

ASPIRATIONS RECIPIENTS: WHERE ARE THEY NOW?

It would be easy to say that Nicole Torcolini (2007 Seattle-area Award for Aspirations in Computing recipient) faced more obstacles than most young women who pursue studies and careers in the male-dominated field of computing; but in Nicole's case she literally didn't see the obstacles in her way. She lost most of her sight at age four due to cancer in the optic chiasm, and the cancer treatment she received caused her to become slightly hard-of-hearing in both ears. However, she refused to let these adversities stop her from doing the things she enjoys, including horseback riding, playing the violin, and studying computing.

While a student at Central Kitsap High School in Silverdale, Washington, Nicole attended a University of Washington workshop for the blind hosted by Dr. Richard Ladner, a renowned leader in access technology for the disabled. The workshop inspired her to invent the [Nemetex Nemeth Back-Translator](#), a computer-based assistive technology device that translates visually incomprehensible braille math (Nemeth), produced on an electronic braille notetaker, into easily-readable print. Nicole became a high school entrepreneur, launching a small business to market the device to other blind students like her. This was just the beginning of Nicole's journey to help build tools for vetting and enabling accessibility in technology.

Nicole attended Stanford University and graduated in 2012, earning a BS in Computer Science with a focus in Human-Computer Interaction. She says that although the college experience was challenging (in a good way), she was pleasantly surprised by the variety of educational and cultural opportunities available to her at Stanford and in the Bay Area. Her Women and Disabilities class was a favorite: her professor was also blind and had a guide dog, just like Nicole does.

While a student, Nicole greatly benefited from her participation in numerous workshops and special programs to develop her interest in computer programming — including Microsoft's DigiGirlz, DO-IT (Disabilities, Opportunities, Internetworking, and Technology) at the University of Washington, the National Federation of the Blind's Rocket-On Camp, and the Distributed Research Experiences for Undergraduates (DREU) program. She credits the [Office of Accessible Education at Stanford](#) and the [Washington Council for the Blind](#) as being instrumental to her success. In addition to winning the NCWIT Award for Aspirations in Computing, Nicole received a 2011 [Google Lime Scholarship](#) and Microsoft's You Can Make a Difference (YCMD) Award. She also completed summer internships in the Accessibility Departments of Microsoft and Yahoo!

These days, Nicole spends most of her time working at Google as a Software Engineer in Test, writing code that runs tests on Google+ and assisting a team that helps improve the accessibility of Google+. She has helped to develop assistive technology solutions for Benetech, a Silicon Valley non-profit, and worked with NASA on the Math Description Engine (MDE), graphing software that can convey the shape of graphs aurally. Nicole also participated in other assistive technology projects that were not software-based, including helping the Astronomy Department at the University of Washington develop a hands-on astronomy curriculum for the blind.

Nicole is a terrific reminder of the importance of bringing people with diverse backgrounds into technology. She has used her own experiences and perspectives not only to help design technology that improves accessibility for others like her, but to improve technology's impact on all of us.



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ASPIRATIONS RECIPIENTS TAKE THEIR TALENTS TO EUROPE

[Naomi Shah](#) (2013 National Award Runner-up, 2013 and 2012 Oregon & SW Washington Award recipient) and [Meiri Anto](#) (2012 National Award Runner-up and 2012 Bay Area Affiliate Award Recipient) were awarded Intel's Tech Needs Girls prizes, based on their hard work and dedication to innovative technology-based projects and their highly compelling essays. They took their tech talents and aspirations to Europe in April, when they attended the ITU Tech Needs Girls Awards at the European Parliament in Brussels, Belgium. The international forum brought together individuals from all over the world who share a common goal: empower and encourage young women to consider careers in the growing ICT (Information & Communications Technologies) sector.

Naomi and Meiri recently shared their thoughts on the experience. "The biggest take away from the Tech Needs Girls event for me was that the problem that is self-evident in the United States, the paucity of women in these fields, is not unique to the U.S.," said Naomi. "I didn't realize that so many other countries were facing very similar statistics and very similar numbers and that was most eye-opening, it really is an international problem and we should be addressing it for girls across the world, and not just one region of the world."

