

the listeners. Like a toddler. He said he tested this when he was a PhD student. He wanted to know what “homomorphic vector bundle” means. So, he went to the math lounge and repeated those three words over and over again. Now he is an expert in complex geometry.

- **Waking up to Email.** Every mentor has a different style. So does every mentee. A while back, PhD students at Berkeley complained that they do not get enough attention from their advisors. My students think that they receive too much attention from their advisor. A friend once referred to my style as “the samurai method.” It involves a barrage of emails, usually sent between 4am and 5am. While this is fine for some, it does not work for others.

In the bullets above, I shared some perspectives and anecdotes on mentoring. It is most definitely not meant as a “how to” manual. There are many ways for you to be a terrific mentor. Make yourself available to young scholars. Help them in finding their perfect match.



Bernd Sturmfels

**Credits**

Author photo is courtesy of the author.

## Mentoring Graduate Students: Some Personal Thoughts<sup>3</sup>

My complex analysis teacher in college told me that I didn’t have the “smarts” for math. He strongly encouraged me to consider a career in banking. In graduate school, I failed my first qualifying exam. After defending my PhD, I applied for more than 150 academic positions, and I didn’t get a single bite. Perhaps out of pity, I was eventually offered a one-year visiting position with a high teaching load at a research university. I had been prepared to accept a position teaching high school algebra at a local community college.

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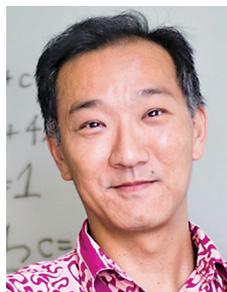
I am not quite sure how I successfully navigated the stormy seas that defined my early career in mathematics. What I do know is that I am now fifty-one years old, and I have enjoyed a privileged career as a research mathematician. I have had the pleasure of advising thirty PhD students, with most assuming postdoctoral positions at top Group 1 institutions. Furthermore, I am proud of the fact that mathematics continues to play a central role in their daily lives.

How did I make it? Good question. I do know that I needed the strong support of mentors who kept me afloat along the way. You might know their names: Paul Sally, Basil Gordon, and Andrew Granville. I learned a lot from these teachers, and I hope that I have been able to pass their wisdom on to my students of all ages.

Graduate school is hard! It is the place where students become leading experts instead of mere regurgitators of theorems. It is the place where doubt is meant to be replaced by confidence and achievement. This transformation is the result of hard work and luck. As a mentor, I now understand that one can succeed in our profession in many ways. Some students are whip-smart problem solvers (think Putnam Fellows and IMO medalists). Some students have a thirst for knowledge, learning everything they can. Some students have the gift of creativity. Some students have a knack for transporting important ideas from one subject to another. Some students have the ability to ask the right question at the right time. Of course, some students simply work very, very hard.

My job as the mentor is to figure out the skills that a mentee has and then to craft a research plan that best matches these skills. This includes steering students away from problems that are not a good match. This plan is something like a covenant. My students know that I am there for them when they are struggling. They also know that I will celebrate with them when they triumph.

Advising a PhD student is an awesome experience. It isn’t quite like raising a child, but I do recognize that I have a responsibility to do my best to guide a young person who has placed great faith in me. Although I am not quite sure how I earned the right to advise students, I hope that when my career is over that I will be remembered for taking the role of advisor very seriously.



Ken Ono

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