



## **New Developments at JPSM**

FCSM      December 2015

Richard Valliant, Universities of Michigan & Maryland

# Where we come from



Photo: Matt H. Wade

December 1, 1990

## **It Began with an Idea**

The idea for the Joint Program emerged from a 1990 initiative of the Federal Statistical agency heads, the then current head of the OMB Statistical Policy Office, and then chair of the Council of Economic Advisors. The mismatch between the disciplinary organizations of most universities and the technical staffing needs of the system required a new academic organization. The legislative initiative called for a graduate education and research center offering courses in the DC area.

1992 Noncredit short courses

1993 Master program offered in DC

1999 Certificate and Citation programs

2000 PhD program

2003 Program in Economic Measurement

2015 International Program  
in Survey and Data Science

<http://jointprogram.umd.edu/home>

## Some facts about JPSM & MPSM graduates

JPSM				MPSM
Degree	Social science	Statistical science	Total	Total
MS	152	85	237	87
PhD	12	14	26	19
Total	164	99	263	106

# Non-Degree Programs

	Citation		Certificate		
	Survey Methodology	Economic Measurement	Survey Methodology	Statistics	Total
Current Enrollment	19	2	16	8	45
Graduates (as of 12/14)	22	1	22	14	59

## Undergraduate Minor

(Began Fall 2011)

Cumulative Enrollment	15
Total Graduates	4
Current Enrollees	9

# Short Courses

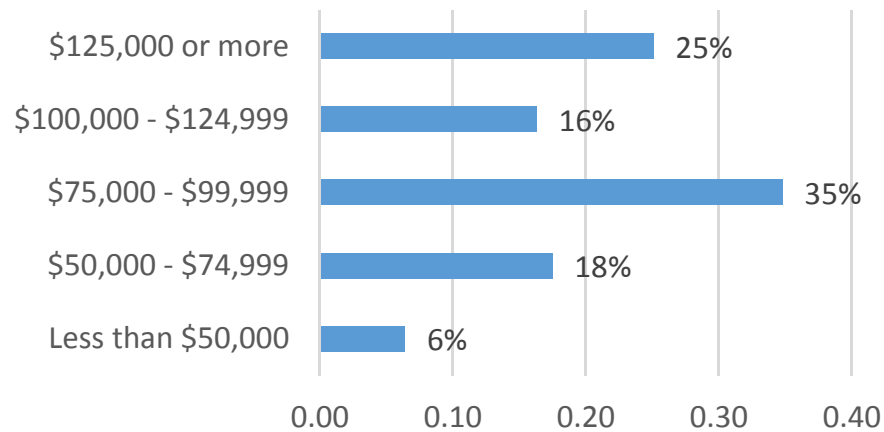
- Short Course employer totals since 1993:
  - Federal Agencies: 7,225
  - Private: 1,462
  - Other: 4,602
  - Total: 13,289

# Where grads work

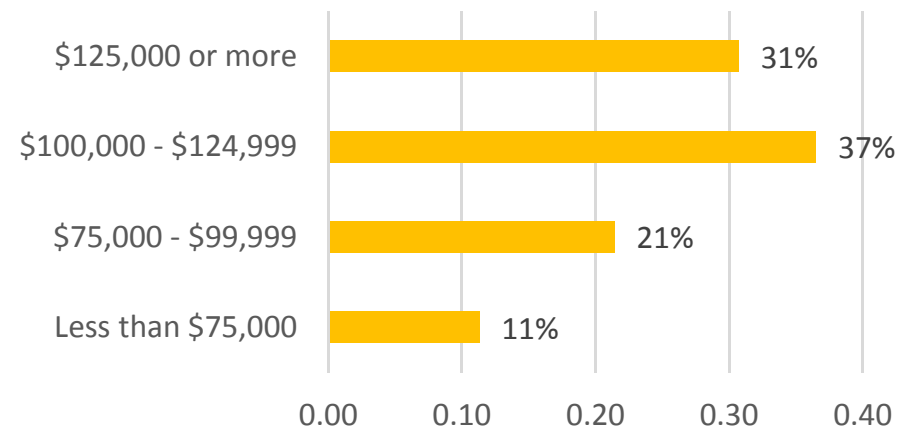
Current Job	%
Federal	57
Other	17
Private Government Contractor	26

# 2014 Income Distribution by Degree

MS 2014 income



PhD 2014 income



# A New World of Data

- Amount of digital data growing fast
  - Data from satellites, sensors, transactions, administrative processes, social media, and smartphones.
  - Characterized by high volume, high velocity, and high variety
- Hope is to gain insights from these data for different areas such as
  - Health and crime prevention
  - Planning of infrastructures
  - Business decisions



