SAS® GLOBAL FORUM 2016

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Is it time for a Ph.D. in Data Science?

One University's Solution to the Talent Gap

SESSION 3340

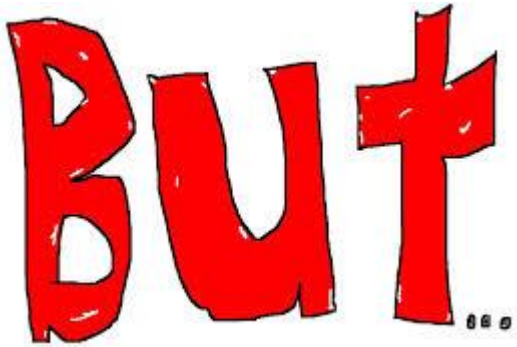
#SASGF

About the presenter

Jennifer Lewis Priestley is a Professor of Statistics and Data Science at Kennesaw State University. She oversees the Ph.D. program in Analytics and Data Science and is the Director for the Center for Statistics and Analytical Services.

Dr. Priestley has a BS from Georgia Tech, an MBA from Penn State and a Ph.D. in Decision Sciences from Georgia State University.

Is it time for a Ph.D. in Data Science?

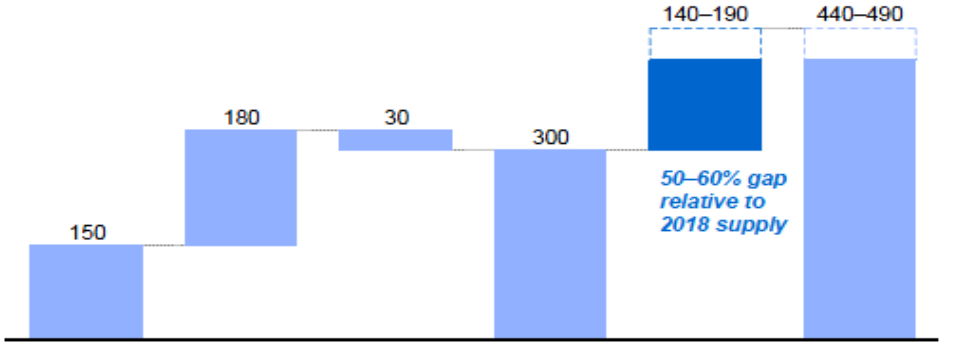


Is it time for a Ph.D. in Data Science?

REASON 1:
Closing the gap.

Demand for deep analytical talent in the United States could be 50 to 60 percent greater than its projected supply by 2018

Supply and demand of deep analytical talent by 2018
Thousand people



1 Other supply drivers include attrition (-), immigration (+), and reemploying previously unemployed deep analytical talent (+).
SOURCE: US Bureau of Labor Statistics; US Census; Dun & Bradstreet; company interviews; McKinsey Global Institute analysis

