# MSBA

## MASTER OF SCIENCE IN BUSINESS ANALYTICS

**UNIVERSITY OF NOTRE DAME**
Mendoza College of Business

# FIND CLARITY IN THE CHAOS

The demand for professionals who understand data concepts and can apply them to critical business decisions is increasing at a rapid rate. By 2018, the U.S. alone could face a shortage of 1.5 million managers and analysts with data-analytics know-how.*

What does this mean to you?
Business analytics offers a **wealth of career opportunities** across industries, from retail marketing to healthcare, data security to manufacturing.

The Notre Dame **Master of Science in Business Analytics** prepares you to meet the challenges of the data-driven economy, providing you with the tools and knowledge to guide executive decision making, direct policy changes and lead your organization forward.

## ANALYTICS WAS THE MOST FREQUENTLY MENTIONED SKILL EMPLOYERS LOOKED FOR IN BUSINESS SCHOOL GRADUATES

GMAC Corporate Recruiters
Survey Report 2015

**World-class faculty**

**Earn while you learn**

**Grow your network**

*McKinsey Global Institute Study

Companies recognize that **analytics can add significant value** to their businesses, but simply have trouble finding people who are skilled in both business and the technologies and tools of analytics.

Our MSBA students master both data and analysis toward **effective decision making** that creates **value and competitive advantage.**"

**Don Kleinmuntz, Ph.D.**
Professor of the Practice and Academic Director
Master of Science in Business Analytics

## BY 2018, 50% OF BUSINESS ETHICS VIOLATIONS WILL BE RELATED TO DATA
Gartner 2015

## ONLY 29% OF DATA ARCHITECTS SAY THEIR FIRMS ARE GOOD AT CONNECTING ANALYTICS RESULTS TO BUSINESS OUTCOMES
Forrester 2016

**Justin Rivera, MSBA '16**
**Years of work experience:** 6
**Employer:** BP
**Before MSBA:** Rotational Program
**After MSBA:** B2C Marketing Coordinator

**Q How do you use analytics?**
**A.** Every day, people are coming and going from our more than 7,000 stores across the Midwest. I use data analytics to understand our customers better, to assess the impact of demographics and geography, and ultimately, to answer the question: How do we grow our business? Every transaction is a piece of data that can be used to better serve each customer and local market with the right products and service.

**Q Why are you passionate about analytics?**
**A.** I love problem solving, and for me, a lot of the business world is just puzzles. Business asks: How do you solve this problem? How do you answer this question? Analytics is about collecting bits and pieces of information and connecting them to answer those questions; it's about using the data to drive actual decision making.

**Q Why the Notre Dame MSBA?**
**A.** There were hints along the way (at my job) that kept sparking my interest in analytics. When I came across the Notre Dame MSBA program, it was that little nugget I kept seeing that I knew sparked a fire in me.

# BIGGER THAN BIG DATA

The sheer volume of today's data presents real challenges for businesses. How should all of this data be produced, collected, cleaned and stored? These are important "Big Data" questions that need to be addressed, but analytics goes far beyond just these questions.

## BUSINESS ANALYTICS IS THE INTERSECTION OF DATA AND BUSINESS DECISIONS

With an MS in Business Analytics, you create impact. You understand the techniques and challenges of data, while also telling the stories of data in a powerful way. You have the unique skills and knowledge to access instant realities, build analysis models, create simulation scenarios and communicate recommended next steps. Ultimately, you become a fundamental conduit between the data teams and decision-makers in management.

**PRESCRIBE STRATEGIC SOLUTIONS TO YOUR CLIENTS BASED ON HISTORICAL DATA AND PREDICTIVE ANALYTICS**

- Business Development
- Portfolio Management
- Consulting

**IMPLEMENT SOFTWARE SOLUTIONS THAT REDUCE MEDICAL FAILURE RATES AND CUT COSTS**

- Product Development
- Systems Analysis
- Process Improvement

**DETECT SIGNALS OF INTEREST WITHIN DATASETS TO DRIVE SUPPLY CHAIN AND CUSTOMER EXPERIENCE ENHANCEMENTS**

- Supply Chain Management
- Digital Marketing
- Consumer Research
- Web Development

**DEMONSTRATE HOW TO IMPROVE PRODUCTION CYCLES WITH STATE-OF-THE-ART DATA VISUALIZATION TOOLS**

- Operations Analytics
- Production Planning
- Pricing Strategy

Everybody is chasing Big Data. But you need to ask yourself, like the dog that is chasing the car: What are they going to do with it when they catch it? Do they know how to take that data and turn it into insight, and insight into impact? Data that doesn't turn into impact is really just trivia."

