're making short videos, interviewing people about their lives, and then cutting it to whatever B roll you decide. You actually teach them skills—how to write a script, and then you gather in a circle, you tell their story, and then you teach them digital video editing with software. And by the end of a three day process, they come out with a powerful, short video that they themselves put together.

We worked with all sorts of marginalized groups all over the country, and it became clear to me how important it was to teach people production skills, because of YouTube and TikTok and how much people produce and upload their own videos.

At some point, I realized that to teach people these skills with a mobile lab with expensive equipment was the equivalent of give a man fish, teach a man to fish, that whole parable. It was the equivalent of telling them that, and then all the places to fish are in rich people's backyards.

Technology, race, and class have always been in a conversation together. People have access to things when you have more money or are in certain families or certain classes. It's just part of a fact, and that ends up translating to jobs, and a lot of different aspects of life and accessibility. And I don't think it's always been put in those terms. I think we think of technology as innovation and it's its own thing, and it's not related to equanimity, but it is.

We started using a free cloud-based video editing software so if the person wanted to continue editing after learning the skills, they could — using the free version. They could go to the library and continue to use those skills and continue to produce video.

And that pivot from having an expensive lab and teaching people in a three day workshop and having the experience, while it was a powerful experience, it was more powerful to teach them something that they could then access later. We were trying to give voices to people that didn't always have voices.

A really powerful part of doing digital storytelling is helping nonwriters learn how to write and express something, some truth that they have in them. A lot of times we are natural storytellers, when we don't think anyone is necessarily listening, the way that we tell narratives about ourselves comes out like stories, when we are talking to our friends, when we are talking to our family. I think everything is run on narrative. We have a national narrative, and we have individual narratives, and we have community narratives, and it's a battle for which story is the best, which are we convinced by, and which do we run with.

And we take narrative threads from the bigger narratives, and we wrap them around our own, and some of us are more invested in the national narrative and less in our own, and on the spectrum everywhere between, the way we think of the stories that we hear, the stories that our family always told us, the stories that happened to us and how we integrate them into our own identities. It's an interconnected relationship that's unending, and I think the ways it can play out in fiction is really fascinating to me. ☐

Technology, race, and class have always been in a conversation together.

Tommy Orange *is the author of the New York Times bestselling novel There There, a multi-generational, relentlessly paced story about a side of America few of us have ever seen: the lives of urban Native Americans. There There was one of The New York Times Book Review's 10 Best Books of the Year, and won the Center for Fiction's First Novel Prize and the Pen/Hemingway Award. There There was also longlisted for the National Book Award and was a finalist for the Pulitzer Prize.*

Brad Feld
NCWIT, Chair Emeritus
Foundry Group, Partner
Techstars, Co-founder

The path to equitable tech

My focus on gender equity in technology and entrepreneurship began in 2005 when I met Lucy Sanders. We were introduced by a mutual friend who thought I might be helpful to Lucy. We met on one of my random days, where I spend 15 minutes with about a dozen people during the day.

Lucy sat down at my conference table and said, "I've started a non-profit company to get more girls and women involved in computer science. It's not for reasons of gender parity, but that's the outcome. If we want to stay innovative and competitive as a country, we need to get many more people involved in computer science. The ideas of half the population are not being heard. We will invent things differently, and we will invent different things when the people who make our products are as diverse as the people who use them."

I responded, "You had me when you said innovation."

Lucy asked me to be the founding chair of NCWIT. I agreed, thinking I knew a little about gender equity issues in tech. My parents are equal partners in their relationship, and my wife Amy Batchelor and I are equal partners in our relationship, so I felt comfortable as a peer to strong women in my world.

