WPI School of Business
Coleman Fellows Profile

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Dr. L. Ramdas Ram-Mohan, Professor, Physics and Electrical and Computer Engineering
2012 Coleman Fellow

Early in his career as a theoretical physicist, L. Ramdas Ram-Mohan pondered how he could bring the power of such an esoteric branch of science to bear on the down-to-earth challenges we face in our daily lives. Even as he delved into the mysteries of elementary particles Ram-Mohan was taking his first steps down the entrepreneurial road.

Ram-Mohan, who has taught at WPI since 1978, has conducted extensive research in, among many other things, the optical properties of quantum semiconductor heterostructures. Designing incredibly complex and sophisticated devices such as quantum well lasers required time-consuming calculations to create just the right layered semiconductor, atomic layer by atomic layer. Tweaking any aspect or component of a design resulted in exhaustive recalculations.

Quickly realizing that this work was best done by computer modeling, Ram-Mohan started to develop software to do just that in the late 1980s. Surprisingly, he got a mixed reception from industry giants such as IBM, so he decided to start his own company, Quantum Semiconductor Algorithms, Inc. “This company has provided me with an experience that is completely out of my academic framework,” said Ram-Mohan. “I learned everything on my own – how to make presentations, how to apply for grants. It has been an invaluable experience.”

The success of QSA has enabled Ram-Mohan to lend a helping financial hand to WPI students, spending up to $150,000 to hire them to work for his company during summers. “They’re getting experience in working at a real company, how to write software at an industrial level, and how to write papers that come out of that research,” added Ram-Mohan. “They get real-life research experience and get prepared for the marketplace.”

Nominated to the Coleman Fellows program by fellow WPI professor Christopher Lambert, who saw the value in what he was doing with QSA, Ram-Mohan has been eager to preach the entrepreneurial gospel to students and faculty alike.

“I tell my colleagues that academic research and entrepreneurship are not incompatible,” states Ram-Mohan. “(Starting a small company) creates another stream of research support which can be extremely beneficial for both themselves and students.”

As a Coleman Fellow, Ram-Mohan emphasizes the symbiotic relationship of entrepreneurship and research to his students at every level, whether it’s freshman physics or graduate programs. “During my lectures I talk about my company and entrepreneurial activities with my students, encouraging them to think like entrepreneurs and figure out ways to bring quantum mechanics to the marketplace.”