**Jack Levis**
Senior Director of Process Management, UPS
Remarks from transcript of 2014 UPS Investor Conference, November 13, 2014

Information Security

**BE THE FIRST LINE OF DEFENSE TO PREDICT, DETECT AND PREVENT SECURITY THREATS**

Meteorology

Cyber Security

**PROVIDE REAL-TIME AND HISTORICAL NATURAL DISASTER ANALYTICS FOR GLOBAL CLIENTS**

Risk Management

**Are you ready to harness the power of data? Then the Master of Science in Business Analytics is for you.**

**Julie Arendarczyk, MSBA '16**
**Years of work experience:** 20
**Employer:** Tyco
**Before MSBA:** National Sales Manager
**After MSBA:** Data Scientist/ Business Development Manager

**Q | How do you use analytics?**
**A.** Within my organization, we recently developed a data intelligence group. Internally, I design algorithms to create machine learning and predictive analytics. I also help our customers to better understand what analytics can do for their business. I love being able to leverage my business knowledge with the data side to be more strategic.

**Q | Why are you passionate about analytics?**
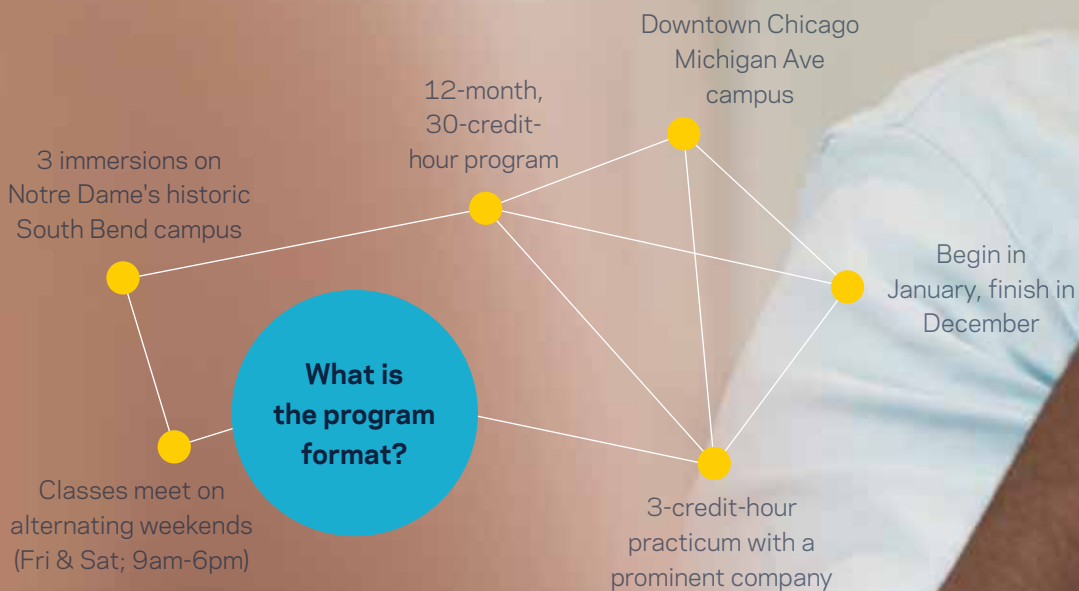**A.** I've always had a passion for analytics, numbers and science. I ended up going a different path in my career, but I knew at some point I would end up getting back to this. Analytics helps me use data to answer questions. It definitely takes a curious mind to mine data—especially the complex data available today.
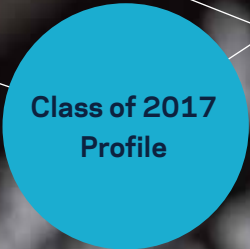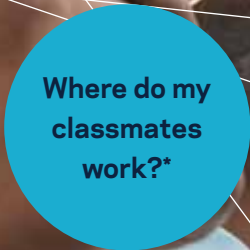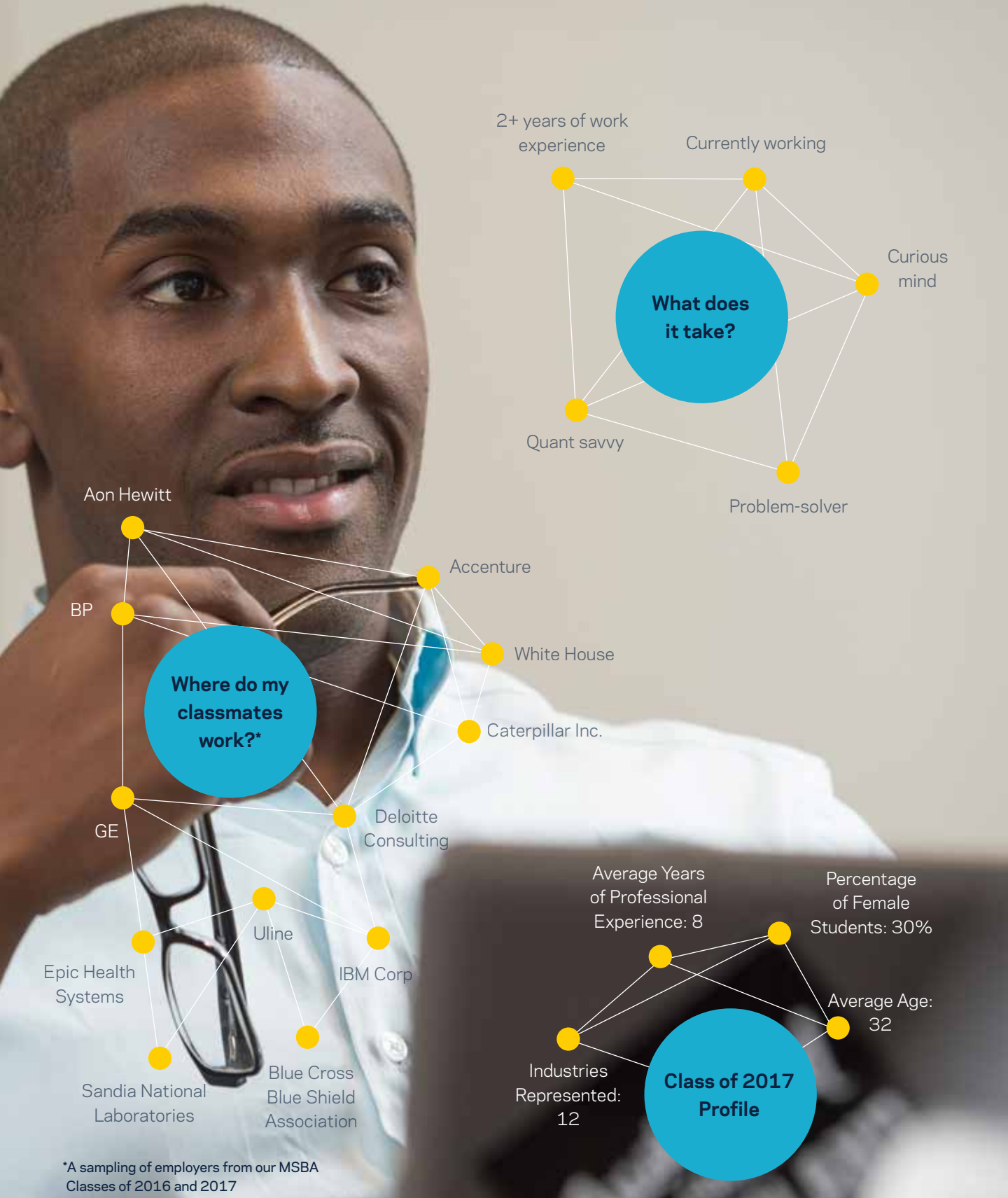
**Q | Why the Notre Dame MSBA?**
**A.** Analytics has really taken off, especially over the past five years, so I saw this as a way to change my career path and be a part of the future.

