

Ramona Schindelheim, WorkingNation editor-in-chief:

You're listening to Work in Progress. I'm Ramona Schindelheim, editor in chief of WorkingNation. Work in Progress explores the rapidly changing workplace, through conversations with innovators, educators, and decision-makers, people with solutions to today's workforce challenges. Women make up just over 50% of the US workforce, but they make up less than 30% of workers in tech jobs. And while women are getting nearly 60% of all undergraduate degrees, less than 20% of graduates in tech are women. That's even though women in other STEM fields, science, biology, chemistry, the life sciences, is much higher. Judith Spitz is trying to boost the number of women in the field. She's the founder and executive director of Break Through Tech, which gives women a pathway to jobs in computer science. She tells me that the culture of the classroom, and the stereotyping of tech workers, has long been discouraging for young women.

Judith Spitz, Break Through Tech founder and executive director:

If you ask people, "Who are the role models?" Everybody can spit out the names of Steve Jobs, and Bill Gates, and Mark Zuckerberg, and so forth. Very, very few women come to mind. In fact, one of the funniest things I remember reading was, somebody who did a person on the street interview asking people to name a female technologist. And a number of people actually said Siri, which I think is comical. There is a role modeling challenge. There's also the actual culture of being in the tech industry, which includes what it feels like to be in a technology, computer science classroom in college. And what has been written about for a long time, which is the culture inside industry, the so-called 'brogrammer' culture. There's a lot of stereotypes about what it means to be in technology and almost all of them are wrong. It includes things like, of course, it's only for guys. It includes things like it's a loner sport, it's for people who like to sit alone in their basement and hack code.

Judith Spitz, Break Through Tech founder and executive director:

Of course, any of us in the tech industry know that couldn't be further from the truth because there is no such thing as a technology project that isn't team-based. But women in particular understand that computer science and coding is really just a tool to help you solve the problem that you're actually interested in solving. Because women, not to be overly stereotype, tend to be more mission driven. And so if we started to talk about learning how to code, and working in technology, as the tool that you need in order to solve problems like clean water, or climate change, or healthcare, or fashion tech, or smart journalism, or any of those things, we might encourage more women to pursue it because they see it as a tool they need to address the problem that they really want to solve.

Ramona Schindelheim, WorkingNation editor-in-chief:

Spitz says that beyond the stereotyping of tech as a male field, educational institutions, starting in high school, put up barriers to entry.

Judith Spitz, Break Through Tech founder and executive director:

I will assert that for as long as I've been looking at this, introduction to computer science has been historically taught in the same sort of a way as organic chemistry is taught for students who are thinking about being pre-med. And that is as a gating course to filter out everybody except the diehards. Lots of prerequisites that are math oriented, nobody has convinced me yet that you need advanced calculus in order to take an introduction to computer science class. You put up a bunch of barriers to entry that say, "Well, you have to have taken these math classes." That's one. Two, in many institutions, an introduction to computer science is not in one of the Gen Ed buckets. In other words, that satisfies a

requirement. And especially when you're talking about students who are not only underrepresented because they're women, but are underrepresented in tech because they're students of color, students of the first gen in their families from socioeconomically challenged environments, and so on.

Judith Spitz, Break Through Tech founder and executive director:

Those students are very focused on getting out of school in four years, if they can, because they need and want to enter the job market. If a course doesn't satisfy any of your Gen Ed requirements towards graduation, and you're not already a declared major, then there are all kinds of incentives to not take that class. In higher education, I think it has to do with, and this is no small task, making sure that every single undergraduate student gets an introduction to software development and computer science. If you did that, all 58% of the women who make up the undergraduate ranks would get exposed to this, and you only need a few percentage of them to completely change the game.

Ramona Schindelheim, WorkingNation editor-in-chief:

Five years ago, Spitz started Women in Tech & Entrepreneurship New York, now known as Break Through Tech, to encourage women to consider tech as an educational path and a career. Break Through Tech is at the intersection of industry and academia, delivering programs to propel women into tech.

Judith Spitz, Break Through Tech founder and executive director:

We go into a city and we establish a deep programmatic relationship with a large, diverse, public education institution. We started in New York, in partnership with the City University of New York, the largest and most diverse urban higher education institution in the country. Then thanks to grants from Pivotal Ventures, the Cognizant U.S. Foundation, and Verizon, based on the results that we achieved in New York, we were funded to replicate that program in three other cities around the country. Our first stop has been Chicago, in partnership with the University of Illinois, Chicago. What we do is two things. We fund the universities to deliver a suite of programs, based on the research that's been done over the years, about the things that really matter, and that can bend the curve in the undergraduate world. And those include three domains. And this is standing on the shoulders of giants, we are not reinventing the wheel here.