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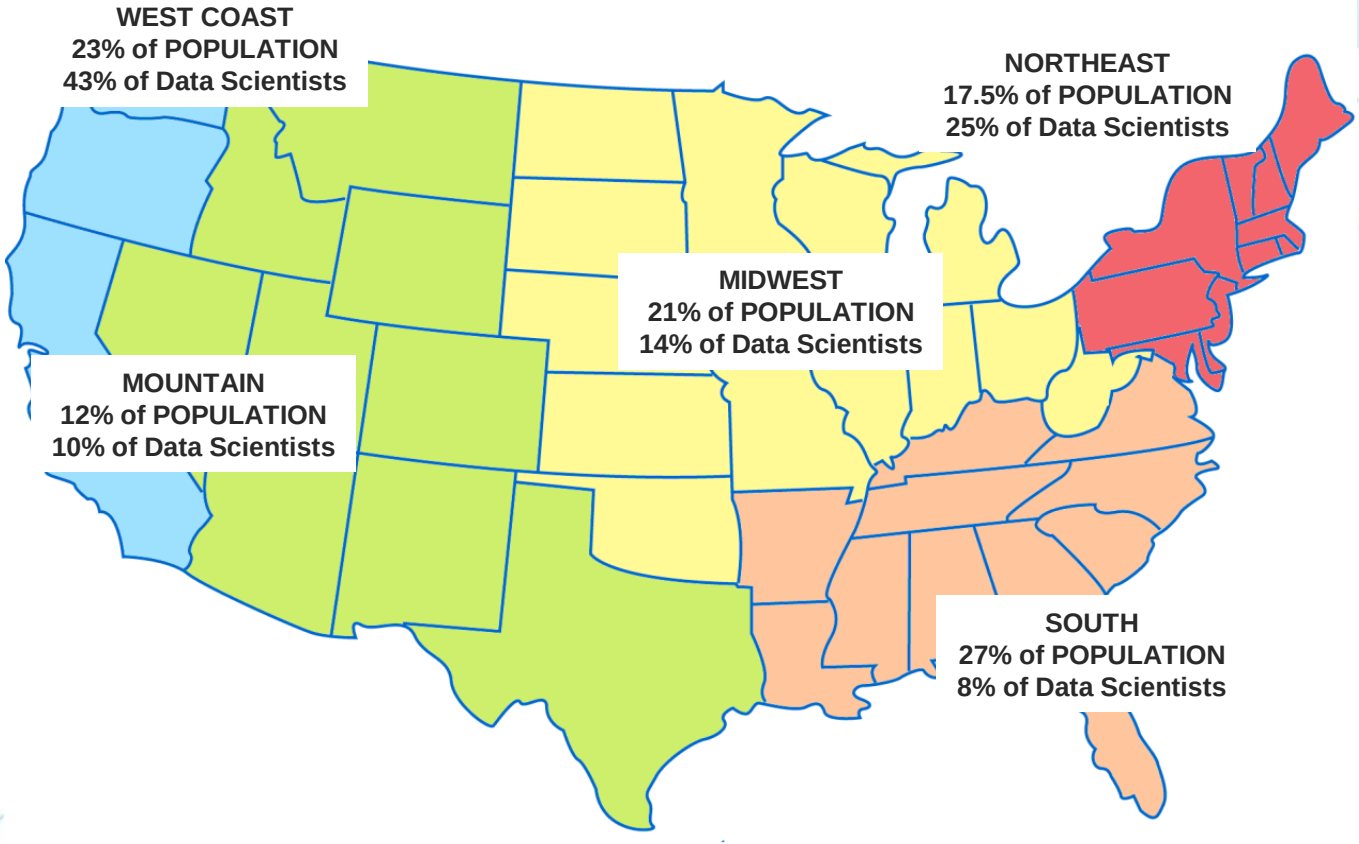

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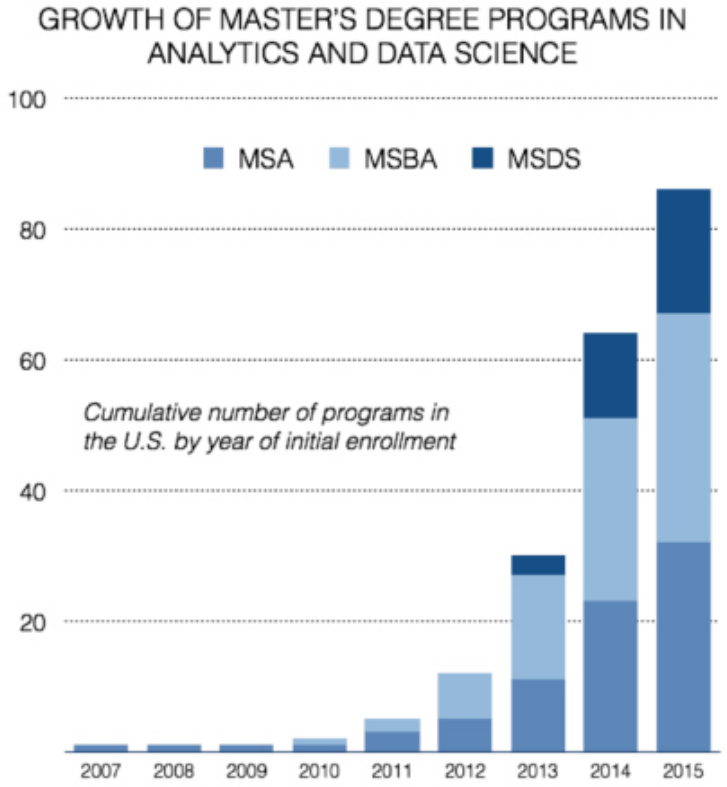
REASON 2:
MS degrees…then what?