# WE MAKE BUSINESS PERSONAL

Notre Dame's Master of Science in Business Analytics is a one-year program designed to fit into your life as a working professional. Coursework takes place on alternating weekends, so you keep your job while pursuing your advanced degree. Visit msba.nd.edu for more program details.

**What is the program format?**

- 3 immersions on Notre Dame's historic South Bend campus
- Classes meet on alternating weekends (Fri & Sat; 9am-6pm)
- 12-month, 30-credit-hour program
- Downtown Chicago Michigan Ave campus
- 3-credit-hour practicum with a prominent company
- Begin in January, finish in December

**What does it take?**

- 2+ years of work experience
- Currently working
- Curious mind
- Problem-solver
- Quant savvy

**Where do my classmates work?***

- Aon Hewitt
- Accenture
- BP
- White House
- Caterpillar Inc.
- Deloitte Consulting
- GE
- Uline
- IBM Corp
- Epic Health Systems
- Blue Cross Blue Shield Association
- Sandia National Laboratories

*A sampling of employers from our MSBA Classes of 2016 and 2017

**Class of 2017 Profile**

- Average Years of Professional Experience: 8
- Percentage of Female Students: 30%
- Average Age: 32
- Industries Represented: 12

# #3
Rated No. 3 for Networking
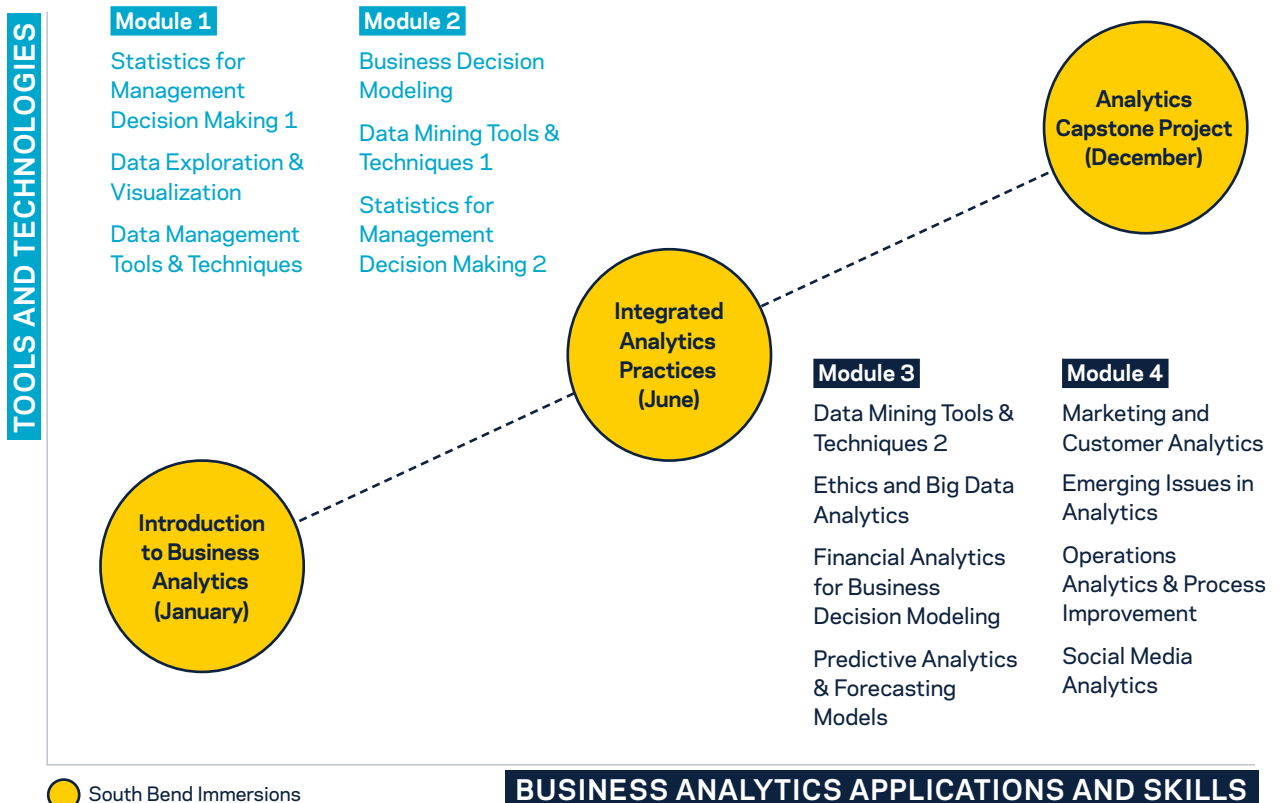*The Economist EMBA 2015*

# 270
Alumni Clubs Worldwide

# #5
Rated No. 5 for Alumni Effectiveness
*The Economist MBA 2015*

# LABORATORY LEARNING

As a top-ranked business school, we know how to frame business problems and decisions in a manner that promotes high-quality results. Through immersive group work and the case study approach, you will learn how data insights can be applied in real business situations. Throughout the program, you will collaborate with people from different industries and educational backgrounds. Your common purpose will be a shared passion for discovery—and finding answers.

## CURRICULUM OVERVIEW

Tools and techniques are essential to understand the data, but knowing how to interpret and apply that data is what allows you to become a confident, curious and insightful leader. The curriculum provides a set of courses around tools and technologies, and a set of courses around business analytics applications and skills. Additional coursework and immersions focus on the context of how analytics is used in business organizations.

**TOOLS AND TECHNOLOGIES**

**Module 1**

Statistics for Management Decision Making 1

Data Exploration & Visualization

Data Management Tools & Techniques

**Module 2**

Business Decision Modeling

Data Mining Tools & Techniques 1

Statistics for Management Decision Making 2

**Analytics Capstone Project (December)**

**Integrated Analytics Practices (June)**

**Module 3**

Data Mining Tools & Techniques 2

