



# On the Importance of Mentorship and Promotion of Women in Mathematics

## An Interview with Bernd Sturmfels

Director of MPI MIS, Leipzig & Professor of Mathematics at the UC Berkeley.

**In the 'math community' you are known not only as an excellent scientist, but also a great mentor and promoter of female mathematicians. What is your motivation to engage in these activities that cost additional time and effort?**

Mathematics is not a solitary activity but that research advances in a social context. That context is essential for what we call excellence. Excellence does not exist in isolation. And, I learned over many years of experience that diversity is an important ingredient in achieving excellence, as a community. Women bring a different dimension to our profession, and I learned to appreciate this very much. My first PhD student, Rekha Thomas, was female and she soon became a role model for others, and one thing led to another. The word spread, and after I joined Berkeley in 1995 many female students found their way into our group, and ditto for postdocs. It's been a terrific experience.

**Many female mathematicians that took part in our KWIM lecture series mentioned that having a mentor helped them considerably to succeed in their professional career. Why it is so important for young women starting their academic career in mathematics to have a mentor?**

It is important for everyone, irrespective of their gender, to have a good mentor. The macho image of the lone wolf does not work. The Perelmans of the math world are legendary but they are a tiny minority. Everyone else needs mentors who guide them through the many steps of their academic career. One of the hurdles that must be overcome along the way is the Imposter Syndrome<sup>1</sup>. In my experience, females tend to suffer more from this than males, and that is why mentors are especially important here.

**Speaking the language of math: what is the definition of a good mentor? What are the do's and don't's?**

Will you allow me to point me to the article 'Adventures in Mentoring' which I wrote a

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<sup>1</sup>The Imposter Syndrome refers to a belief of being less competent and knowledgeable than people around think. It is often connected to a fear of being exposed as a fraud.

few years ago for the Notices of the American Mathematical Society.<sup>2</sup> I think it contains some stories your readers might enjoy. To answer your question: A 'do' is listen. Always listen to the student. A 'don't' is being insensitive and to make assumptions. Never assume anything about your mentee. Find out who they are.

**You supervised and mentored over 60 students and even more post-doctoral researchers. Many of them were women. If one looks at the current list of your PhD students, an outstanding pattern emerges: the majority of them are women contrary to status quo in mathematics. Switching again to the math jargon: What is your formula to attract and empower talented women to do research in mathematics?**

One formula is to make them feel comfortable, and to get them excited to work with each other. In the Nonlinear Algebra group MPI Leipzig we are trying to create a very supportive environment, where everyone can thrive. Both men and women appreciate this. I don't mean that they shouldn't be competitive. Quite the contrary. Female mathematicians can be very competitive, and – if they find their own path – they will succeed. The list of role models in my field is quite long by now.

**Mathematics like other STEM subjects faces the leaky pipeline problem: the number of female researchers decreases as we move up the career ladder. What should be done to make talented female mathematicians stay in academia and to increase the number of female professors / women in leadership positions in research institutions?**

A mentor can help the young mathematicians to build a realistic career development plan, and to stay on track with that plan. Every single young female scholar counts. I try to speak to them as early as possible about the path for them to become a professor. Often they don't even know yet that this is happening to them when I ask them about their studies. Today, I will speak to one very talented PhD student in Konstanz, and tomorrow another one in Tübingen who is equally talented. I predict that at least one of these two women will be a professor at a German university in 2030. Want to make a bet?

Interview conducted by Dr. Gabriela Michalek, Coordinator of the "Konstanz Women in Mathematics" programme. Konstanz, 18<sup>th</sup> November 2021.

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<sup>2</sup><https://math.berkeley.edu/~bernd/mentoring.pdf>

