Real Data
Real Decisions
Real Advantage
As business becomes increasingly reliant on technology and data sets, business analysts who can effectively utilize big data become an essential component of any organization. In fact, in 2012, the Harvard Business Review named business analysts and those who work with big data as having the “sexiest job of the 21st century.” Business analysts perform many tasks with big data, including studying data through statistical and operations analysis, formulating predictive models, applying optimization techniques, and, ultimately, communicating results to customers, business partners and executives, and other stakeholders.

The current dilemma facing industry, however, is that demand for such individuals has exceeded supply. The McKinsey Global Institute estimates U.S. demand for business professionals skilled in big data and business analytics could outstrip supply by 60 percent, or 1.5 million jobs, by 2018. The Rawls College of Business is responding to industry demand by collaborating across disciplines; proactively establishing and adapting its curriculum; and hiring new faculty members with big data expertise in order to prepare students for successful careers in this field.

Big Data Helps Business Analysts:

- analyze statistics and operations
- formulate predictive models
- apply optimization techniques
- communicate results to stakeholders
To be successful in today’s dynamic workforce, understanding consumer behavior is essential. Organizations continuously gather data, and the challenge lies in effectively interpreting the data to understand consumer behavior and capitalize on opportunities. The cross-disciplinary big data initiatives at the Rawls College will not only result in innovative research findings but will also prepare our students for successful careers.

—Dean Lance A. Nail, Ph.D., CFA
The Area of Information Systems and Quantitative Sciences, the Area of Marketing, and the School of Accounting have actively begun collaborating to better understand and utilize big data.

“Collaboration across disciplines helps us understand big data issues from different perspectives. For example, my focus has always been the marketing applications of big data, but big data has been in other fields for many years. Can we learn how experts in other fields have handled big data issues in their field? Can they learn from our experience? Working together brings various perspectives on the same framework. This speeds up the process of understanding big data.”

— Mayukh Dass, Ph.D., J.B. Hoskins Professor of Marketing
Area of Information Systems and Quantitative Sciences

The Area of Information Systems and Quantitative Sciences (ISQS) is focused on determining if, and how, businesses can use big data, with a specific emphasis on the tools and technology available. The new focus will be more intuitive in nature and based on developing business analysts, which will match the demands of the market. Students in the Area of ISQS will be able to apply skills learned in the classroom to real-world experiences.

The Rawls College also houses a Center for Advanced Analytics and Business Intelligence (CAABI) which promotes the study of business intelligence, research, and teaching on topics such as big data, business analytics and statistics. CAABI provides students with the ability to leverage information in databases and data warehouses for improved knowledge discovery and decision making in areas such as customer relationship management, forecasting, market segmentation, web traffic and e-commerce analysis.

“We are providing students hands-on learning experiences that they can apply right away instead of very abstract concepts which, despite being interesting, may be hard to use in business.”

— Miguel Aguirre-Urreta, Ph.D., Assistant Professor, Information Systems and Quantitative Sciences

“We want to provide students with the skills needed to be successful in their career and be productive in society. For our research efforts, we’ve always used data, but we now have bigger data sets and new tools. We need to answer important questions on how business can function better. Our hope is that we can determine how to look at and interpret the data because we now see more than ever.”

— Eric Walden, Ph.D., Associate Professor, James C. Wetherbe Professor and the Director of Data Science Programs, Information Systems and Quantitative Sciences
Area of Marketing

While big data and business analytics has typically fallen under the ISQS umbrella, marketing plays a pivotal role in interpreting big data. Currently, the Area of Marketing has expanded its efforts into understanding how big data and business analytics can be used to influence consumer behavior. At the graduate level, students have undertaken projects with local retailers to understand those factors in a real-world setting. Past project topics include product recalls, market basket evolution and auction data. Additionally, faculty members understand the challenges that big data represents and how businesses can effectively utilize big data in marketing decisions.

“Students are able see how consumers behave in a real-world setting. We are getting real data. We can see what the consumer actually bought. There is an enormous amount that we can learn. These added data sets have made a remarkable difference in the research efforts of our graduate students.”

— Dale Duhan, Ph.D., Professor, Marketing

“If you think about big data ideology, you have data from various views; but, because you have so much data, you don’t really know what you’re looking for. There’s a challenge, as both academic researchers and professionals, to figure out how to make sense of the data and how managers can use these findings to make their decisions. Our research can help people understand these things.”

— Mayukh Dass, Ph.D., J.B. Hoskins Professor of Marketing
From the accounting perspective, companies have to monitor all sales and purchases, monetary flow and gain, and forecasting to promptly assess and allocate funds. In the School of Accounting, students are developing the skills to address these needs.

