

Data Science at the Simon Business School

► The world of business is changing fast, and data science is playing a key role in its transformation. Many of those making the biggest contributions to their fields are embracing the power and potential of data.

Although business executives have been analyzing data for years, the difference today is the sheer proliferation of it. We now need to create and wield new tools to mine, analyze, and use information in the most meaningful ways—and we need people with the expertise to do it.

Simon Business School is ready. Students here develop a data-oriented mindset from which they can devise the frameworks needed to solve complex business problems. Simon's programs leverage the school's strong reputation of training students with quantitative analytic skills. Such data-rich skills are essential in a variety of business disciplines, from marketing to operations to finance and beyond—more so now than ever.

Simon and the Goergen Institute for Data Science

The University of Rochester intends to be among the world's leaders in data science. The University's data science initiative is the centerpiece of its five-year strategic plan for which it has committed \$100 million. That initiative includes the recent creation of the Goergen Institute for Data Science and the construction of a state-of-the-art building to house it, which will be named Wegmans Hall. The Goergen Institute plans to dedicate its new home in the fall of 2016, with complete building occupancy by the winter of 2017. The University has also recently hired 14 new faculty in areas in which data science plays a critical role.

Simon is an important contributor to the University's commitment to data science. Its outstanding faculty members understand business, and they value analytics. They continually pursue industry-influencing research while developing new classroom content.

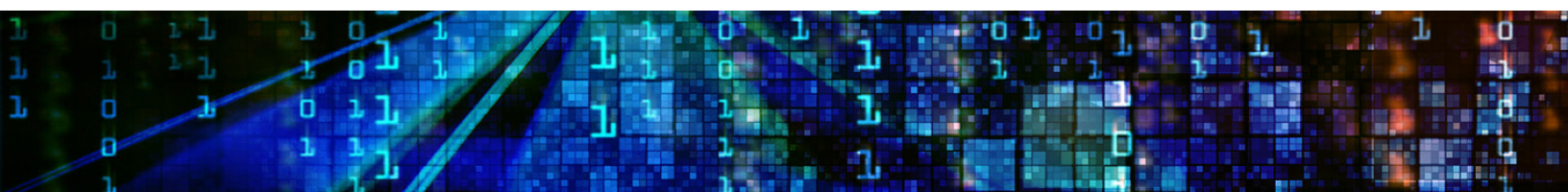


Introducing Andrew Ainslie

Last year, Andrew Ainslie became the seventh dean in the Simon School's history. Prior to that, he was senior associate dean at UCLA's Anderson School of Management, where he ran its MBA program. Under his leadership, the school grew its admissions by 60 percent, increased placements by 20 percent, and revised its curriculum.

Raised in South Africa, Ainslie received his bachelor's degree in electrical engineering and an MBA in marketing from the University of Cape Town in 1983 and 1990, respectively. He earned his PhD in marketing and sales from the University of Chicago's Booth School of Business in 1998. His teaching career began at Cornell University's Johnson School of Management, where he was a marketing professor for three years.

In addition to a rich academic background, Ainslie brings more than 10 years of practical business experience to Simon, having held engineering, finance, and marketing positions in South Africa and in the United States at Hewlett Packard, Compustat, and Standard Merchant Bank. He is committed to Simon's legacy and its future as a school that moves beyond management as usual and that uses the power of data to drive smart business decisions.



Simon Faculty at Work



Rajiv Dewan, the Xerox Professor of Operations Management and professor of computers and information systems: Throughout his career, Dewan has applied computer science concepts to the fields of business and economics.

His current research focuses on marketing of digital goods and services, economics of open source programming, and the strategic use of analytics in organizations. Dewan is particularly interested in how to use data to help businesses extract more value for themselves and serve their customers better. For example, he is working on a project that uses data analysis to help a health care organization improve its urgent care processes.