Source: Institute for Advanced Analytics at NC State

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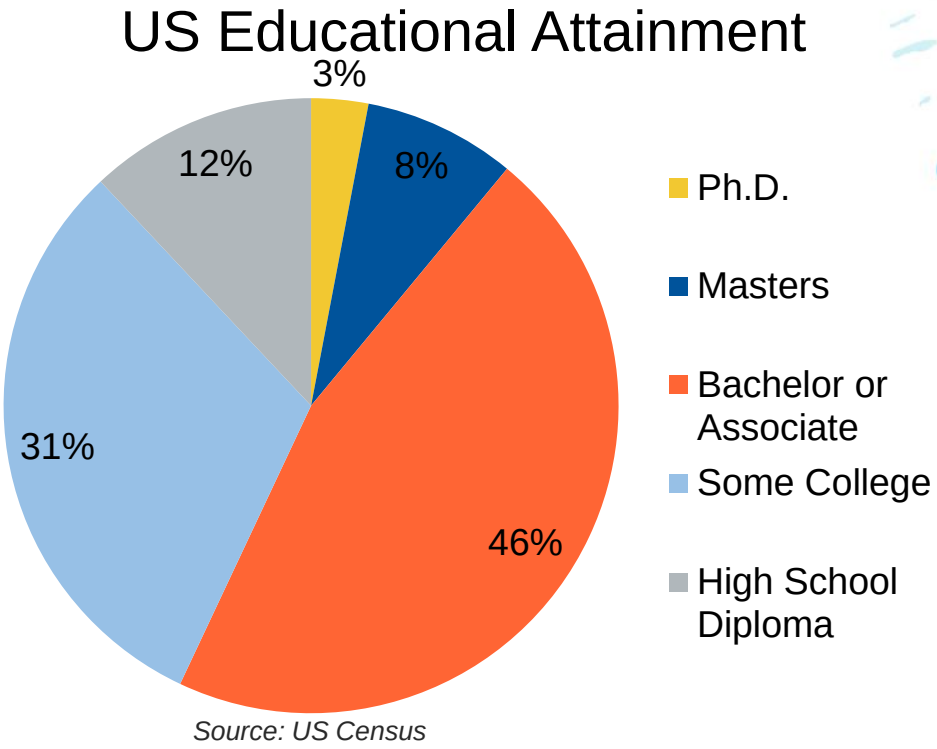
REASON 3:
Who can teach all of these students?



Source: US Census

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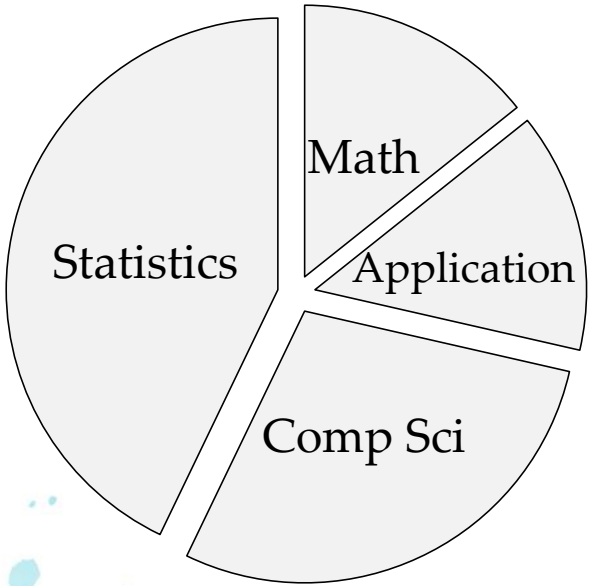
A brief tangent… what is data science?



BIOLOGY

FINANCE

PHYSICS

Is it time for a Ph.D. in Data Science?

This does not make sense.

