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## Scientific puzzler

**How chemistry professor George Barany achieved the ultimate crossword glory.**

BY RHODA FUKUSHIMA  
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George Barany has quite the resume.

A Hungarian Jewish immigrant, Barany was a university graduate student at 16, a Ph.D. recipient at 22. He's currently a University of Minnesota chemistry professor. He has co-written an opera. He also has dabbled in creating crossword puzzles.

Now, Barany, 50, can add this plum to his accomplishments: publishing a Sunday New York Times crossword puzzle, considered the highest of all possible crossword achievements.

Barany and collaborator Michael Shteyman — whom he has never met — created the "Sound of Music" crossword to commemorate composer Wolfgang Amadeus Mozart's 250th birthday. The puzzle ran in last Sunday's Pioneer Press.

"I thought it would be fun to do," Barany says. "We had this once-in-a-250-year opportunity to write about Mozart."

Here, Barany chats about the intricacies of constructing a crossword.

### **Q. Was this your first puzzle for the Times?**

**A.** Yes. Michael called me around Thanksgiving with the idea. He said, "You've always wanted a Sunday New York Times puzzle. Maybe this will be your chance."

### **Q. How do you create a crossword?**

**A.** The standard dimension of a Sunday puzzle is 21-by-21 (squares). It was a godsend to have "Wolfgang Amadeus Mozart" be exactly 21 letters. We decided — and we had help from NYT puzzle editor Will Shortz — to have the letters of Wolfgang Amadeus Mozart throughout the puzzle, circled. Only after completing the puzzle would they learn the name.

After you figure out the themes, you fill out the grids — the pattern, where to put the white squares and the black squares. There are a lot of rules about symmetry. It's really hard.

Then, you develop the clues. Shortz encouraged us to go out on a limb and come up with unusual clues. We had the word, "hall." My clue for that. "three-door Monty." He didn't use it.

### **Q. You and Michael have never met in person; he found you because of a science crossword you published. How did your collaboration work?**

**A.** It's all done on cell phone, instant messaging and e-mail. There's creative tension, but it just pushed us to have a good final project. For example, I was going to use "7-time Tour de France winner" for the word "lance." He said, 'Come on. Everybody knows that.'

I have a network of friends who solved the puzzle before we sent it to Shortz. They made useful suggestions.

### **Q. What makes a good crossword puzzle?**

**A.** The main thing is that it has to be fun to solve. You don't write the puzzle for yourself. It has to be interesting. You don't want too many groaners.

### **Q. What makes a good clue?**

**A.** It shouldn't be totally straightforward. Complete-the-blank clues tend to be frowned upon. It has to be playful, maybe with a little misdirection.

### **Q. Can a person make a living creating crossword puzzles?**

**A.** There are a few who make a living out of it. The pay is really low. For the Sunday New York Times puzzle, it's \$700. For weekdays, it's \$150. The New York Times pays a lot better than most.

I said I wanted \$1. I will never spend that. Michael can have the other \$699 and use it for his entrance fee for the MCATs (Medical College Admission Test).

### **Q. Can you describe the cachet that comes with having your crossword published in the Sunday New York Times?**

**A.** Someone from our synagogue sent an e-mail to my wife: "I just did this delightful, brilliant crossword puzzle from the New York Times. I was wondering if it was your husband."

I said, "See? Your friend said I was brilliant." My wife said, "No, she said the puzzle was brilliant."

My son was a finalist in the Intel Science Talent Search. My daughter had a 26-match winning streak in tennis. My wife was on the Roseville school board. This is a family where it's hard to impress each other.

**Q. Do you listen to Mozart?**

**A.** I've been adoring his music since I was a kid. The first opera I ever saw was a Mozart opera. I was 7.

**Q. What do you do when you're not creating crossword puzzles?**

**A.** I work all the time. I'm doing research in the field of peptide chemistry. Peptides are small proteins built of amino acids. I'm teaching organic chemistry. After the final is over, I give them a puzzle to work on as a bonus, so they can have something to do during the holidays.

I do crossword puzzles to relax. I try to do the Sunday Times puzzle every Sunday morning. On Jan. 22, I opened the Times — and there was nothing for me to do, because it was my puzzle that day. (The puzzles run a week later in syndication.)

**Q. Are there skills from chemistry that transfer well into crosswords?**

**A.** The kind of mind that can do crossword puzzles is also the kind of mind that makes for a good chemistry student. You need to be knowledgeable and well-informed, but you also need organized disorder. Creativity involves taking some chances, thinking outside the box.

**Q. What's next?**

**A.** I have a couple of puzzles in the works. Some are done, some in process. My department head asked me to write a puzzle in the alumni newsletter. It's pretty cool. It works in a bunch of names of chemistry professors, but in a funny way.

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