Judith Spitz, Break Through Tech founder and executive director:

It's about curriculum innovation, which is the what and how you teach those introductory courses, in order to cast a wider net and get more women to be willing to walk in that door of that first class. And then, how you teach that introductory class. Second is around community development, delivering programs that not only create a community of these young women with each other, but importantly, introduce them to a network of professional women in their local ecosystem, that these women don't have access to. They don't have personal networks based on their families, in order to help them network and get their foot in the door. And the third is around what we call career access. That is creating innovative ways for industry to open their doors to these non-traditional candidates. We call it the three Cs, curriculum, career and community.

Judith Spitz, Break Through Tech founder and executive director:

And at the same time, we create relationships with industry throughout the city that we're operating in. In New York, where we've been for five years, we are working with hundreds of companies, everything

from the smallest startups to the largest Fortune 10 companies. Again, to innovate around how to break down the barriers between those industries and these students.

Ramona Schindelheim, WorkingNation editor-in-chief:

By providing access to businesses, Break Through Tech helps women get their all-important first break, or internship, in the industry. With one of their industry partners, Verizon, Spitz came up with a pilot program of a mini internship during the school year.

Judith Spitz, Break Through Tech founder and executive director:

It's a paid three week internship that takes place during an academic recess that the students have, but not during the summer when the normal summer internship season is. And it is a three week immersion in a company, attending meetings, learning about the company by talking to the head of the engineering, talking to the head of products, talking to HR, and so on. Probably the most important part of the experience is that the students get assigned a challenge project, on the first day of the three weeks. They work together in a pod on that challenge project. They're usually pretty high level. You're not expecting these kids to develop a product in three weeks, or contribute to a system that's in production, but it's more of a, how might we use technology to improve the customer experience in our stores? Can you redesign, create a prototype of our intranet that will engage our millennial employees better. Build us a chat bot using an Alexa scripting language that'll help us in our call centers. All kinds of things.

Judith Spitz, Break Through Tech founder and executive director:

The whole idea of this program is, as I like to call it, to give these young women some resume juice. To give them something on their resumes, as well as a little bit of swagger, a little confidence that they've been there, so that it makes them more competitive when they actually go and apply for those summer internships. And the results have been remarkable. The success rate of the winterns or a sprinterns, in landing a summer tech internship, after they've done this mini internship experience, went from under 5% to over 50%. By the way, the majority of those summer internships that they got were not at the host company that they did their sprinternship at. Meaning that this little resume credential gave them enough experience for them to get their foot in the door to a summer internship.

Judith Spitz, Break Through Tech founder and executive director:

And we've been doing this now for over four years, we've worked with over a hundred companies, over a thousand winterns. I can tell you that once they get that first paid internship on their resume, then they're getting four and five internship opportunities the next year, and then four or five job offers when they graduate. The trick here is to find a way to lower the barrier to entry for the companies. You say to a company, "Listen, it's three weeks. Pay these young women a junior intern rate for three weeks. They're in and out. You'll get exposed to a talent pipeline you don't typically see, and it'll be transformational for the students."

Ramona Schindelheim, WorkingNation editor-in-chief:

One benefit of these alternative sprinternships and winternships is face time. That is face-to-face access to team members and hiring managers, who can see that they belong in the company. But the COVID-19 pandemic has made many companies go remote, and that's changed the internship process.

Judith Spitz, Break Through Tech founder and executive director:

Of necessity, we have had to move this last cycle of sprinternships into a virtual experience. It reduced, in part, the number of companies that could sign up because companies are dealing with their own internal crises. But not as dramatically as I feared. We had about 30 companies in New York, posting about 200 women from CUNY, in the last few weeks in January. And like all of our programs, everybody manages to deal with this online. There are sort of wrap around services that we need to provide. We need to make sure that all of our winterns, or sprinterns, have computers, and have wifi access, which some of them don't. And so when it was in person, the companies often provided that, so we were able to make sure that they have that basic infrastructure. Some of our students live in home environments with multi-generations, a variety of siblings sharing a small space. It's not the most conducive thing in the world, but we've managed. And all the reports are that the experiences were great experiences.

Judith Spitz, Break Through Tech founder and executive director:

I will say, there's this caveat. One of the important aspects of the experience, for our young women, is actually walking down the halls of MasterCard's headquarters, walking around for three weeks with cool engineers at an AI startup company. They don't normally get access to those corridors, and those people. The people that you meet because you're just walking down the hall, because you're standing in an elevator with somebody and they look at you and say, "Oh, you don't look familiar. Who are you?" And you get a chance to introduce yourself and establish relationships. That doesn't happen online and it doesn't happen in a virtual experience. And one of the things that I think, if we continue in this way, at least in part, is you want to figure out how do you build in those elevator, or water cooler, or cafe experiences, so that these young women are getting to meet more people than the ones that actually dial into their Zoom calls.

Ramona Schindelheim, WorkingNation editor-in-chief:

Spitz says there are more barriers for some women, and that was true even before COVID.