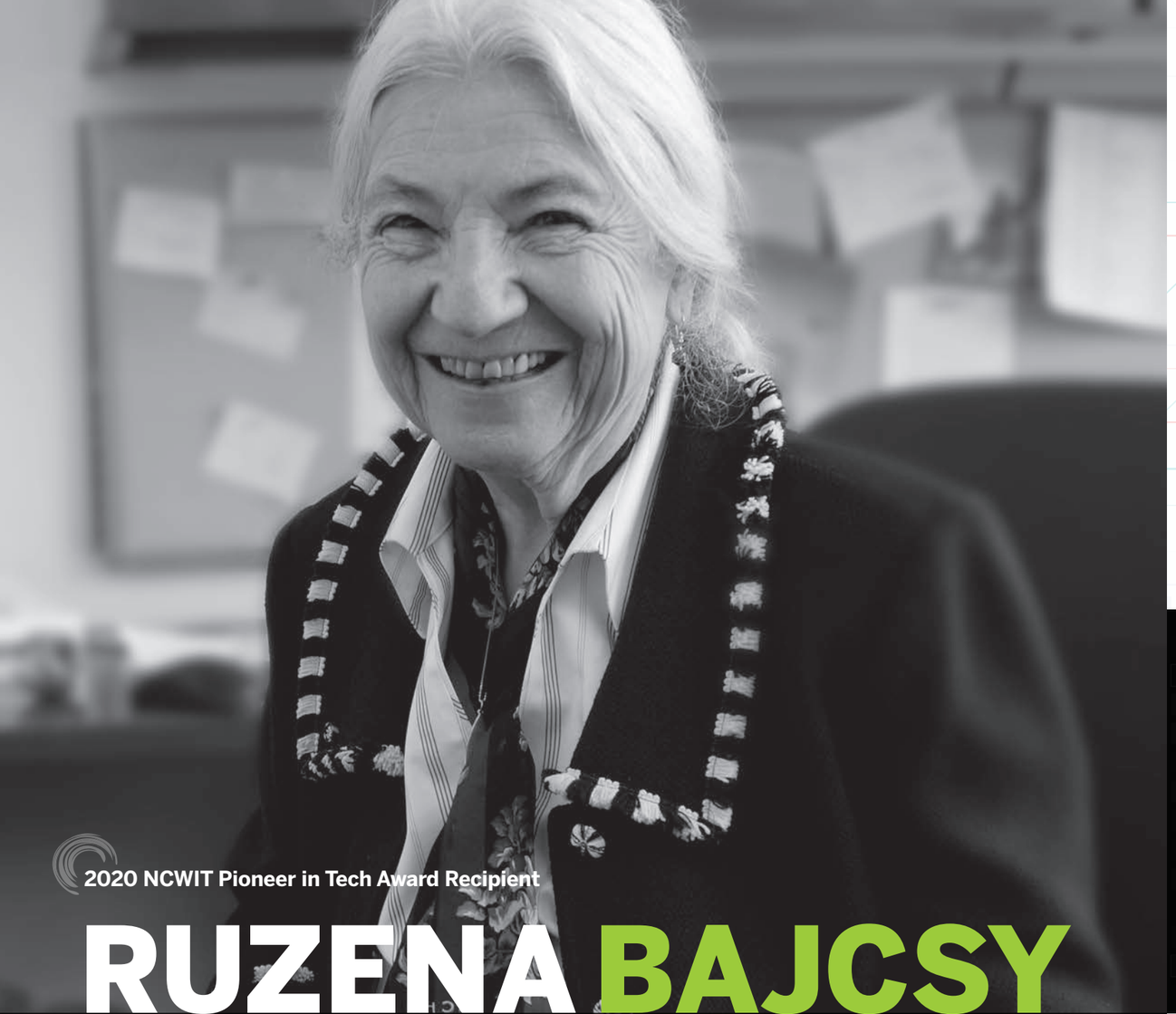
Within six months, I learned that almost everything I thought about gender equity issues in tech was at best neutral, and often wrong or hurtful. As I listened and learned, I realized most men had no idea what to do that was helpful around getting more women and girls involved in computer science (CS).

