New Developments at JPSM

FCSM December 2015

Richard Valliant, Universities of Michigan & Maryland

Where we come from

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 universitites 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

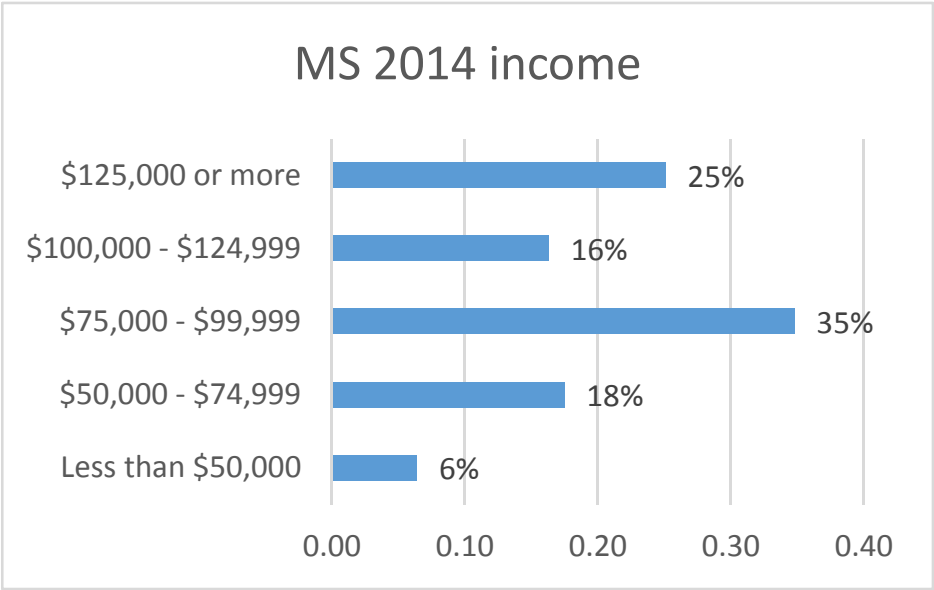
Short Courses

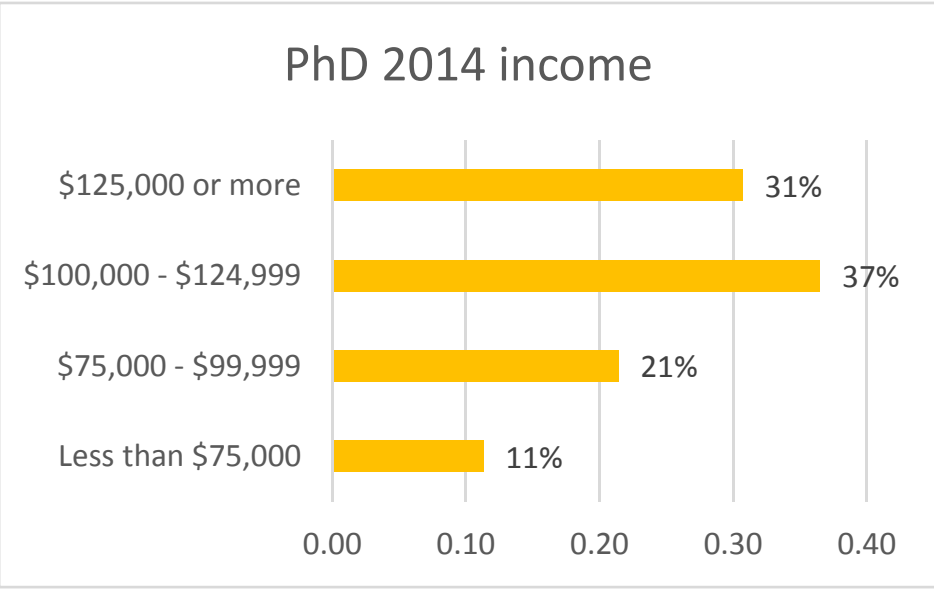
- Short Course employer totals since 1993:
  - Federal Agencies: 7,225
  - Private: 1,462
  - Other: 4,602
  - Total: 13,289