Judith Spitz, Break Through Tech founder and executive director:

What I am concerned about is the young women that we are focused on, women of color, first gen, and so forth, are not getting the same access because of this arm's length relationship, and the inability to be there, walk the halls, feel a sense of community and belonging, and build the networks that they need, to break down the barriers to access that they have because of their backgrounds, and where they're getting their degrees from. I think we really have to be mindful about that. It's not so much the job market, as much as it is the arm's length relationship formation that doesn't benefit our young women.

Ramona Schindelheim, WorkingNation editor-in-chief:

Yasmeen Munasser's 26, and she said that her experience with Break Through Tech, formerly Women in Tech New York, was life-changing. She said she has always loved math, and growing up, she was her family's tech support. But she didn't know that computer science was an actual field, with degree programs until was in an associate's program at a community college.

Yasmeen Munasser, Break Through Tech graduate:

I was the first in my entire family to pursue higher education and to pursue a mathematics degree for my associates. And so when I came across computer science at LaGuardia Community College, I would take a peek in the classrooms and I would see that it was majority males. There were about, I would say, two female students in a classroom of 20, plus 20 or 25 other male students. And I really questioned

why this is. And I looked up this major some more, and I saw anyone who's interested in this major would be really passionate about technology, is good at math, and is interested in these kinds of roles. And I realized that this is what I want to do.

Ramona Schindelheim, WorkingNation editor-in-chief:

When she saw a program at the City University of New York's website called the Women in Tech New York Summer Guild, she was intrigued. And she applied for the summer 2017 program and got in.

Yasmeen Munasser, Break Through Tech graduate:

And when I participated in the two week Summer Guild, and taking on these workshops, I would often look to the facilitator and tell him, "Is this the lesson for the day?" Or I was kind of in disbelief at how I was understanding the lessons really well. And I can remember his response, and how he laughed and said, "This is the lesson for today." And it just made me feel really good because I was understanding the material really well, I guess, maybe that is credit to the facilitator himself on how he broke everything down, or the pace of the program. Not overwhelming us participants too much because technology can be very overwhelming. And when you're learning a language, there is a way as to how you can present it to people who are just learning.

Yasmeen Munasser, Break Through Tech graduate:

I really enjoyed the intro to coding workshops. I enjoyed the program as a whole, being surrounded by other women who come from similar backgrounds, or even different backgrounds, just meeting other women. And it felt like a sorority program. Gained lifelong friends, that I still keep in touch with still today. It really gave me the confidence to take on computer science head on. And after that, I decided to continue on with my Bachelor's in Computer Science. So I actually pursued computer science in my third year of undergrad, and continued to push forward. I mean, there were moments where I did kind of feel intimidated, because again, not only was I overcoming being the first in my entire family to pursue college, but now as a Muslim woman, as a Yemeni woman, as an American woman, I am pursuing a male dominated field. This was another challenge to overcome.

Yasmeen Munasser, Break Through Tech graduate:

Given everything that I went through, and wanting to really represent, and show that women can pursue any field, there isn't really particular fields that women should be categorized for. A woman should be able to pursue any field that they are passionate about. And computer science was something I was really passionate about, and so I went for it.

Ramona Schindelheim, WorkingNation editor-in-chief:

Women in Tech New York, now called Break Through Technology, helped Yasmeen get her first internship with CNBC, after graduating from Queen's College in August. That led to a job offer with Accenture, as a tech analyst. She starts there in April. Yasmeen tells me she not only learned hard skills in web development, JavaScript, and CSS, she also learned teamwork and communication skills at her various internships. She says Break Through Tech also helped her become a STEMInist, an advocate for women to pursue STEM careers.

Yasmeen Munasser, Break Through Tech graduate:

Women in America are kind of categorized to pursue certain careers, such as you often hear women being categorized to belong in nursing or teaching. And both those careers are amazing, if a woman chooses to pursue those careers. But I feel as though a woman shouldn't be categorized in those fields only, and they should also be in engineering, and you could become a lawyer if you want, or a doctor, or a software engineer, or a business analyst. There are so many other fields for a woman to pursue. Especially with STEM careers, just the job prospects, and salaries that a woman can achieve through these careers is so important. This is kind of what I define as a STEMinist.

Ramona Schindelheim, WorkingNation editor-in-chief:

As a STEMinist, Yasmeen has one piece of advice to share with women pursuing computer science or technology careers.

Yasmeen Munasser, Break Through Tech graduate:

You are going to come across some classes, or certain languages, where you feel may not be your strength or you're the greatest at, and that is okay because no matter what, what I love about technology is that there is a place for women to be a part of this industry. And for everyone, really, as long as you're passionate and interested, there is a place for you.

Ramona Schindelheim, WorkingNation editor-in-chief:

You've been listening to a special edition of Work in Progress. Expanding opportunities in tech, creating a more diverse and inclusive workforce. This series is produced in partnership with Cognizant U.S. Foundation. For WorkingNation, I'm Ramona Schindelheim. Thanks for listening.