And, more importantly, when men — who at the time were primarily white men — engaged in the conversation, they either accidentally, or often purposely, did things that stopped everyone, and any semblance of progress, in their tracks.

Lucy helped me learn what it meant to be a male advocate (ally), and within the first year, I shifted my efforts to play this role in NCWIT and the broad domain of gender equity in tech. Fifteen years later, I'm comfortable in my role as a male ally and see rapidly increasing engagement of women and girls across the entire CS and tech landscape.

Shortly after the murder of George Floyd, I flashed back to my first year with NCWIT. While Amy and I have long been supporters of social justice issues, including around racial equity, I realized that most of the things I thought I knew were likely wrong, or at best neutral. I quickly adopted an approach of being an ally to BIPOC members of the tech community, especially around the issues of getting more diverse people involved in tech and computer science.

As a co-founder and board member for NCWIT, I'm heartened to know that the organization is committed in its work to addressing equity in tech at the intersections of gender, race and other historically marginalized groups. Amy and I funded re:think to amplify the conversation, since the moment is now for our community and nation to come together and take action. We view re:think as a launching point for getting the word out and encouraging you to engage directly with NCWIT to improve gender and racial equity in tech.



2020 NCWIT Pioneer in Tech Award Recipient

RUZENA BAJCSY

Ruzena Bajcsy has spent much of her career at the intersection of human and machine ways of interpreting the world. She pioneered a new area of study within the field of robotics, Active Perception, and was the first to argue that robots should be able to autonomously control the movements of their own sensors and other apparatus for interacting with their environment.

In 1978, she founded the General Robotics, Automation, Sensing, and Perception (GRASP) Lab at the University of Pennsylvania, a center for interdisciplinary robotics research that would produce many cutting-edge developments in robotics and computer vision. Bajcsy also led a team that developed the first 3D computer atlas of the human brain, a tool that revolutionized brain surgery, allowing much greater accuracy and saving millions of lives. Bajcsy began her technical studies in Czechoslovakia, where she was born, receiving her PhD in electrical engineering from Slovak Technical University in 1967 before coming to the United States to pursue a second PhD in Computer Science at Stanford University. Currently, Bajcsy is the Director Emeritus of the Center for Information Technology Research in the Interest of Science (CITRIS) at the University of California - Berkeley.

In a 2009 interview, Bajcsy noted, "My goal in my life has been to make technology useful. If we understand each other and respect each other, and this technology can help do that, then I think I have done my job."

re:think RESOURCE

Whether you're in a classroom or a boardroom, NCWIT can help you kick-start or deepen your inclusive culture. Take advantage of hundreds of free and easy-to-use resources for K–12, higher education, and corporations that support your efforts to raise awareness, increase knowledge, and empower action to make sure every voice is heard.

Get started with hand-picked titles that best correspond with articles from this inaugural issue of re:think: ***ncwit.org/rethink-resources***

Interrupting Bias in Industry Settings

In the hall, a colleague mentions Ramira has potential, if only she could learn to tone it down a bit and not be so abrasive. What (if anything) would you do or say? Use this resource to explore ways in which to react to this real-life situation.
ncwit.org/biasindustry

Tech Culture Interrupted

Tune in to ground-breaking research and ground-truth stories about how to build more inclusive and more innovative workplace cultures through new perspectives on leadership, community, and engagement.
ncwit.org/TechCulturePodcast

Modern Figures Podcast

This podcast guest stars Black women in computing who share their stories and perspectives on technical, societal, and personal topics. Tune in as they describe interestingly relatable, pivotal moments along their journey in computing with other women of color in STEM.
ncwit.org/modernfigures

Ruzena Bajcsy and 2020 Collegiate Award Winner Eshika Saxena discuss their unique pathways, interests, and accomplishments in this *NCWIT Conversations for Change* interview:
ncwit.org/ConnectingGenerationsVideo

THE IDEA YOU DON'T HAVE IS THE VOICE YOU HAVEN'T HEARD.

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