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FULL DETAILS AND TRANSCRIPT

Female Role Models in High School

Hillcrest High School, Texas • November 2007

Topic: Encouraging Girls in Math and Science
Practice: Female Role Models

Highlights

- Guest speakers can be a powerful tool for interesting students in a career in the sciences.
- One advantage to having younger guest speakers is that students are better able to relate to them. Female and minority speakers who are young and "cool" help dispel myths about who can be a scientist.
- This teacher always asks guest speakers to talk about what kept them motivated when they faced obstacles or got discouraged as students.
- Potential resources for finding guest speakers include corporations, but also private societies (e.g., Engineering Society of America) that can recommend a local member willing to be a speaker.

About the Site

Hillcrest High School
Dallas, TX

Demographics
53% Hispanic, 29% Black
59% Low-SES

33% Limited English Proficient
52% Females

Hillcrest High School, an urban school that serves primarily ethnic minority population, has been recognized for its efforts to promote students' enrollment in Advanced Placement (AP) courses. For example, this school ranked in the top 5% of high schools in the country, according to Time Magazine, for AP exams proctored. They encourage girls by:

- Active recruitment of girls to AP classes
- AP physics teacher trained by the Center for Gender Equity
- Technology grants pursued to enrich school labs
- Encouragement of hands-on scientific inquiry in the classroom

Full Transcript

My name is Daniel Brown and I teach Physics at Hillcrest High School here in Dallas, Texas. I think it's really critical to show role models to all students, girls included. And so when I do seek out role models and have guest speakers come into my room, I really like to try and find women role models, so that they can see that it's something they can do. And usually I request to find women engineers or other such speakers that are young. I want them in their 20s, where they're more of an older sister.

I've had a number of guest speakers that are women in the past, and some are highly accomplished women in their 50s. And they have accomplished amazing things. They have their names on U.S. patents, and they are almost so high, I think, they're almost out of touch and women just can't see how they can get there—the younger women I work with as students in my class.

Where someone who is 28 and they're pulling down 60, 70 thousand and doing a really fun, techie job but they're only out of college 5 years and they're not married, don't have kids yet—my students can relate so much better. And they'll show up in blue jeans and much more relaxed, and they'll just talk about how amazing and how cool and how fun it is to show up every day and get paid to solve real life problems.

I find it's very effective when I invite a guest speaker if they come in when we're studying that topic. But I've also found it's not necessary. That if it's a topic that we've studied any time earlier in the year, I can say, "Hey, we're bringing in this kind of scientist, and they actually use some of the information we're talking about." So for instance, my guest speakers last year, one of them worked with digital light projection. Okay? Which a lot of the optics things that we study everyday matter to them. And so they were able to kind of have a link right away of what that guest speaker was studying.

And I also deliberately and specifically mentioned, "Hey, you know there are some really cool people in this and there are really cool women in this too." And so they were both women. They were both in their 20s.

They were both minority, and it just provided a really good picture that engineers are not white males with pocket protectors, and that's just not the true image at all any more. And it is changing and of course, we hope it will continue to change as a lot of people with those talents—whether they be men or women—go into that field.

Last year when we had two guest speakers come—they were two young women from Texas Instruments. And there's a Speakers Bureau for all the technical firms in the Dallas area. And so those two happened to come from Texas Instruments but they can come from other places as well. One of them worked with DLP—Digital Light Projection Chips—and another worked on a different fabrication line. And they were just fantastic. They were so engaged, and they had a PowerPoint presentation, but a lot of the time they just spent fielding questions, because the kids wanted to know, "What kind of problems do you run into? What kind of problems do you solve? What do you do? Do you spend your whole day in meetings? Do you spend your whole day in a lab working on stuff? I want to know what it's like."

And, of course, they were talking about, "No, we don't spend our whole life in a lab. We are constantly working with different people and going from one group to another gathering what we need, the resources to solve the problems in front of us today. And we're always thinking about how we can better the corporation, and return more profit to the shareholders." They were going into so much detail as to what their everyday life was like, and it was really exciting the way they were presenting it. And afterwards, a number of students, both male and female, really commented how cool the girls were. And that's a—that really dispels another stereotype a lot of people have of engineers or scientists—that they're just really a bunch of nerdy people that are not cool at all.

I find when girls are questioning role models they really want to know about some of the more touchy-feely sides of a job. A lot of the time when guys are asking, they just want job function: salary, hours you have to work. And for women, it's a lot more, "Tell me about the environment you work in. Tell me about who you work with. Tell me about how you work with them."

And whenever the guest speakers come, I always ask guest speakers, "When you really got discouraged, when you got that 20 on that test in college that we all got once, when someone walks up to you and tells you, 'What are you doing in this field?' When you have those really discouraging days, what keeps you going? Why did you keep on driving away when you were kind of going against the flow?"

And it's very important for me to ask those questions, and the answer always comes back the same. It almost always comes back, "You know, I have a lot of good people in my life that told me, 'You're really good at this.' And that really outweighed the discouragement I got. And when I was questioning, 'Is this really what I want to do?' I'd have roommates or other friends say, "I see that in you, and it's really there, and you can't stop."

I've stumbled on some really great resources for finding guest speakers. A lot of corporations have people within that corporation that regularly volunteer their time out as a public speaker for other schools or other

organizations. But sometimes the organization itself doesn't even know who they all are because they're not always going out to represent that organization. Maybe it's a corporation of engineers, but they're actually representing some private society. And I think private societies are actually some of the best places to go look—that you would go look for the Engineering Society of America, or you would go to the Optical Society of America if you wanted to find someone in optics. And they would actually put you in touch with a local representative who would know about people within corporations around you who are working in your city who might be able to help you out.

I think there's no doubt that some of the students that I know go on to major in engineering tell me that they really got a spark ignited when they saw a certain guest speaker come in. Or they decided, "Well maybe I could be an engineer. I'll tell you what, I'll try a little internship," or, "I'll be a volunteer at this engineering firm and just see what it's like." And all of a sudden they get turned on to it.

And so there are definitely some students that I know that—both young men and young women—who have moved into those fields. Very STEM fields, whether it be architecture, whether it be physics, whether it be engineering or computer science—all those fields. I know students who have majored in them who have done so because they met someone who was doing it and they thought they just had the coolest job in the world.