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How to Encourage Women to Consider STEM Majors

A leading female in the sciences says colleges, professionals, and parents all play important roles.

By KATY HOPKINS

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For Alicia Abella, the path to becoming a leading female STEM (science, technology, engineering, and math) professional started in a high school computer science class in the 1980s. Learning basic programming skills piqued her interest, and she began contemplating the potential proliferation of computers and the myriad career possibilities a degree in the sciences could open for her.

Years later, after earning a bachelor's degree from New York University and a Ph.D. from Columbia University, Abella is now the executive director of technical research at AT&T Labs and a vocal spokesperson about the potential for other women to find similar success in a STEM field.

Alicia Abella of AT&T Labs wants more females to consider STEM majors.

[Explore the *U.S. News* rankings of Best High Schools for Math and Science.]

Abella spoke with *U.S. News* about the challenges surrounding inclusivity in STEM fields, and how the effort to get more women involved may take a multifaceted approach in order to be successful:

1. Why is it important to get more students, including females, interested in STEM?

The country as a whole is in need of more scientists and engineers. There's just not enough of them going into these areas. We have this untapped pool of people in women and minority students that, if we encourage them, could have a very fulfilling life in the science and engineering fields.

[Read about the STEM disconnect that's leaving female and minority students behind.]

It's really to help everyone: Help the students, and then help us as a nation meet the demands of the technological problem of not having enough scientists and engineers.

2. Why do you think many young women are reluctant to consider a STEM field?

The perception of engineering and science is really still that stereotypical nerd image. The image some girls will tell me about when they think about a computer scientist is a nerdy boy sitting in a basement eating donuts with really greasy hair. The truth is, they don't really find that all that appealing.

One of the things that we can do to help disband that stereotype is really to expose these young girls and young women to role models who are in the field to make them recognize that, in fact, you don't have to really fit that stereotype.

[See how college students can be key STEM mentors, too.]

3. What are common questions you hear from young women, and how do you respond?

them, "Yes, it's hard, but nothing worth doing is ever easy."

I don't want them to be misled into thinking it's all fun and games. One of the things I hear a lot about is how we need to make math and science more fun and exciting for students, and while I agree that's true ... we don't want to fool them into thinking it's all fun and games.

It is a hard field to go into, but we want to get them to recognize it's worth putting in that hard work and effort because the rewards are so great.

4. What is the biggest challenge you faced as a woman in STEM?

In a sense, there hasn't been just one challenge that I can point to. I view the entire experience as a challenge. In general, a science and engineering degree is a very hard degree to get.

5. Do you think you would have faced those challenges regardless of your gender?

Yes, I think so. I certainly went to school with peers who didn't succeed or didn't finish, and they were men. I think it was there regardless.

6. What can current STEM students do if they feel like they might not succeed?

The mentoring and coaching is important. If they can find somebody they feel they can trust and talk to, to get advice from, that's important. Maybe joining peer groups is important for people. On campuses, there are certainly tech clubs, women's clubs—something where people who are experiencing similar challenges can get together and, in a sense, encourage each other to push onward.

[Find out why STEM role models are important for minority students.]

7. What can parents do to encourage their students?

I encourage them to encourage their children to consider science and math. It's quite often hard for these parents to do that because they themselves think, 'Well, I'm not a scientist or engineer. How can I encourage my child to do that if I'm not a scientist or engineer?' You don't have to be, as a parent. All you have to do is give your child the encouragement to at least try it.

Even just asking students, "How was your homework today? How was that test?"—that's a lot of what the students need ... [Parents] don't have to know the math to take an interest in their child's education.

[Find out why STEM engagement needs to begin early.]

8. Is it ever too late to enter a STEM field if you've started out on a different educational path?

I would say there's always a chance. In fact, it's interesting—coming from the computer science perspective, because it is such a cross-disciplinary area, it might even be useful to get a degree in a different field and then get the engineering/science degree afterward.

In fact, I've hired a new researcher in my group who just got her Ph.D. in computer science, and her bachelor's degree is ... in design and art. Her design work has helped in [computer science] because that field is about designing applications and services for consumers, and you have to have an appreciation for being able to create easy-to-use programs and ... also [have] a knack for arts and beauty. Having that diverse background for her helped sell her to me.

9. Is there anything colleges should be doing to encourage more STEM students?

[STEM programs are] not always portrayed in a cross-disciplinary manner, or marketed as, 'These are the kinds of careers and things you can do with a degree if you go into this field.' A lot of the students I've talked to, even at Ivy League universities in engineering programs in their senior year, aren't sure what they're going to do when they graduate. That, it seems to me, is astonishing.

I think there could be a better job done in ... marketing these programs and in helping to identify the kinds of careers and things you can do with a degree when you finish.

I think of a STEM degree as a degree in problem solving. If you think of life as something where you're always going to be solving problems, then you're pretty well equipped to succeed in life when you have a STEM degree. Something as simple as that can actually help to encourage people to go into those fields.

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