Elke Rundensteiner, Professor of Computer Science, Founding Director of the Data Science Program
2014-15 Coleman Fellow

Just because Elke Rundensteiner isn’t launching a commercial start-up or renting space in an innovation incubator to work on a new, disruptive big data technology doesn’t make her any less an entrepreneur. No. Elke Rundensteiner is an academic entrepreneur, applying entrepreneurial processes and strategies to co-develop an innovative data science program and graduate degree at WPI that is meeting the tremendous demands of customers – both students interested in acquiring entrepreneurial data science skills and companies looking to hire employees with those skills.

“It’s really about Big Data,” said Rundensteiner. “It’s teaching students how to collect large amounts of data and store it safely, how to analyze data using statistical machine learning techniques with open-source cloud computing infrastructures to find insights and make predictions, how to visualize those findings, and how to talk to stakeholders to guide them in making data-driven decisions.”

If this was a commercial entrepreneurial venture, the launch would be considered an unmitigated success with a remarkably fast ramp-up. The program already has “investors” lined up to support it, in the form of major companies looking to hire the program’s graduates. “It’s been a major success and this has only been our first year,” stated Rundensteiner, “with our first graduates receiving promising job offers they only would have dreamed about before. Some students garnered offers in the range of $110,000 and above as starting salaries.”

To make it all happen, Rundensteiner led a collaborative team of fellow WPI professors from the Computer Science Department, the Mathematical Science Department, and the Robert A. Foisie School of Business, formed an Executive Industrial Advisory Board, and led the charge to cluster hire several additional high-caliber Data Science faculty to help expand WPI’s Data Science educational and research endeavors -- all while concurrently admitting the first cohort of students to the program.

The Data Science curriculum features an innovative capstone experience called the Data Science Graduate Qualifying Project (GQP), adopting and adapting WPI’s hallmark undergraduate education approach. Student teams led by Data Science faculty tackle real-world industry problems in what is essentially a graduate-level version of WPI’s project-based MQP requirement. “They’ll get trained in exactly what the industry needs, not only bringing the latest skills and technologies they have learned to industry, but also picking up and practicing new skills critical to industrial stakeholders, including entrepreneurial and communication skills. This is a great way for the WPI students to closely interact with companies and showcase their abilities,” commented Rundensteiner. “It will also help them gain the experience they’ll need to launch their own companies, if they so choose.”

To ensure that her graduate students are adequately prepared to enter the marketplace, Rundensteiner is working with faculty colleagues and Executive Industry Advisory Board members to offer a class that will introduce graduate students to guest entrepreneurs. Fully embracing the Coleman Fellows program’s mission to promote self-employment through entrepreneurship, this class provides students with opportunities to learn necessary skills and receive real-world lessons on how to be successful entrepreneurs.
With everything she does to help her students prepare for entrepreneurial careers, Rundensteiner still has a piece of advice for them after they leave the WPI fold. “Never stop learning and looking for opportunities,” Rundensteiner recommends. “The field of data science is changing rapidly. Ten or fifteen years ago, some of the major players in this field didn’t even exist. Right now is an amazing time for start-ups again, particularly in the data science field. In putting together our ideas for the GQP projects we talked to a number of start-ups; one common theme I heard was that nowadays one can jump-start big-data projects using modern open source software infrastructures and accomplish in six months what used to take slow-moving, traditional companies years to achieve. This gives you a major head start and competitive edge as a young company over the old-timers.”

“If you have an interest in entrepreneurship, you can make a major difference. There are so many open source tools available now that enable you to put together a business and add value in new ways unfathomed to date,” Rundensteiner added. “It would make things so much easier. You could be the new Facebook. Now is the right time to delve into startups.”