Paul Ellickson, professor of economics and marketing: Ellickson's research focuses on the intersection of quantitative marketing and economics, with an emphasis on retail competition. He is particularly interested in developing statistical

and quantitative methods that allow firms to leverage dynamic data to better forecast both demand and competitive response. Current research focuses on how retailers can best respond to entry and expansion by Wal-Mart. His research has been published in several top journals in both economics and marketing and has been acknowledged with awards in both areas.



Ronald Goettler, the James N. Doyle, Sr. Professor in Entrepreneurship and professor of marketing and of economics: Goettler's research spans quantitative marketing, industrial organization, and finance, with an emphasis on structural econometric

methods to understand consumer and firm behavior. He is particularly interested in high-tech industries, focusing on the relationship between competition and innovation and on the marketing of new products. He has applied data analytics to evaluate the optimal scheduling of television shows and the optimal pricing of products when consumers are uncertain about product quality. His work has been published in various academic journals, including the *Journal of Political Economy*, the *RAND Journal of Economics*, and the *Journal of Marketing Research*.



Avery Haviv, assistant professor of marketing: Haviv's research interests are focused on developing methods to analyze scanner data in the consumer packaged goods industry. In one current project, he is exploring counter-cyclic

pricing, a phenomenon wherein the price of seasonal goods drops during their peak season. To do this, he builds a model that simultaneously accounts for seasonal changes in consumer price perceptions, inventory level, and consumption. In another methodological initiative, Haviv seeks to relax the assumption, rejected by research in psychology and economics, that consumers think of the future in a purely rational way.



Garrett Johnson, assistant professor of marketing: Johnson's Internet marketing research examines the market for online display advertising. His research uses experimental and structural methods to measure ad effectiveness and understand the

welfare implications of consumer tracking. Johnson works with Internet companies—including Facebook, Google, and Yahoo!—to answer these questions with Internet-scale data. In 2013, Johnson spent several months as a visiting scholar on Facebook's data science team.



Mitchell Lovett, associate professor of marketing: Lovett's research interests include quantitative marketing, targeted advertising, advertising content and schedule choices, online and offline word-of-mouth, branding, social media listening,

and consumer learning. One area of research examines the dynamics behind political advertising. He looks at why candidates go negative in their advertising, how they can improve the targeting of their ads, and the role of advertising versus social media in influencing voter sentiment. Lovett has received numerous research grants and awards and has garnered national media attention in publications such as *Ad Age* and *Marketing News*.



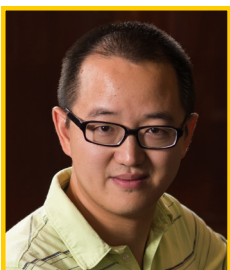
Ravindra Mantena, clinical associate professor of computers and information systems: Mantena studies the economics of digital and information-rich products and services. His research explores how digital technologies alter competition, strategy, and

market structure. Another major research interest is in understanding how data can be used to improve decision and process performance. For instance, using data from the hospitality industry, Mantena and fellow researchers identified a number of biases in revenue decision making and developed a framework for assessing decision quality.



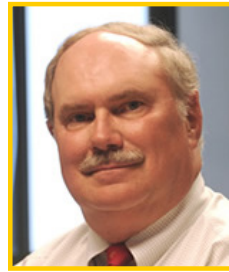
Robert Novy-Marx, the Lori and Alan S. Zekelman Professor of Business Administration and professor of finance: Novy-Marx studies factors determining firm performance. His work is empirically focused, making intensive use of market data. He

has written extensively on the pension programs covering tens of millions of state and local government workers and on the limitations of data for financial forecasting. In the past five years, his research has won the Fama-DFA Prize for the best capital markets/asset pricing paper in the *Journal of Financial Economics*; a Smith-Breedon Prize for the best capital markets paper in the *Journal of Finance*; a Spangler IQAM Prize for the best paper in the *Review of Finance*; and the Mills Prize for the best paper in real estate economics.



