Nick Baxter (BS ‘79 Math, MS ‘80 CS) is a software product manager by profession but his real passion is puzzles. It’s not just a matter of rushing out to get the Sunday paper with a sharpened pencil. He has been at the pinnacle of the international competitive puzzle world for 16 years. Over that time he has risen from being a high-ranking player to become captain of both the U.S. puzzle and sudoku teams.

Baxter appreciates puzzles as more than just an intellectual challenge. To him they are often art—he has an extensive collection—and a uniquely rewarding medium for group interaction. On a recent “treasure hunt” in New York promoting the National Treasure sequel, he and each of his team members won $15,000 in free travel. Perhaps he’ll use that to get to the World Puzzle Championship this fall in Lithuania.

**What do you do as the captain of the U.S. puzzle?**

Well, along with Will Shortz, who edits the New York Times crossword puzzles, I run the U.S. puzzle team and the U.S. sudoku team. With the sudoku team it’s pretty obvious what we do—we do sudoku puzzles! But there’s actually quite a number of varieties of sudoku, each starting with the same general theme of a grid and multiple sets of typically nine unique elements, but then enhanced with other geometries or mathematical constraints—a lot more than just what you see in the newspapers.

The U.S. puzzle team concerns itself with puzzles of a more general nature. Not just sudoku, but any puzzle that is both language and culture neutral. Because these are international competitions, we must maintain an even playing field for competitors from all countries, who speak any language, so there can’t be any specific advantage for English speaking, or Japanese speaking competitors.

We run U.S. championships to select teams for international competition. So there is a U.S. Sudoku Championship and a U.S. Puzzle Championship every year now.
Is there any kind of principle, or set of principles that people should have in mind when they approach a puzzle?

I’d say one key thing is to avoid frustration. If you’re frustrated you can become self-conscious, and that can very much disrupt your thinking. When solving a puzzle, some people can fall into the trap of not treating it as something that’s supposed to be fun. Instead they treat it as a test of their intellect—some can rise to that challenge, but some people wilt under the pressure. Be comfortable with your solving skills and don’t get frustrated.

Then draw on your experience. Designers do the same thing, so it’s only fair! Getting into the head of the designer can actually help. What was he or she thinking? What, possibly, were his or her goals? In physical puzzles you can also get clues from the composition of the puzzle. Obviously this doesn’t apply to things like, say, a sudoku or a Rubik’s Cube, where there’s nothing hidden. Then, hopefully, the experience of having solved similar puzzles will help.

Tell us about your puzzle collection and what you enjoy about that.

I started collecting in 1992. My personal collection probably has around three thousand puzzles. I’m frequently asked why I buy puzzles that I’ve already solved or know the solution to. Many are pieces of art, and should be treated the same way. When you buy art and display it on the wall, you don’t just look at it once and then put it in a closet. It stays there because it is something that you deeply enjoy and will appreciate over time. The same is true for puzzles. That being said, much of my collection is not on display because there are just too many of them; instead they are in boxes or some kind of storage, waiting their turn to get cycled into the display to be enjoyed or shared with others.

Another question I’m frequently asked is, have you solved them all? And the answer is, of course not! Some people collect just to collect, and solve very few of the puzzles they own, appreciating them merely as works of art. But I appreciate both the physical and enigmatic beauty in puzzles, and solving them is just as important as looking at them. Often a friend will ask if I’ve solved some newly released puzzle, and I might respond “I haven’t spent much time with it yet.” We joke that the response is a euphemism meaning “the puzzle kicked my ass!” Sometimes that is true.

You even auction puzzles from the collections of others.

Over time, one can amass quite a lot of puzzles without realizing it. And that does raise the question of what happens when you get tired of puzzles. It’s hard to believe, but that does happen! I have seen people who have collected puzzles for many years and suddenly one day say, this doesn’t do it for me anymore. Or, for financial or health reasons, they decide it is time to liquidate.

The owner of one of the largest collections in the world suddenly became ill and passed away a couple years ago. He consigned his collection to me, and I think he must have had over ten thousand puzzles in his collection. Over the last two years I have been slowly cataloguing and selling his puzzles through my own online auction. It’s been a long process, but also a very enjoyable and rewarding one. I have had the occasion to see many puzzles that—for a variety of reasons, either they are very scarce or very expensive—I would have never had the opportunity to experience, and I have been able to enjoy them all, so that’s been very exciting.

Puzzle solving can be quite social, too.

Surprisingly, yes! The stereotype is that puzzles solving is a solitary activity. And that certainly seems obvious for crosswords or sudoku. But it’s not necessarily true. At events like the World Puzzle Championship, after every round the contestants immediately get together and start discussing the clever bits of logic to solve particular puzzles, or perhaps a particular pitfall they all managed to avoid. The shared experience is very intellectual, very stimulating. The team-solving at the WPC goes even a step further, where multiple solvers can feed off each other in pursuit of a common goal.

There are now a number of competitive and social puzzles hunts that are run over evenings or the course of weekends. They started in the ‘80s with the MIT Mystery Hunt and the Stanford Game, and are essentially treasure hunts with puzzles as the clues that might lead you around a neighborhood, or the entire Bay Area. I recently did a treasure hunt that was a promotion for the National Treasure sequel, and my team won a trip to the New York movie premiere and big travel prize. So solving puzzles can be profitable too!

Is there a connection between what your studies here and your puzzle passions since then?

Around 1980, the Rubik’s Cube showed up on the scene at the Stanford Bookstore. Whoever was teaching the graduate CS algorithms class that quarter saw the Cube and thought it might be a nice coursework assignment to devise and implement an algorithm to solve it. What they did was entirely shut down the computer science department for a couple of weeks! Everyone was doing it. I was not in the class, but got sucked in as well; it took a day or two to sort it all out before I could get back to other things. I suspect that just about everyone else in the department suffered a similar disruption in their work.

A couple years earlier, when I was a math major, I took CS150—Introduction to Combinatorics. It was a fabulous class taught jointly by Bob Tarjan and George Pólya, who was about 90 years old at the time and famous for his contributions to the field as well as his classic book How to Solve It. I thought it was strange that the Computer Science department was teaching what should be a math class. I already thought that math was fun, but this math was really fun, so maybe that’s why the math department wasn’t teaching it! Anyhow, it started me thinking that Computer Science was really the better place for me. And it got me thinking of math more as a tool for designing algorithms, and solving real-world problems—like puzzles!

So my academic background allows me to better appreciate design and solving techniques for certain types of puzzles. Puzzles like the Rubik’s Cube have very deep mathematical principles, such as group theory and combinatorics. But many experts have never really “solved” the Cube themselves and instead just memorized Fridrich or some other published algorithm. That’s too bad because they never get to see the most beautiful part of the puzzle.