

## **What Women in STEM Still Need**

(adapted from a talk Alice S. Huang gave to the Oneonta Club, South Pasadena, CA. on May 13, 2019)

Thank you for inviting me tonite. I cannot resist talking about Breaking Barriers for Women in STEM to a club known to have only male members of “high distinction and standards.” You may feel that you are a captive audience but I will guarantee that this is better than being on a cruise ship with a bunch of scientists.

Chuck Vest , a past president of MIT, when faced with information about the poor status of his women faculty, decided that he could do something about the problem; I have always credited him with bravery in the face of a possible law suit in doing right thing. That is to admit to discriminatory treatment of his faculty and do his best to change his institution in how they hire and promote women faculty. He even went so far as to call a meeting with presidents of some twenty other peer institutions and ask them to examine their own practices and change them. This was not a one-time effort. He met again with his peers every few years to share what progress each had made and to commend those who made the most progress.

It is only such leadership from the top, and from men like Chuck Vest and hopefully you, that women in science will have a fair crack at reaching their full potential. I hope this is a topic that you will want to hear about because you have awarded scholarships to many young women with passionate interests in the sciences. And some of you may have daughters who aspire to become scientists. I hope you will want these women to experience a fair professional playing field and have equal opportunities for success.

So let me share with you my long experience in trying to gain equality for women scientists. Much has changed over the last 50 years; rather than being relegated to supportive repetitive work directed by male professors or laboratory heads, we can now be the director of a laboratory and even be department head or president of the university. In fact over 60% of married women now work outside the home and many are the primary financial support for their family. To us, it may seem that parity has been achieved between the genders. After all, women now have so many professional choices and they are visibly participating in every part of society.

Are there still problems, you might ask? Sadly, yes. You are needed to help solve these problems. A national senior group of women scientists who are part of the Rosalind Franklin Society will be meeting later this summer to decide how best to approach these problems and review what has worked and where imaginative approaches are still needed. Your input tonight will be transmitted to that group. So let me share with you what these problems are: I have listed 5...

Salary equity.

Marriage penalty

Implicit bias

Credit for work done

Sexual harassment

The first 4 problems are experienced by almost every female scientist. Let me focus on salary equity. In 1974 I and several of my female colleagues from the American Society for Microbiology carried out a survey during a national meeting and received thousands of responses. We analyzed the data by gender, but also by professional position, as well as whether the individual was married or not and had children or not. We analyzed the data using punch cards, just to show you how long ago that was. The data were not surprising for that time:

Professional women were over 90% single without children; in comparison, most of the men were married with children. What was most glaring in the data was the salary differential of 73 cents to the dollar between what women were paid compared to men. Despite the fact that entry level jobs NOW pay the same to women and men, profession after profession still show surveys where women are paid less than men, especially the higher one is in the profession.

Here I have to tell you a story about Caltech. It has been my habit at any institution that I become associated with to ask about salaries. So when I arrived at Caltech in 1997, I asked the provost for data on the professorial faculty. Six months later I finally received the information, nicely aggregated by gender, and disaggregated from individual names. It surprised me how well women were doing at Caltech. It was not until 9 years. Later when I was about to leave my position as first lady at Caltech that the women professors invited me to a luncheon, and it was there that I discovered that many of them had received rather generous salary increases in the 6 months immediately following my arrival at Caltech.

Most everyone agrees now that there should be equal pay for equal work. The patriarchal argument that single men and women don't need as much money runs counter to the right to equal pay, especially when the amount of the salary becomes the measure of success. So it is important to keep an eye on salaries. The differences still exist today. It will only end if all of us, especially the employers, recognize the responsibility of closing the gap.

As for marriage and children, professional women are no longer sacrificing themselves to a life of celibacy and childlessness. However, the decision to marry and have children is not taken lightly. There is a price to pay that I call the marriage penalty. This not only refers to the extra taxes that must be paid by married women, but also to the extra

time that women still spend on household chores, childcare and eldercare. Such responsibilities cut into the time that women have to concentrate on the profession and to compete effectively outside of the normal working hours. It is the rare couple who has solved these issues equitably.

Are there other solutions, such as affordable childcare or communal living arrangements that may help here?? Of course, higher salaries can help in the hiring of housekeepers, nannies, and cooks. Some years ago, in the fifties, there were special grants to women physicians to pay for household help. This was because there was a shortage of physicians. The marriage penalty only exists for women, not men and is one of the hardest problems to solve. At the rate that we are moving it may take another 75-100 years before husbands step up to carry their fair share of the household responsibilities. In the meantime, the extra stress and anger that women experience, diminishes the happiness in many marriages. This is something that husbands can do something about if they wish to do so.

As for implicit bias, it is another hard problem. Many of us think we are free of this, but I can tell you not so. To prove that you are unbiased, I dare you take the test on the web: [Implicit.harvard.edu](http://Implicit.harvard.edu).

As an example of what I am talking about, here is a joke going around on the internet:

It deals with Equality in the Office!! And it goes like this....

The family picture is on his desk

- Ah, a solid, responsible man

The family picture is on her desk

- Um, her family will come before her career

He is talking with his co-workers

- He must be discussing the latest deal

She is talking to her co-workers

- She must be gossiping

He's not in the office

- He's meeting a customer

She's not in the office

- Her child is sick again

The boss criticized him

- He'll improve his performance

The boss criticized her

- She'll be very upset & cry

He's having lunch with the boss

- He's on his way up

She's having lunch with the boss

- They must be having an affair

Jokes aside, women are judged differently. To be successful most women have had to work harder, put in longer hours, and be smarter. In fact, implicit bias often results in not giving women scientists the amount of credit that they deserve.

To gain recognition, a woman always has an uphill fight. I have often heard men discredit women casually by saying “that woman does not understand her own data” or that “her scientific productivity is the result of collaborating with brilliant men”. In the boardroom as well as in the laboratory women’s ideas and data are often appropriated without their permission and later presented by men as their own. An important study found that there needs to be at least 3 women on any

committee, so that an original idea first announced by a woman will be noticed and claimed again when others think it is their own idea.

With the hashtag, me too movement, you might think that sexual harassment is a major burden. It is probably the least of the problems that women scientists face. I am not talking about casual touching and flirtation but about someone in a position of power who uses that power to obtain or demand sexual favors. Those found to be repeat predators are now facing removal from honorific academies, or worse, the forfeiture of future government pensions. If there is enough agreement about such tough penalties, sexual harassment may come to an end quickly.

You have now heard some of the discussions at national levels regarding barriers for women scientists. In conclusion, I want to ask you to share your thoughts about what the national agenda should be when advocating for women scientists. Do you see other barriers to women's success? With the 5 barriers that I have mentioned, how can we remove them? What can you do as a group to bring about change? Are the commissions and committees on the right track? What is it that we want for our children?

BUT, MOST IMPORTANTLY in my view is the question: have the demands for equality pushed out some of the most important reasons that we all got into this to begin with? Many young people worry about having a life – the balance between family and career. With more women in the professions there was the hope that the quality of life would become better for both women and men. But we see women working harder, playing the same power games as men, and as stressed out as men are. Also, what good is equal pay if women still go home to the second job of cooking and housecleaning and child care? Not much has changed on the home front. The advances that women have gained have come at considerable cost. We have adopted the male

assumptions about work and success. Is this the situation that we all want?

I am afraid that I have left you with more questions than answers. I look forward to hearing your concerns and your solutions. Thank you for your attention.