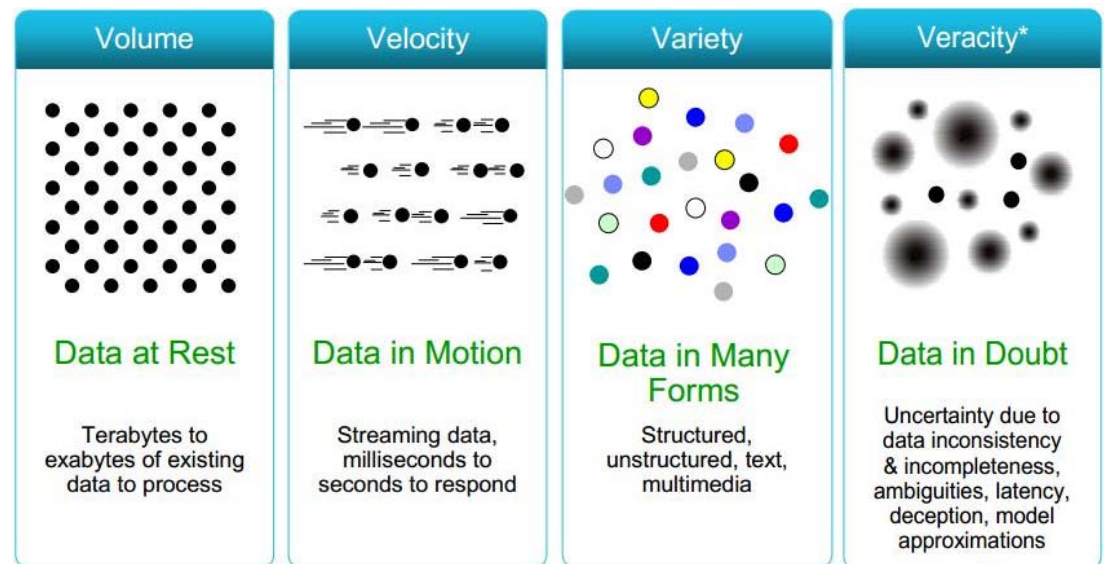
# Data quality continues to be an issue

New/different types of data generated as by-product (e.g., smartphones, social media, satellites)

Fundamental changes in collection, availability, integration and dissemination of data

Paradigm shift for those who in the past relied primarily on survey research

Lack of people with skills to collect data, build modern surveys and handle data veracity



<http://www.rosebt.com/blog/data-veracity>

## Skills and methods from survey methodology still apply

- Questionnaire design
- Data collection modes
- Sampling and inference
- Total error (or quality) perspective

# Revised curriculum

- New degree and certificate programs planned
  - Curriculum broadened beyond just survey methodology
  - Online courses introduced
- New emphasis on analysis of big data and data science
- In Spring 2015 a new course taught on Big Data for Federal Agencies
  - Covered sources of these data and analysis techniques
  - More advanced big data class taught in Fall 2015.

# International Program in Survey and Data Science

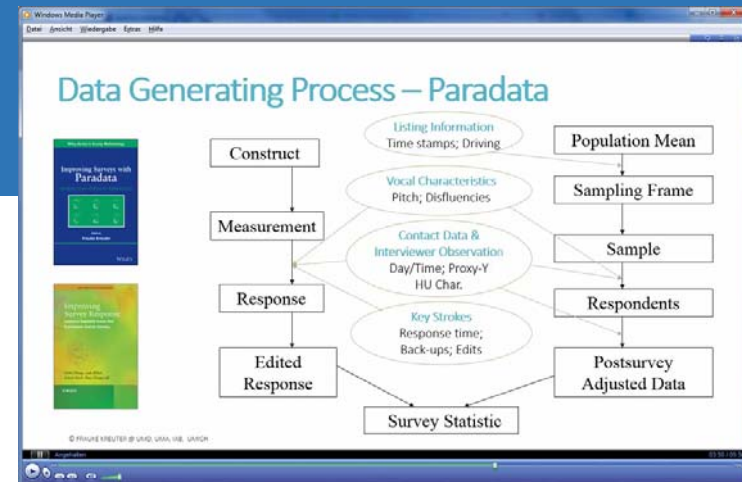
- Partnership with Mannheim University in Germany
- Courses taught completely online
  - Pre-recorded lectures
  - Weekly discussion sessions
- 18 credit certificates in Survey Methodology and Survey Statistics
- 30 credit Masters in Professional Studies (planned)

# Format

Each week set of videos  
(prerecorded)

Lectures are broken into easily  
digestible sessions to help students  
to better focus on the material

Engage with the material at their  
own pace



# New Courses

- Big Data—database concepts; data visualization; GIS; APIs & uses of social media; networks; data linkage; intro to machine learning & text analysis
- Fundamentals of Computing and Data Display—Software for data management and analysis; simulation studies; Exploratory Data Analysis (EDA) / visualization tools; Latex vs. PowerPoint; principles of displaying data)
- Programming (Python, Hadoop, NOSQL, MapReduce)
- Machine Learning
- Advanced Modeling

**Save the Date!** The Joint Program in Survey Methodology  
2016 Distinguished Lecture

## *The Essential Survey Statistician*

presented by

**Sharon Lohr**  
Vice President, Westat



**Friday, March 11, 2016 at 3 pm**

2016 Distinguished Lecture