Ethics and Big Data Analytics

Financial Analytics for Business Decision Modeling

Predictive Analytics & Forecasting Models

**Module 4**

Marketing and Customer Analytics

Emerging Issues in Analytics

Operations Analytics & Process Improvement

Social Media Analytics

**Introduction to Business Analytics (January)**

⬤ South Bend Immersions

**BUSINESS ANALYTICS APPLICATIONS AND SKILLS**

How do students describe the MSBA experience at the Mendoza College of Business?



## Cliff Weeks, MSBA '16
White House Duty Officer
Department of Defense

"Our mid-year project focused on finding and solving a problem that would change Chicago. My group chose to look at crime statistics, so we put the whole team into a room to analyze data and build statistical models. We found that based on weather, we could predict crime statistics that would benefit law enforcement. It was an amazing learning experience."



## Kaitlyn O'Connell-Keleghan, MSBA '16
Management Consultant
Russell Reynolds Associates

"We all have wildly different skills, and we all come from different industries and functions. You are able to lean on your group members, learn from your group members and work together to get to those common goals."

**Business school to watch in 2016**
*Poets & Quants*

# BUSINESS AS ONLY NOTRE DAME CAN TEACH IT

Combine the power of analytics with the foresight of a top-ranked business school. Our integrated, rigorous and ethics-based curriculum will challenge you in ways beyond your expectations—and will help facilitate your transformation from a business professional into a true business leader with the unmatched Notre Dame alumni network supporting you.

Academic excellence. Management expertise. Dedication to ethics. Experienced and world-renowned faculty members. A part-time format for your full-time schedule. We've combined all of these factors to form a powerful formula for success.

## #1
MBA for ROI Among
Top 30 Schools
*Bloomberg
Businessweek
2014*

## #2
Undergraduate
Business School
*Bloomberg
Businessweek
2016*

## #15
American
Executive MBA
Program
*Poets & Quants
2016*

You're just a few steps away from a legendary education.

**MSBA.ND.EDU**

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mendoza.nd.edu/msba/video

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Legendary Advantage℠

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Mendoza College of Business

Master of Science in Business Analytics
Stayer Center for Executive Education
300 Stayer Center
Notre Dame, IN 46556
Telephone: 574-631-5285
Email: msba.business@nd.edu
Website: msba.nd.edu
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Don't wait to apply, classes begin in January.

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