

Steven Strogatz, Guest Speaker, at Don Joffray's Retirement Party



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Guest speaker Steven H. Strogatz '76

Hi, everybody, and good evening. I'm really thrilled to be here tonight. Thanks to Russ Wiegel, Audra Garling, and Nat Follansbee for inviting me. This happy occasion gives me the chance to say thank you to two of the teachers who made a difference in my life, Jane Archibald and Don Joffray.

Jane, thank you for teaching me how to write. I was a student in Jane's course on "The Short Story", and I can still remember my horror the first time she passed back one of my corrected essays. What a bloodbath – the paper was covered with more red ink than black. But the remarkable thing was how constructive and detailed her criticisms were. She even rewrote entire paragraphs, to show me exactly what she had in mind. On later essays, Jane always noticed my attempts to vary the rhythm or tighten the structure, and she rewarded those wobbly efforts with comments like "Whee!" whenever I got it right. After a few rounds of that, I was hooked. I ended up taking three or four more courses with her, and learned about things I'd never dreamed I could be interested in, like the stories of Edith Wharton or the poetry of e e cummings.

With Don Joffray, it was a different story. I already knew I loved math when I sat down in his calculus class in Founders Hall, Room 8. But Joff taught me that the world of mathematics was so much richer than I had ever imagined. You see, Joff teaches math like nobody else.

First of all, he uses his love of sports and nature to make math come alive. Here's a typical example, as recounted by one of his former students, Aaron Byrne '91:

"One Monday morning, Adam Doctoroff and I were discussing the Patriots game that was played on Sunday. The Patriots had intentionally taken a delay of game penalty to back the ball up by five yards before they attempted the game-winning field goal. The rationale was they would have a better angle on the uprights. Doc and I were debating if they really got a better angle out of this maneuver. Joff overheard us, told us all to get our coats, and we spent the class on the football

field trying to figure this out mathematically. Our methods were rough and very imprecise, but we decided that the best angle actually was about five yards into the end zone (at least on a high school field). Our conclusion was, regardless of where the best position would be if we were taking accurate measurements, that the Patriots shouldn't have backed up the ball before the field goal. The point: Joff feels math is something you live, not something you read about in a book. The Patriots missed the field goal and lost the game, by the way."

Joff's favorite themes involve wind and water. As Leah Gold, '91, recalls:

"Joff would often come in and start class by telling us about what a gorgeous day yesterday had been for sailing or canoeing or some other outdoor activity. (He seemed to favor boating.) Then he would tell us about the math question that just popped into his head while he was doing this activity and we would spend some time trying to discover an answer. For instance, these might be related rates questions about his speed on the sailboat versus the wind speed, or comparing his progress to the progress of runners along the bank, or how to tack in order to go in the direction he wanted to go, despite the wind blowing in a different direction. In the spring when the river was flooding, he thought of some problems involving the rate of flooding and how high the flooding would have to be in order to cover the playing fields to a certain depth."

Another memorable characteristic of Joff's teaching style is that he loves to tell his classes about his former students. In his retelling, some of them began to assume epic proportions, just shy of Newton and Pythagoras. I can still hear Joff's voice, awestruck and reverent, as he told us how Jamie Williams '73 had somehow managed to come up with an exact formula for the famous numbers known as the Fibonacci sequence. How he did it, no one knows to this day. It's the stuff of legend.

You didn't even have to solve a problem – just asking a great question was enough to enshrine you in Joff's pantheon. I remember hearing about "the Alex Feldman '74 problem." Alex wondered about the path that a kayak would take when it crosses a river (now where did he ever get the idea for that problem?). The question was, if you start opposite some point on the far shore, and then relentlessly paddle toward that same point, what path does your kayak actually take, given that it's also being carried downstream?

I'm not really sure why Joff told us those stories, but for me, they showed that math is a way for ordinary kids to be curious and creative. It's not just for Euclid – after all, Jamie Williams found a formula for the Fibonacci numbers and Alex Feldman has a problem named after him! I have never seen a teacher who openly admired his students as much as Joff. He showed so much love and so much humility in the way he told those stories. It made many of us want to be his hero, just as he was ours.

Over the past twenty years, Joff and I have written dozens of letters to each other. Whenever I see a neat math problem, I'll write to him, or he'll write to me with a brainteaser that came up in his calculus class. Here's a typical opener from Joff's letter to me of April 8, 1995:

"Dear Steve, Well, my heart rate went up when the familiar brown envelope showed up in my mailbox. What a lovely present! I made copies of the math text of your pages and gave it to a class of seniors who are in the midst of multivariable calculus with gradients."

Notice that he says he gave them "copies of the math text" – I guess that means he cut out all the juicy personal parts. Like anybody else, we've both been through a lot of changes, and some of our ups and downs are recorded in those letters. But one thing always stays the same – it's the ongoing story of a friendship between a teacher and a student, a tale of math between friends.

Let me conclude with some words from Jonathan Marek, another star in that remarkable multivariable calculus class of 1991. He writes,

"I'm sure I'm only one of many of Joff's students who stayed up until midnight doing math problems that weren't homework just because he inspired me to try them, who became a math major because of him, who wrote back to him with math problems (although not nearly as much as I should have), who know that he was the best teacher ever in my life, who think of him fondly and regularly, and who attribute a part of my success to his inspiration."

Thank you Joff, for being an inspiration to all of us.

Thanks to Aaron Byrne, Adam Doctoroff, Leah Gold, Jonathan Marek, Nick Phillips, and Stuart Samuel for sharing their Joff stories with me.

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