

# Stephanie Adams

## A believer in herself and her vision

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### Changing the vision of engineering education

I was first introduced to the idea of questioning the status quo in the education of engineers by Richard Felder in the early 1990s. From then on, I started to realize that we don't have to teach the way we were taught, just because it's always been done that way. I attended a faculty development workshop with Sheri Sheppard, Richard M. Reis, Michele Marincovich, and Carol B. Muller in the late '90s, which was essentially about breaking away from the mold we saw as students. We covered how to write appropriate outcomes, how to include active learning, and how to assess the students in this new way, and these ideas gave me permission to be a different kind of faculty member. I didn't need to do the same thing that had been done for years and years. Instead, as a people person who had always been concerned about the student experience and their education, I was encouraged to break the mold and teach differently.

In my opinion, this approach to teaching differently should, in a nutshell, use research to inform practice. We know so much about how to educate students, how students learn, how to best teach, and we are doing a disservice if we are not constantly changing how we teach, how programs are constructed, and how people are trained. We are missing an opportunity if we rely solely on the research without a real, fundamental commitment to the practice. We should constantly be reminded of the fact that we are not locked into whatever our existing pedagogy is. Furthermore, we need to make sure these ideas reach other specialized engineering discipline educators and especially non-engineers. After all, it's discipline-based engineering faculty that also need to reassess the way they are teaching, and the non-engineers are the ones who will be setting the policy and making the decisions that impact what we are able to do.

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I think it's imperative for engineering educators to not only constantly beat the drum about what happens in the engineering classroom, but to also create experiences to increase literacy among the non-engineers. We also have a responsibility to look at alternative ways to assess what students are learning and the impact of our programs. This vision is clear in my mind, and it drives my decision making about running the department and what I think our role can and should be.

### Running your own race

I went to graduate school at Texas A&M, which was a part of the National Science Foundation's Foundation Coalition. My interest at the time, since I was coming from a systems engineering background, was really looking at quality management and quality control, but recognizing that a part of quality management considers the people interaction. The people interaction within industry and academia and what it took to facilitate the process of change was my first step into examining teaming from an engineering education standpoint. While at A&M, Karan Watson made me aware of and encouraged me to pursue interdisciplinary engineering, which allowed me to take classes in various departments, including education and business. I was exposed to the importance of people working together in organizations, which aligned with my interest in teaming.

When ABET announced EC2000 (Engineering Criteria 2000), along with the new criteria for how programs were going to be assessed, my passion was ignited. When ABET came out and said that an outcome of an engineering program is that students must be able to work in teams, I realized this is going to be important work, whether people like it or not. People were going to have to be able to demonstrate that their programs were producing engineers that could work on multidisciplinary teams, and so I decided to stay my course and find something useful—something seminal—so that in the future someone would say, “Oh yes, we are so glad that she did this. We are so glad that we funded her, because this is something that every engineer has to be able to do and demonstrate.”

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My first faculty appointment was in an industrial engineering department, and the traditional IE faculty were trying to figure out what it was that I was doing and if they thought it was important. I don't think anybody took my work seriously, because it wasn't what people were expecting. There were pockets of people doing engineering education research, but it wasn't a readily available discipline that people could go into. It wasn't until I got an NSF CAREER (Faculty Early Career Development Program) award to study teaming that people really took my work seriously and realized that this is important work. People were interested in having me talk with their students about teaming and collaborating. It was a challenge to be just one person researching a topic in an area no one understood yet.



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Some words that really stuck with me through all of the challenges I faced are from Marlo Thomas’s book *The Right Words at the Right Time*. Marlo’s dad, Danny Thomas, a famous actor, told his daughter to run her own race. He told Marlo not to worry about being Danny’s daughter or being compared to her father. For me, those words made me realize that if you believe in yourself and the importance of what you’re doing, anything is possible. Once I believed in what I was doing, other people started realizing and saying how important it is, and that is really what sustained me. My first seven proposals were rejected. I could have quite and tried to go do something else, but I had a belief in what I was doing—a belief in the body of work that I was trying to build, and a belief in the need for it. This belief allowed me to continue to persist in spite of the rejections. And then, finally, I struck gold.

## My mantra: Leverage and partner

Although it’s hard for me to think of myself as someone with considerable impact on the field, I hope that my presence and the fact that I was out there served as a role model to others. When I think of all the people that influenced me and had an impact on my career in this field, I have come to realize that you cannot be too big and not continue to help others who come after you. In order to make a lasting impact, you still have to be available and accessible to others. There’s an obligation to some extent, because other people did it for you. I have begun to realize that my mantra is “leverage and partner,” which to me means to leverage whatever reputation people think I have and to partner with other people and bring them along. When I am asked to participate in a project, I will always ask someone, typically someone in a junior position, if they want to collaborate and work together. Somebody always thought enough of me to include me on their ride, and so my lesson learned was, always bring someone with you.

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On several occasions, the Quality Education for Minorities Network out of Washington, D.C., invited me to talk at workshops for minority faculty about how to get a CAREER award. Through these experiences, I was able to talk with a number of people that I met early in their careers who have subsequently been awarded CAREER grants and who have actually said, “I wouldn’t even have thought about this, had I not gone to that workshop and not met Stephanie Adams.” I think my impact and influence on the community is that I was out there and it gave other people some hope and gave them the opportunity to see what was possible.

One change I think needs to occur among leaders is to recognize that they will have success through the people they surround themselves with. As an administrator, I still have a couple of active grants, but I have also learned that it doesn’t always have to be about me. By seeking out and surrounding myself with successful and good people, they will have successes that will reflect positively upon me, but additionally, that way I am also creating an opportunity for them to thrive and grow within the field.

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My advice to future generations of engineering education researchers, educators, and graduate students is to be solidly grounded in methodology, whichever your method is going to be. I would almost advocate for moving away from exclusively quantitative or qualitative and looking more towards mixed methods. Additionally, I recommend reading as much as possible in order to really understand the field and the work that’s being done. The *Journal of Engineering Education* is a focused research journal today, and it gives students and scholars the opportunity to look at how people write, how research is composed, and how it is disseminated. When I was getting started, I had to navigate the whole landscape of writing, but now there is a central location to find great research and writing examples to learn from. Finally, I always tell my graduate students to talk to people. Do not be afraid to engage with the leaders and scholars of our field—get out there and meet them! They are just people and want to learn, collaborate, and partner with you.

*This profile was authored by Natascha M. Trellinger, Purdue University, based on her 2014 interview with Dr. Adams.*