"My Brussels experience was amazing," said Meiri. "There were so many interesting people taking new approaches to getting more girls involved in STEM ... I realized, more than ever, how important it is to increase the pipeline of younger girls interested in technology and how we need to work together to remove the barriers to entry for them."

Naomi gave a five-minute talk and introduced her research on air quality, for which she won an Intel Science Talent Search Award. But the majority of her talk focused on a camp she created for middle school girls, called FACT (Females Advancing Computing & Technology) Camp, which encourages middle school girls to explore technology and computing fields. Naomi's camp is one of 24 programs to receive grants from NCWIT's new [AspireIT Middle School Outreach Program](#). In cooperation with Jeanine Pearson (2013 National Award Runner-up and 2012 Oregon & SW Washington Affiliate Award recipient) and Lewis and Clark College, Naomi has led the planning and execution of a camp to provide incoming high school freshmen with lessons in Gamemaker, mentoring, and guidance on research projects. In addition, their summer camp will host a learning tour at the local offices of Intel (an AspireIT sponsor).

Naomi has been recognized by Popular Science as one of the top ten high school inventors of 2012. She is also the winner in the 2011 Inaugural Google Science Fair, which took her all the way to the White House where she got a chance to meet President Obama, EPA Administrator Lisa Jackson, and NIH directors to discuss her research and its effect on regulatory policy.

Meiri is a rising sophomore at Swarthmore College in Pennsylvania. Prior to college, she wrote a blog and held weekend workshops at her high school to encourage younger girls to get involved in science and technology (beyond using social media applications). This summer, Meiri is doing an internship in bioinformatics at Stanford University School of Medicine and recently won the 2013 Facebook Grace Hopper Scholarship.

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COLORADO ASPIRATIONS IN COMPUTING RECIPIENTS HELP PEERS JUMP INTO JOBS

Although Aspirations in Computing recipients tend to go straight to college after high school, many industrious young women get their feet wet in the workforce by working after school and during the summer. [Lauren Jury](#) (2012 National Award Runner-up and 2012 and 2011 Colorado Affiliate Award recipient) and [Josie Lamp](#) (2013 National Award Runner-up and 2012 Colorado Affiliate Award recipient) have created an innovative tool for their peers to jump into jobs by accessing employment opportunities in Colorado.



Lauren and Josie worked with two other students from Skyline High School's Computer Club in Longmont, Colorado, to create a web-based tool for individuals age 17-26 to learn about jobs in the area, build appropriate résumés, practice answers to interview questions, and to polish up their professional skills. Their product, "Jumping Into Jobs," was designed at the behest of Workforce Boulder County, which saw a disconnect between its services and Boulder County youth. Project Director Rachel Strobel (a masters student in the Information and Communication Technology for Development program at the University of Colorado at Boulder) approached them for input on the project and found they were eager to help build it.

"The project has been developed from the ground-up using open source software. It is also a content management system. The students came up with the name, they decided and researched what platform to use in creating it, they created the style, design and content and everything they created is from youth, for youth," Rachel said.

"We wanted to have something where our peers could find information about how interviews work, how to write effective resumes when you're applying for jobs, it's a big question mark, especially if you don't have someone who has gone through the process helping you, explaining what happens during an interview or what is or is not appropriate to wear to an interview," said Josie.

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EDUCATOR SPOTLIGHT: CATHERINE WYMAN

Catherine Wyman, Program Director for Technology at [Xavier College Preparatory School](#) in Phoenix, Arizona, knows all too well how important it is to keep encouraging more girls into tech. This year she had a whopping 13 students receive the Arizona Affiliate Award for Aspirations in Computing!