Huaxia Rui, assistant professor of computers and information systems: Rui focuses on how businesses can make use of data from social media sites such as Twitter and Facebook to improve decision making. Rui and fellow researchers analyzed the impact

of four million tweets on box office sales for more than 60 movies. The results show that online chatter really does affect sales. Business managers can glean important clues about the popularity of their products and even forecast future sales through careful analysis of Twitter traffic.



Bill Schwert, the Distinguished University Professor and professor of finance and of statistics: Schwert has researched a wide variety of problems in finance and economics using many different statistical tools. For example, he has studied the relationship between asset

returns and inflation rates, the causes and effects of stock volatility, the IPO pricing process, the effects of public regulation on the value of businesses, the market for corporate control, and many other topics. In his teaching, he has developed many statistical analyses of topics such as the components of performance for PGA Tour golfers, the cross-sectional and time series behavior of golf ball sales in the United States, and the factors influencing various magazine ratings of business schools.



Joanna Wu, the Susanna and Evans Y. Lam Professor and professor of business administration: Wu researches international financial reporting, the behavior of financial analysts, management compensation, voluntary disclosure, and

mutual fund performance. Her recent research focuses on the interaction between financial analyst stock recommendations and corporate news, which involves intensive data analysis of millions of corporate news events, intraday stock price movements, and the trading volume of thousands of companies. Wu's work has been published in top academic journals, including the *Journal of Finance*, *Journal of Accounting Research*, and the *Accounting Review*. She is also an editor of the *Journal of Accounting and Economics*.

Simon's Data-Driven Approach

Those at Simon believe strongly in the value of economics and statistics and the analysis of all business problems. Simon differentiates itself in two significant ways. One is with its faculty. They give students a deep understanding of game-changing economic and analytic tools. Another is Simon's suite of proven career-enhancing degree programs that attracts the strongest students. Businesses and their recruiters want candidates with strong analytic skill sets. Simon gives them that. Its alumni can be found in top companies, including Amazon, Facebook, Google, and Microsoft.

Alumni Making Strides



Siddhartha Dalal '71 (MA), '73S (MBA), '76 (PhD), P'06 is chief data scientist and senior vice president of advanced research and technology at AIG, one of the world's largest insurance companies. He and his team analyze huge amounts of information, including the risk they underwrite and even how they think about claims. Their goal is to measure, monitor, and mitigate risks for their customers from known and unknown hazards. "Being able to collect, analyze, and synthesize information from multiple sources to create new knowledge on risk—and having the right data scientists and technologies to affect the risky outcomes—are some of the most critical elements of business today," says Dalal.



Joan Lavis '83S (MBA) is chief financial officer at BrightLine, an innovative connected TV advertising firm that combines the broad reach of television with the real-time data analytics and engagement of digital technology. BrightLine's campaigns mine consumer trends and track real-time engagement to provide dynamic advertising experiences that inform, engage, and entertain people while helping clients such as L'Oreal, Hellman's, and GM increase brand awareness and grow sales. At BrightLine, Lavis draws on an extensive toolkit of finance and analytic skills grown out of a 30-year career at some of the top companies in the country, including Ernst & Young, GE Capital, and UBS.



Mike Lyons '88S (MBA) is director of the Buffalo Bills' newly created analytics department. Lyons collects and uses data from both the business and sporting sides of the franchise to optimize the team's decisions on draft choices, fan experiences, and improving individual player performance—all with the goal of increasing the team's wins. Lyons draws on his Simon education, a 26-year-long career in information management at Xerox, and a lifelong passion for football. The entire National Football League recognizes the potential of analytics, too—more than half of its teams are now taking a data-driven approach to team management.

How You Can Help

To reach the data science initiative's full potential, the University seeks \$50 million in endowed funds, \$25 million of which will support the construction of the Goergen Institute for Data Science. The remaining funds will support faculty, students, and research across the University.

For More Information, Please Contact

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