

A Female Dean of Engineering Asks - Have Things Really Changed for Women in Engineering?

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A great deal has been done to encourage women to enter the world of engineering. We have excellent support groups in academic circles and in industry. The few women engineers there are in academic circles and in industry today work overtime to mentor and encourage students who enter the field. And many men have also been supportive and encouraging to women who are student engineers or who are practicing engineers or who are academic engineers. There are societies for women engineers on our campuses. And the government has, until recently, been a force in providing dollars to support our efforts. Well, times are tougher now, particularly in obtaining government support to continue our work. Can the good work we have done survive and will we still be able to provide support and assistance to those noble women who today would like to be engineers.

First, though, let us take stock. With all our efforts have things truly changed for the woman who today would choose to enter the field of engineering? I would say the answer is both no and yes. Let us consider first the "no" answer. What has not changed and why? The first place to look is within our colleges and universities. In academic circles Faculties of Engineering are strange birds. They expect their students to achieve a liberal arts education as well as a strong technical background, but the hearts of academic engineers are most assuredly in the technical courses. These Faculties have strong connections with industry and are quite successful in raising funds to support their work. These Faculties expect the students to be well prepared for industry positions and so design projects occupy a great deal of the students' time.

Faculties of Engineering, in short, are worlds unto themselves. They are less influenced by campus trends and initiatives than are other Schools and Faculties within our colleges and universities. And they are less responsive to national trends (for example, an emphasis on diversity and on sexual equality). So, no, Faculties of Engineering have not had massive changes of heart during the last twenty years. The model engineer in the minds of many faculty members looks very much like the engineering faculty member himself: male and white. Please, I do not believe that every engineering faculty member

is in the dark ages, but I do believe there are more dark ages in Faculties of Engineering than in other Faculties. With this attitude among the faculty in an academic engineering unit women do not feel central and welcomed. So, that is the bad news. But is there any good news? What positive changes for women have occurred in the field of engineering?

There have been positive changes for women in the world of engineering. Women who have graduated from our Schools of Engineering have entered the work force and have been accepted as competent and valued employees. We know this because these women are being courted by employers and promoted reasonably soon after they have begun work. We also know that one of the strongest and most successful clubs on campus is the Society of Women Engineers. And we know that a woman who seeks an academic engineering position will usually have more than one job offer. We also know that the number of women in some fields of engineering, for example environmental engineering, is quite high.

And now, from a female dean's point of view, here is the really good news. The number of female Deans of Engineering has increased from one five years ago to thirteen or fourteen today. Certainly this does not mean that women Deans of Engineering are taking over the world. There are, after all, over three hundred Deans of Engineering in the United States. But let us be impressed all the same. An increase of twelve or thirteen in just five years means that women are now in positions to effect positive changes.

Another positive change, a change which will enhance women's chances in many fields of engineering, is the demand from industry for a different kind of engineer. Industry is today seeking engineers who can work in interdisciplinary teams, who can communicate well, and who can relate to the diversified workforce which exists in industry now. These areas of expertise, teamwork, communication skills, and empathy, have traditionally been thought of as female skills. These are areas in which women have traditionally excelled.

So we can conclude by saying that one of the aspects of academic engineering which has caused universities and colleges to subtly or not so subtly discourage women - the acute response of academic engineering to industry - may now work in women's favor. If industry takes for granted that we are teaching technical skills to a high level and if they are demanding more emphasis on the softer skills, then women will have, not necessarily an advantage, but at least a level playing field. They will feel more welcome and more competitive when they become students of engineering and when they become professional engineers. And is that not the thing we want most - not an advantage, but a level playing field? If female high school students see that the field of engineering is not daunting or unwelcoming, but rather a field which values the things they know are their own strong points then they will enter the world of engineering. And we can say to ourselves: we've done well!