“The ability to store and process large amounts of data, coupled with the application of business analytics techniques, is generating new and exciting possibilities for accounting students and professionals. For example, in the past, auditors have been constrained by ‘sampling techniques’ to conduct their audit. Now, with the advent of business analytics tools, the once-distant notion of ‘continuous’ auditing is now a real possibility. Consider also the ability to analyze large amounts of transactional data to identifying and quantifying risk factors, which in turn would provide the building blocks for the development of stronger risk management programs. At the Rawls College, we are proud to offer our students the ability to enrich their careers by acquiring the skill set that is a prerequisite for success in accounting and business analytics.”

— Juan Manuel Sanchez, Ph.D., Associate Professor of Accounting

“The School of Accounting is very excited about the opportunity to participate in the new program in business analytics offered by the Rawls College. Our new program will provide Rawls graduates with the skills necessary to analyze and interpret data gathered and stored in large data sets, providing managers with crucial and timely information to support the decision-making process. Demand for people who can ‘read’ data is growing exponentially, and we are thrilled to participate in preparing Rawls graduates to be future leaders in this exciting new field.”

— Robert Ricketts, Ph.D., Frank M. Burke Chair in Taxation, Director, School of Accounting
New Faculty Hires With Big Data Expertise

Miguel Aguirre-Urreta, Ph.D., Assistant Professor, Information Systems and Quantitative Sciences

Prior to joining the Rawls College, Aguirre-Urreta served as an Assistant Professor in the School of Accountancy and MIS, Driehaus College of Business, at DePaul University in Chicago for six years. He received his Ph.D. in Information Systems from the University of Kansas and his MBA in Information Systems and Finance from the Kelley School of Business at Indiana University. His undergraduate degree is in Public Accounting from the Universidad de Buenos Aires in Argentina. Aguirre-Urreta’s research interests include systems analysis and design, areas of quantitative research methodology, human-computer interaction, computer self-efficacy, adoption of new technologies, and business analytics. He attributes his decision to join the Rawls College based on the college’s already established business analytics focus and fellow colleagues who are invested in researching and teaching big data.

Alexander Chaudhry, Ph.D., Assistant Professor, Marketing

Chaudhry joins the Rawls College after recently earning his Ph.D. in Business Administration from Rice University. His research interests include analyzing big data - from scanner panel data or web scraping - to understand the dynamic choice behavior of households using econometric models; specifically, the influence of cross-category dependencies on promotional campaigns, retailer price optimization and household mental budgets. Chaudhry’s teaching interests include marketing research, marketing management and database marketing. In his Marketing Research & Analysis course, students use experiments to help bridge the gap between correlation and causation. Chaudhry helps provide a managerial perspective by increasing the awareness of big data and business analytics, and teaching critical thinking of statistical significance and causal inference.
The Rawls College is also adapting its Master of Science in Management Information Systems curriculum to incorporate coursework that reflects current trends and practices in big data.

“The M.S. in Management Information Systems is a forward-thinking approach to providing Rawls graduates with a competitive advantage when entering the job market. These graduates will be prepared for jobs like Predictive Analytics Consultant, Data Architect, Social Media Strategist, Customer Intelligence Director, etc., which require a master’s degree in a quantitative discipline, with proficiency in SAS and R. It’s a pleasure to be a part of an institution that is taking a proactive stance in addressing the increasing demand for business analytics professionals.”

— Alexander Chaudhry, Ph.D., Assistant Professor, Marketing

“We’ve had our degree program since 2007. While other universities are just now starting programs, we are enhancing and building upon ours. We’re ahead of the curve on this. What we are trying to do now is gear our program toward business analysts who not only understand big data, but who can effectively use it in business. The idea is that our graduates will understand specialized tools on how to secure and make use of data. Then, from the business side of the matter, they need to understand what to do with it. Our program tries to incorporate three things: asking the right sorts of questions; being able to technologically obtain data; and statistically understanding the data.”

— Eric Walden, Ph.D., Associate Professor, James C. Wetherbe Professor and the Director of Data Science Programs, Information Systems and Quantitative Sciences
The M.S. in Management Information Systems (MIS) program prepares graduates for professional careers in the management of IT, particularly on how decisions can be made by using big data and business analytics. The M.S. in MIS focuses on the application of technology to help achieve organizational goals and solve business problems. The program also equips its students with the knowledge to succeed in enterprise information system integration, data warehousing and business intelligence.

**Typical careers for students graduating from the program include:**

- Application Developer
- Business Analyst
- Business Intelligence Analyst
- CIO and CTO
- Database Administrator
- Database Analyst
- Database and Knowledge Manager
- Information Analyst
- Project Manager
- Systems Analyst
- Systems Designer
- Systems Consultant
- Web Developer
Everyone talks about big data; but, if you look at the current environment, everyone brings one perspective and there are no guidelines of how one should use these things or how it can be applied across multiple disciplines. Coming together and collaborating will help add clarity on how to use big data in business analytics. This will obviously attract businesses to Texas Tech to consult with us, which can lead to our students obtaining better jobs.

— Mayukh Dass, Ph.D., J.B. Hoskins Professor of Marketing
Rawls stakeholders positively contribute to the Rawls LEADER 2020 Strategic Plan.

rawlsstrategyto2020.com

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