

In Main Street North, Tiankai Liu '04 is the go-to guy if you're confused by calc, having trouble with trig or just looking for a little after-hours help with your math homework. Which makes perfect sense, since Liu is one of the top-ranked high school math students in the world.

His prowess is well-documented, with top finishes in the last four USA Mathematical Olympiads (USAMO), including first-place in 2002 and 2003. He has won two gold medals at the International Mathematics Olympiad and another two in the International Informatics Olympiad, a computer programming competition. In the parlance of sports, Liu is an exceptionally gifted player who is well focused on training, competing and improving his game. Who wouldn't seek his guidance with a tricky math problem?

"It's fun to explain math to people who are interested in learning about it, but for whatever reason, aren't doing too well in their classes," says Liu, an unassuming four-year senior from Saratoga, CA. "Whenever people come to me for help, I hope I can give them some sense of the beauty I see in math."

Math instructor Zuming Feng, the current coach of the USAMO team and Liu's mentor for the past four years, says he has been "consistently amazed by Tiankai's powerful work," adding that he has learned much from their relationship. "Tiankai cares about notations and the structure of higher concepts, and he is willing to get his hands dirty by investigating the examples necessary for him to understand them completely. Many times he is able to see insights, connections and backgrounds of problems that were missed by the problem's posers."

According to Liu, "One of the great things about math is that you can surprise yourself. Sometimes when you're thinking about a math problem, it can be very mysterious—you have no idea what's going on." It's not unusual for him, he says, to mull over a given problem for days, even weeks, at a time. "And then a single idea can make everything clear."

Prior to middle school, however, math was just another subject to Liu. It wasn't until the summer after fifth grade, while attending a Center for Talented Youth camp, that he got his first taste of math beyond

his public school curriculum with a course called Inductive Reasoning. In sixth grade, he began to take his talent more seriously, entering competitions. By seventh grade, he placed fifth in the national Mathcounts competition; the following year, in eighth grade, he placed second.

Liu—whose family lived in both China and Germany before settling in California—credits his parents for his early interest and proficiency in math. "They are both software engineers and mathematically inclined," he explains. "They didn't push me that hard, but just being in that kind of environment I was surrounded by math all the time."

While math is his primary passion, Liu has many other academic interests as well, which is why he landed at Exeter rather than a high school geared specifically to math and science. "I was looking for the best all-around education I could get," he explains. "Because I'm better at math than I am at a lot of other things, it's fun for me to do. But I would like to be better at

history, literature and other subjects, which is why I chose to attend Exeter."

When he first arrived on campus, Liu imposed a very rigid study regime on himself. "I had this idea that I wasn't going to talk to anyone," he recalls, "that I was going to lock myself in my room and stay up until 11 o'clock every night studying." The realities of dorm life, however, put an end to that idea: there was just way too much going on and Liu says he didn't want to miss out. "Most of my interests come from my dormitory. That's where I've made my closest friends, and through them, I've been exposed to lots of different things."

During his time at Exeter, Liu has served as head of the Student Council budget committee, joined the Glee Club and written for *The Exonian*, where he was opinions editor this fall. He is also captain of the Academy's math club and team, where he serves as a role model and resource for the other students. "Tiankai is a leader in the dorm, in the classroom and in the math club," says Feng. "He never uses his knowledge to embarrass or impress. Instead, what comes through are his love for the subject and the desire for his colleagues to see the beauty and power of mathematics."



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