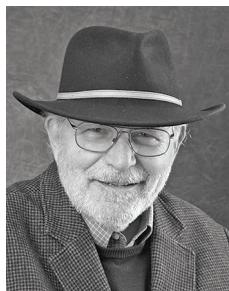


didn't have to question whether my research was of high enough quality to be funded by the NSF. I was wrong to not request NSF funding for two reasons. First, and very importantly, I eliminated the opportunity to financially assist the students and postdocs who were working with me and my colleagues. Second, I should have left the funding decision to the NSF and its review panels; they might not have had the same opinion of my productivity as I did. And what's the worst thing that could have happened? My research wouldn't have been funded, and I'd be right back where I started. I am reminded of my father's admonition: "If you are not failing every once in a while, you are just not trying hard enough." And, of course, there was my grandmother, who would tell me, "If you want to dance with a 'pretty girl,' you have to ask her." Even though I was twelve at the time and her advice was given in another context, her words continue to ring in my ears when I consider my choices in life.



Ken Millett

Credits

Author photo is courtesy of the AMS.

Should I Quit Mathematics?²

Francis Su

"Should I quit mathematics?" This was a difficult question for me to answer for all sorts of reasons, most of which had very little to do with mathematics. I was in my fourth year of my PhD program. I had already been a disappointing student to two PhD advisors—one who was mostly absent for the two years I worked with him, and the second who was difficult to please and quite unkind, letting me know that a "real mathematician" wouldn't do the things he felt I was doing. He was implying, of course, that I didn't belong in that category.

I had come to graduate school less well-prepared than my peers, and I had a rough transition, in part because my

Francis Su is the Benediktsson-Karwa Professor of Mathematics at Harvey Mudd College. His email address is su@math.hmc.edu.

²Reprinted from *Living Proof: Stories of Resilience Along the Mathematical Journey*, co-published by AMS and MAA, 2019.

DOI: <https://dx.doi.org/10.1090/noti1947>

mother was dying of ALS and I had a hard time focusing on my work. I was also meeting, for the first time, people who were supremely talented mathematically, and I felt I didn't measure up. Moreover, I wanted more life balance than I witnessed my professors having. All these factors contributed to a crisis of self-doubt that was slowly stealing my joy.

I had dreamed of becoming a mathematician, but I also did not want to continue in a day-to-day reality that felt oppressive. So, three-and-a-half years into a PhD program, I began asking whether I should leave and do something else.

If you're asking this question like I did, I want to affirm that asking the question is not a sign of weakness, but a sign of strength. You are taking control of a situation that has, until now, felt out of your control. Each of us who ask the question may ultimately answer it in different ways, but I want to share some of the good things that came out of wrestling with the question.

First, I realized that my dignity did not have to come from getting this PhD. Somehow, I had made it the ultimate marker of whether I was a worthy human being. And yet, when I reflected on my experiences, I saw instead that my most joyful moments of feeling loved and accepted came from people who didn't care whether I got a PhD. I also began to imagine other careers that I might pursue, and just doing that exercise felt freeing.

Second, I realized that comparing myself to other people was always going to be self-defeating, no matter what career I pursued. There will always be someone more skilled at things I feel I am skilled at. Becoming more centered in who I was (e.g., the things I love and why I love them), rather than what I could accomplish, has helped to free me from the pressure to compare myself to others.

Third, I realized that graduate school can give you a pretty skewed view of what being a mathematician is like. You are training at a research university where research is prized above all else. But there are many other important facets of being a scholarly mathematician: being an excellent teacher and communicator and mentor of mathematics is, I believe, equally important. In speaking with mathematicians outside the research bubble, I saw that it was possible to have a life balance that doesn't prioritize research over all else.

Now, having gone through this soul-searching has brought benefits. When I experience failure, it rattles me less than it used to. When I experience success, I don't cling to it too tightly. Because I know it's not where I get my dignity.

I'm also more willing to take risks—like sharing with you all that I have self-doubts and admitting that I have weaknesses—because I don't get my dignity from appearing successful or talented or having it all together. I also know that success or failure in a worldly sense has very little to do with talent, and that worldly success is truly not as important as the kind of human beings we are to one another.

In graduate school, I was fortunate when another professor suggested that I work with him. He had little reason to believe that I was going to be a successful student, but he took me as his student anyway. He exemplified what a true advisor should be, and the ways we need to be supporting each other.

But I also was realistic about this opportunity, and I gave myself a time limit. If at the end of a preset time period, I was making positive progress towards my PhD, I would stay and continue—and that's ultimately what happened. However, I also knew that, even if it didn't work out, I would do something else, and that alternative could be just fine. I could still love mathematics for its own sake while being involved in some other exciting career possibility.

In your own path, whatever happens, you can thrive. Nevertheless, I do want to say that despite what anyone may tell you, there is a place for you in the mathematics community that may not be visible yet from your vantage point. You should never have to leave because someone's discouraged you. If you do, that burden lies on the mathematics profession. We can and we must do better to welcome all those who love mathematics.

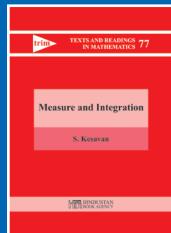


Francis Su

Credits

Author photo is courtesy of the author.

FEATURED TITLE FROM HINDUSTAN BOOK AGENCY



Measure and Integration

S. Kesavan

This book deals with topics usually studied in a master's or graduate level course on the theory of measure and integration. It starts with the Riemann integral and points out some of its shortcomings which motivate the theory of measure and the Lebesgue integral.

Starting with abstract measures and outer-measures, the Lebesgue measure is constructed and its important properties are highlighted. Measurable functions, different notions of convergence, the Lebesgue integral, the fundamental theorem of calculus, product spaces, and signed measures are studied. There is a separate chapter on the change of variable formula and one on L^p -spaces.

Most of the material in this book can be covered in a one-semester course. The prerequisite for following this book is familiarity with basic real analysis and elementary topological notions, with special emphasis on the topology of the N -dimensional Euclidean space. Each chapter is provided with a variety of exercises.

Hindustan Book Agency; 2019; 252 pages; Hardcover; ISBN: 978-93-86279-77-4; List US\$45; AMS members US\$36; Order code HIN/77; bookstore.ams.org/hin-77

Titles published by the Hindustan Book Agency (New Delhi, India) include studies in advanced mathematics, monographs, lecture notes, and/or conference proceedings on current topics of interest.

Discover more books at bookstore.ams.org/hin.

Publications of Hindustan Book Agency are distributed within the Americas by the American Mathematical Society. Maximum discount of 20% for commercial channels.