BIOLOGY +Math/Stat /CompSci

FINANCE+ Math/Stat/ CompSci

PHYSICS+ Math/Stat/ CompSci

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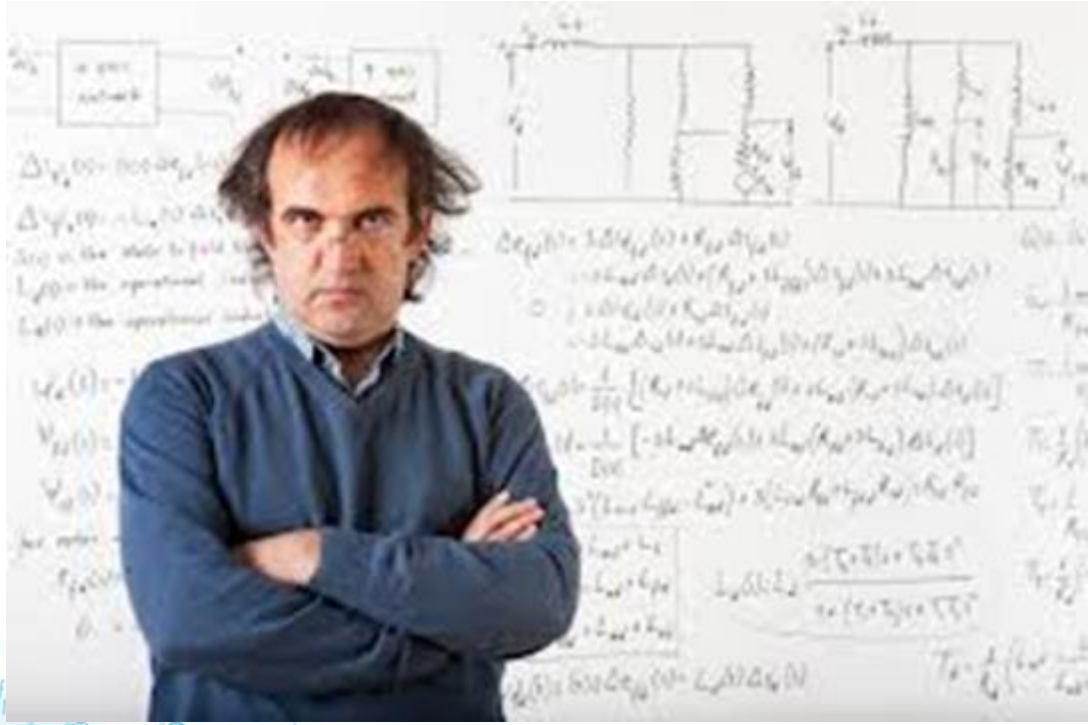

But this Ph.D. has to be different…

Is it time for a Ph.D. in Data Science?

Computer Science/Information Systems

NYU

Colorado Technical University

University of Maryland

Berkeley
UNIVERSITY OF CALIFORNIA

Interdisciplinary

WPI

Kennesaw State University
College of Science and Mathematics
Ph.D. in Analytics and Data Science

Chapman University

Business School

USC Marshall
School of Business

Bentley University

The University of Tennessee Knoxville

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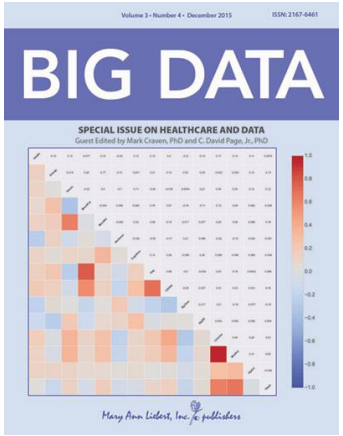

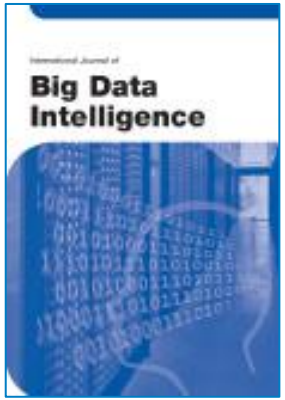

Is it time for a Ph.D. in Data Science?

MATH CORE:
- ✓ THEORY OF LINEAR MODELS
- ✓ DISCRETE MATHEMATICS
- ✓ GRAPH THEORY
- ✓ MATHEMATICS FOR BIG DATA

STAT CORE:
- ✓ DATA MINING I
- ✓ DATA MINING II
- ✓ ADV PROGRAMMING IN SAS
- ✓ BINARY CLASSIFICATION
- ✓ SEGMENTATION MODELING
- ✓ 3 STAT ELECTIVES

CS CORE:
- ✓ DISTRIBUTED COMPUTING
- ✓ HPC INFRASTRUCTURE
- ✓ ALGORITHM DESIGN FOR BIG DATA
- ✓ MACHINE LEARNING
- ✓ TWO CS ELECTIVES

OTHER:
- ✓ APPLICATION ELECTIVE
- ✓ CONSULTING CENTER
- ✓ ETHICS
- ✓ DISSERTATION
- ✓ PROJECT/PRACTICUM (Tell the story!)

Is it time for a Ph.D. in Data Science?

Edwin Baidoo – MS Computational Finance

Sergiu Busciumas – MS Computer Science

Bogdan Gadidov – MS Industrial Engineering

Linh Le – MS Information Technology

Jie Hao – MS Applied Mathematics

Bob Vanderheyden – MS Mechanical Engineering (not pictured)

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