Catherine herself received the 2012 Arizona Aspirations in Computing Educator Award, and is in her sixth year of championing girls' involvement in STEM fields. With the \$1,000 professional development stipend she received with the Educator Award, Catherine attended the Computer Science for High School teachers ([CS4HS](#)) [Workshop at Carnegie Mellon University](#). This summer workshop, funded by Google, provides activities for educators geared towards helping high school students grasp the breadth of computer science and learn more about the various fields of study within computer science. Following is an excerpt of our recent conversation with Catherine.

NCWIT: *Do you find it easier in an all-girls' school to battle the common attitude among young women to talk themselves out of even applying for awards and programs, because they fear they aren't going to win them?*

Catherine: *Especially at an all-girls school, there absolutely is that common way of thinking, "Oh, I'm not going to win, so I might as well not apply," and one of the things I do is tell them that the only way to guarantee you're not going to win is if you don't apply, so why not just do it anyway? I also try and get girls to encourage each other. [At Xavier] we've created a culture of encouraging those who are coming along behind us and we do a great deal of outreach to middle school girls and underclassmen, and I think it is working.*

I just learned this last year that one of the first persons, not women, but "persons," to earn a PhD in Computer

Science was [Sister Marie Kenneth Keller](#). She helped develop the computer language BASIC and founded the computer science department at Clarke College in Iowa, which she directed for twenty years. She was of the same order of nuns as those that founded Xavier Prep. This year one of the art students created a portrait of her and we have it hanging in our computer lab as a way to say, "Somebody else has already blazed this path, let's follow her."

NCWIT: Catherine, I understand you are also involved in a lot of extra-curricular activities with the girls. Can you talk about that a bit?

Catherine: Extra-curricular activities are really important, and if we can find a way to take a really creative approach to anything STEAM (Science, Technology, Engineering, Arts, and Math ... we throw art in there too, because what is engineering without good design?) ... If we can find an extra-curricular way to look at that stuff and get engaged I think it helps students learn on a much deeper level and with girls, it's been my experience that they are very strongly motivated by helping others.

Every year we have a whole-day event in which we get over 500 middle school girls from around the Phoenix metropolitan area to participate in Xavier's "Girls Have IT Day." It's completely free for middle school girls and they come and get mentored by high school girls, mostly members of Xavier's various student clubs, during a full day of hands-on demonstrations and activities that are all STEAM-focused. We've found this event has inspired creativity, critical thinking, and problem-solving skills in our girls and it becomes contagious as the younger girls in our community begin to embrace STEAM and it opens up a whole new world to them.

So we get these high school girls — about 100 of them — working with the middle school girls, those are the ones we send out to other activities. As a result of the success of our Girls Have IT Day, a couple of our Aspirations winners applied for the [AspireIT](#) grant and won it, and now we're going to have a Girls Have IT camp.

NCWIT: Talk to us a little bit about some of your remarkable students.

Catherine: There are so many students that are remarkable and many of them keep in touch. I keep telling myself that this is half the reason I have a Facebook account, so I can keep in touch with these alums! Last year, we had NCWIT Aspirations in Computing winners who wanted to go to the National Girls Collaborative Project Conference in Washington D.C., and our principal gave approval ... we did this cost-sharing thing where the I applied for a grant to fund part of it, while the principal funded part of it and the girls had to come up with a small portion of it and we sent these girls to that conference.

But there was caveat, that these girls had to commit to being involved with Girls Have IT Day the following year — even though they were all going off to college. So several months later, honestly I had actually forgotten all about that caveat, but the girls remembered. They got on their webcams and they created these really inspiring messages about studying engineering or science and they wove them together in this cute little video that we were able to show to over 500 girls at this event — and I cannot tell you how inspiring it was for the younger ones. It was really awesome.

[View the video](#) Aspirations in Computing girls made.

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Aspirations in Computing is supported nationally by Microsoft, Bank of America, Bloomberg, AT&T, Motorola Solutions, Google, Intel, and Northrop Grumman.

Find out more or get involved with the Aspirations in Computing program: <http://www.ncwit.org/programs-campaigns/aspirations-computing>.