

How to succeed in grad school? Play more tennis.



Nov. 3, 2009 | *UW Bioengineering*

Academic success depends on time in the gym? Maybe.

John Medina offers it as one of five take-home points for new UW Bioengineering graduate students.

Medina, a developmental molecular biologist and affiliate professor in UW Bioengineering, is author of the *New York Times* bestseller *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School*. At the new graduate student orientation, he morphed the rules into five surprises — maxims previous graduate students didn't anticipate, but found invaluable.

Here's the scenario for all Bioengineering grad students: They are bright and used to success. They are linear thinkers. They are inclined to work hard — and harder — to overcome obstacles. Make a plan and get there. Simple enough. But graduate school gives most of them an experience they weren't looking for — failure, in fact, repeated failure.

To help them face this inevitability, Medina matched his brain rules with "wish-I'd-known" insights from experienced graduate students, and together they came up with five surprises.

Surprise No. 1: Take it to the gym. Spending time getting buff may seem counter-intuitive, but Rahber Thariani, a graduate student in Paul Yager's lab, credits being very deliberate about daily exercise with his success in the lab. "I was three to four times more productive in the lab when I spent time on the tennis court," he said. "Find out what decompresses you emotionally and do it daily." And you don't need to be an athlete to benefit. Medina, who spends every day on the treadmill while reading e-mail, is watching his weight and stress level go down.

Surprise No. 2: Scientific research sits on the bedrock of the unplanned and unanticipated. Experimental success in science isn't always predictable; progress is often more unexpected and reactive than planned and deliberative. Thariani and the other student speakers, Mandy (Susan) Lund (Cecilia Giachelli lab) and Shivang Dave (Xiaohu Gao lab), each described experience with a troubling lack of control in the scientific process.

Persistence and a certain intellectual toughness is the road to achievement, Medina says. Ninety percent of experiments end in failure — that's huge for students who've known only success. The thought creeps in, "if I can't do it there must be something wrong with me." It is when things are failing that students need to go to their advisor. It's not you; it's science.

Also, take very good lab notes so you can access your thoughts when you are re-working that failed experiment.

Surprise No. 3: Show me the money — maybe. A prominent, well-funded lab may or may not be the key to success. Small labs can be happier, more innovative places, and sometimes bring the best out in students. The best predictor of happiness, Medina notes, is how people relate to each other on a daily basis, regardless of funding, prominence or size.

Surprise No. 4. Though science often relies on serendipity, chance favors the prepared mind. And the most flexible. Historical examples of this tension abound, from Edward Jenner's insights into smallpox to the invention of Teflon. Go with your ideas, but be willing to end up someplace else.

Surprise No. 5. Whether a principal investigator is tenured can affect a graduate student's experience. Tenured and tenure-track faculty members face different career challenges, which have pros and cons depending on the student's goals. Tenured faculty may have better funded labs but students generally don't work directly with the principle investigator. Faculty members closer to the beginning of their careers are often more technically savvy.

Just remember: It's not you; it's science.

Related resources:

[Brain Rules](#)

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