When Professor Kalyan Raman alerted Alex Walford (MSIMC09) to a new project, his e-mail was “kind of mixed up,” peppered with exclamation marks and odd spacing. He wondered if they could meet sometime soon—say, in the next two days—so he could “brief” her. Walford was intrigued: What could be so imperative?

It was the Bass Diffusion Model, originally created to predict a product's life cycle, and Raman had finally advanced the formula after having wrestled with it since 1991. When Walford, a student in Raman’s "Database Marketing and Analysis" class, arrived at his office, he launched into a 90-minute lecture on the model, which can predict not only the future sales but also the margin of error of those forecasts. Raman’s Ph.D. dissertation adviser, Frank Bass, first designed it in 1969, and Raman’s progression of the model was done in collaboration with Dipak Jain, former dean of the Kellogg School of Management.
When he was 19, his father gave him his first calculator, a chunky Texas Instruments he’d bought in Germany. “I was so proud to have it,” Raman says. “He grabbed my legal pad from me and was scribbling all these charts and equations, and I’d never seen anybody so excited. I was excited, too. I went home and told everybody I knew.”

Raman’s ability to simplify the complex and animate the dull earned him great respect his first year at Medill. Now, as he begins his second year as an IMC professor, he’s making noteworthy strides on classroom enterprise and personal research: how to predict the spread of swine flu, how shunts can operate more effectively, even how a nuclear arms war could be averted.

Raman is a broad-minded, quick-thinking applied mathematical scientist, which means he doesn’t wear a white lab coat, but he launches equally complicated experiments, analyzing data and crunching numbers for marketers and, curiously perhaps, for soldiers.

In a wounded economy, his expertise is crucial. He can identify the point of optimum operation, when the best possible results flow from not too little or too much spending. The $50 you spend on sugar for a two-week period may yield maximum joy for the average person, while the $100 you spend on sugar for the same period may be too much for another.

No wonder the German company that makes Scabo, praised because it's aero dynamic, didn’t wear a white lab coat, but he launches equally complicated experiments, analyzing data and crunching numbers for marketers and, curiously perhaps, for soldiers.

Raman tries to dissolve the math phobia that can creep into students. In a course description for “Database Marketing and Analysis,” he wrote, “This does not require great mathematical fluency, but it does require a deep conceptual understanding of the methodology and a thorough knowledge of each technique’s strengths, weaknesses, limitations and its applicability to different problems in IMC and business areas that are closely linked to IMC.” That’s classic Raman: gentle reassurance ushering in high expectations. “It’s pretty hard,” Waldorf says of the class. “But Kalyan is great at taking something incredibly complicated and convoluted and making it digestible.”

She’s most impressed by Raman’s insatiable appetite for learning, which leaps across disciplines with frequency and ease. He reads about advanced physics and philosophy for pleasure. “Some of my interests might be considered a bit arcane,” he says. “But the funny thing is I’ve always found at some point you’ll use something that you never thought you would have a practical application.”

Raman is a broad-minded, quick-thinking applied mathematical scientist, which means he doesn’t wear a white lab coat, but he launches equally complicated experiments, analyzing data and crunching numbers for marketers to eliminate scary, costly guesswork. So I began to ask myself, what if we make the switch more sophisticated, a valve that continuously adapts itself to facilitate fluid, rather than all or nothing? That’s where having a knack for your light switch rather than just on or off.

To devise a mathematical model for such regulation, Raman discovered a connection to the Bass Diffusion Model. “You can use the same model,” he says, “but it gives you a foothold, so you say, I have this, what do I do? Do I add a few more to the ladder? Do I need to put an engine on it?”

Raman successfully adapted the model and now, encouraged by the medical community, is having it patented. It could drastically improve the performance of shunts—a medical contribution Raman never expected to make.

“Here I’m walking into a conference where everyone has the initials MD after their names—I figured they’d probably bore me, talk over my head,” Raman says. “Instead, I find there is this big gap in the math. It’s a matter of being open to new ideas across disciplines. I think the work I’m doing is a problem that opened up and closes—that is, probably bore me, talk over my head,” Raman says. “Instead, I find there is...