Anita Borg Institute
for Women and Technology

News

Senior Technical Woman Profile: Susanne Hambrusch, Division Director, CCF/CISE, NSF

Each month, we ask Senior Technical Women to share their stories and what they have learned. This issue's **Senior Technical Woman Profile** features Susanne Hambrusch, Division Director, CCF/CISE, NSF (on leave from the Department of Computer Science, Purdue University).

1. How did you decide to pursue a career in technology?

When I graduated from high school, computer science ('Informatik" as it was called in Austria) was a new major. I liked math and I liked fixing and building things and it seemed interesting. What "convinced" me to study computer science was however a rather random event. A magazine in the public library had an insert of a computer science aptitude test. It asked one to solve puzzle-like questions and word problems. One had to mail the answers in to get the score, which is what I did. A few weeks later I received a letter with my score (it was really a good score, but not perfect) along with information to sign up for their training programs. The letter built up my confidence and now I knew for sure what I was going to study. But I wasn't going to sign up for courses I had to pay for; I was going to study at the Technical University in Vienne which had no tuition!

I ignored the silliness of my decision making process for a long time, but there is a valuable lesson in it. Many decisions we make are determined and influenced by randomness. Asking young people to try different things and be open is the valuable advice.

2. Based on your own experience, what skill(s) or characteristic(s) do you think are most important for technical women to succeed?

The characteristics are probably not so different from other disciplines. My top three are:

- Enjoy what you are doing, have goals and dreams and passion
- Be determined and persistent, but know when to change course; don't be stopped by rejections and failure; if you never hear "no" you are not asking for enough or not living up to your potential
- Be willing to reinvent what you are doing and enjoy constant change

3. What was the greatest challenge you have overcome in your career?

For the most part, I liked the challenges I faced, even if I did not succeed. Thinking back at situations where I faced a challenge which left me angry and with feeling a lack of fairness, two incidents come to mind.

As a student in Vienna I experienced one situation I found confusing, disappointing and later outrageous. In a large-lecture required course, the professor stated during class that employment predictions for CS majors in Austria indicate that there will be fewer jobs for graduates than predicted. He suggested that female students might want to think about changing majors as they probably would not be pursuing a technical career (that was in the mid 1970's in Vienna). Many students found his comment funny and laughed. I found it bizarre.

I faced a similar incident when working at Siemens in Vienna right after graduating. In the

annual evaluation my boss, a male engineer, said, "Too bad you are a woman," which was meant as a compliment. It had a sobering effect on me, much more than the silly statement the instructor had made a few years earlier. Looking back, I would say that these attitudes played a factor when I decided to pursue a Ph.D. in the US.

4. How do you manage work/life balance?

I try to hire people to do things I want to get done and that can be done by others. This includes having someone to clean the house, do laundry, mow the lawn, do various fix-ups around the house. I don't have to do everything myself even if I believe I can do it better than the people I hire. Realize that not everything needs to be done by a perfectionist, that one needs to judge how much work to put into tasks one is asked to do, and that it is perfectly okay to say no (and suggest someone else).

Block out time for things you want to do. When my two children were little, I left the office at 5pm – period. I would be available again after 8:30pm, if needed, but I didn't want to miss the time with my kids. Find time for yourself, away from anything that can be stressful or remind you of all the things that have to get done.

Make decisions in a thoughtful way; consider all aspects to the best of your abilities. Once decided, don't agonize if it was the right decision, don't feel guilty, move on.

5. What advice would you give to women in high tech who want to consider an academic career, including advancement on the administrative track?

When considering an academic career, understand—already as a graduate student—the different academic paths and their expectations (e.g., a career in a research-intensive institution versus a career in a teaching-focused undergraduate-only institution). Graduate with a strong record and prepare in the best possible way. This can include, for example, a post-doc position or a visiting teaching position at a highly ranked teaching institution. Make sure you are passionate about your decision and the challenges and opportunities ahead. Attend a workshop on how to prepare and conduct an academic job search (e.g., a workshop offered by CRA-W), and listen to more than one opinion and view. Apply to a broad set of institutions, and hopefully you will get an offer you like. Realize that you are an Assistant Professor for a relatively short time, and these will be intense and at times stressful years. If you are passionate and enjoy what you are doing, they will be great years. Figure out what is valued and what counts in your department and in your discipline, establish your own research identity, build a network, have a mentor.

For advancing in management/administration, it is a good idea to take on leadership positions that slowly introduce you to management tasks and let you understand what you enjoy about them. Have a mentor whom you can consult and ask for advice. Identify good managers and leaders in your institution and look for opportunities to work with them. I learned a lot from watching people effectively and skillfully handling difficult situations. Before starting in a management position, consider taking a highly rated management training course.

6. How do you stay current in your technical field?

Staying current can be a challenge once a technical job becomes more focused on management. A great aspect about my job at NSF is that it is so easy to find about the latest results, trends, and achievements. This happens through meetings with researchers, reading proposals that get funded, attending workshops and conferences and other opportunities. As one moves into management, one may need to redefine how to stay current and how to keep up with technical changes in the field.

7. In your opinion, what (if any) are the remaining barriers faced by women in technology?

Women have a lot of opportunities in computer/technology related jobs. I believe there are young women entering a technical field today who may not realize some of the issues they are likely to face in their career. They may have been used to a fair and even playing field in school and have received attention at college with respect to internships and other opportunities. At some point, they will work with or for an individual who is a closet sexist or an open sexist. Those could be the male students who are convinced that women can't program, or they could be less technical colleagues or supervisors. They exist and some know how to act in a politically correct way. Closet sexists may carefully question one's technical skills, make traditional assumptions about the lifestyle of others, and let biases influence how decisions are made.

How to handle such situations depends a lot on the individual and the environment—and it can be tricky. Having a good relationship with a mentor will probably be very helpful and can provide perspective and support. One may decide to talk to someone sympathetic and experienced outside the organization or one may decide to talk to the supervisor (if not involved). A poor action is no action and letting feelings like anger, frustration, and guilt build

up.

Susanne Hambrusch is currently serving at NSF as the Director of the Division of Computing and Communication Foundation (CCF) in CISE. She is on leave from Purdue University where she is a professor of computer science. She received the Diplom Ingenieur in Computer Science from the Technical University of Vienna, Austria, in 1977, and a Ph.D. in Computer Science from Penn State in 1982. At Purdue, she served as the Department Head from 2002 to 2007. She has held visiting appointments at the Technical University of Graz, Austria, and the International Computer Science Institute at the University of California, Berkeley. Susanne's research interests are in query and data management in mobile environments, parallel and distributed computation, analysis of algorithms, and computer science education. She initiated two interdisciplinary projects on "Science Education in Computational Thinking" and "Computer Science for Education." She is currently a co-chair for CACM's Viewpoints section. She previously served on the editorial boards of Information Processing Letters and Parallel Computing, and she served a co-chair for panels and workshops for the 2010 Grace Hopper Conference. Susanne has served on the board of directors of the Computing Research Association (CRA) and the CRA-W.

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