Where grads work

Current Job	%
Federal	57
Other	17
Private Government Contractor	26

2014 Income Distribution by Degree





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

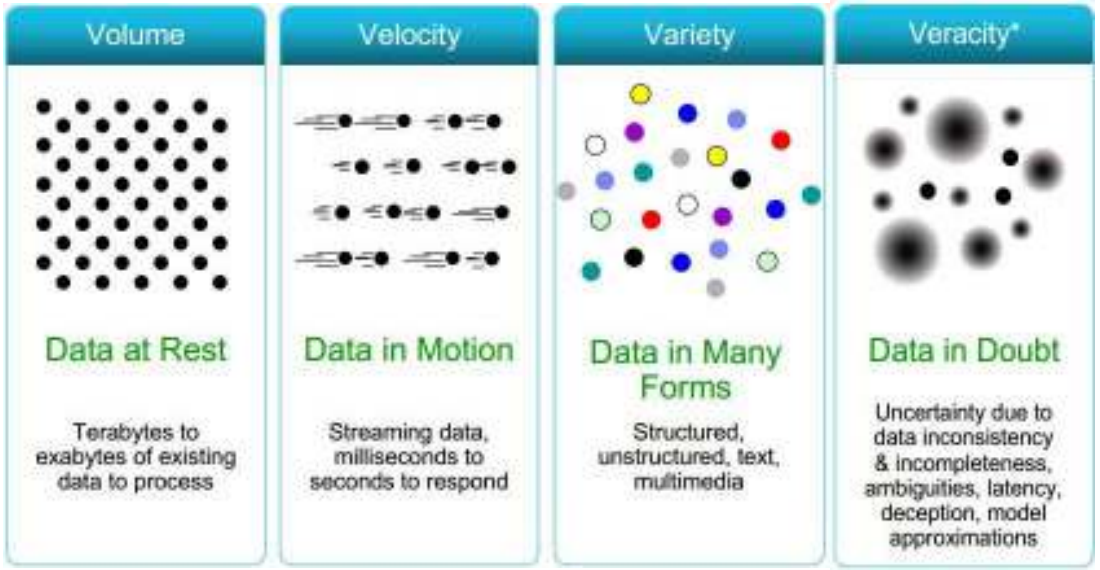
Data quality continues to be an issue

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

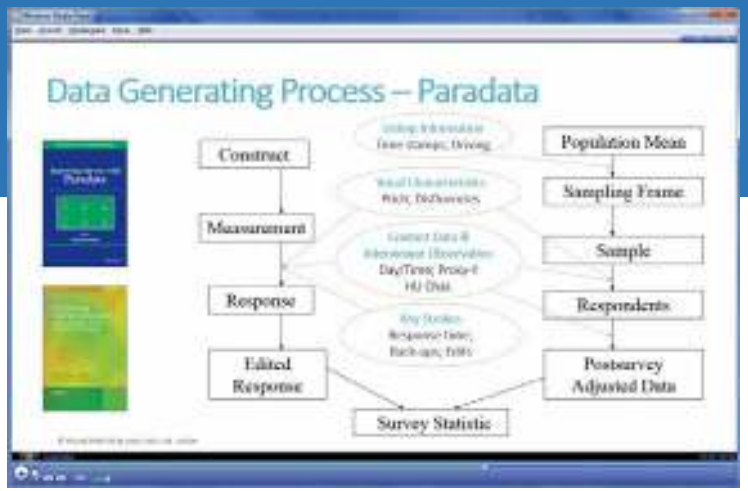
- Partnership with Mannheim University in Germany
- Courses taught completely online
  - Pre-recorded lectures
  - Weekly discussion sessions
- 18 credit certificates in Survey Methodology and Survey Statistics
- 30 credit Masters in Professional Studies (planned)

Format

Each week set of videos (prerecorded)

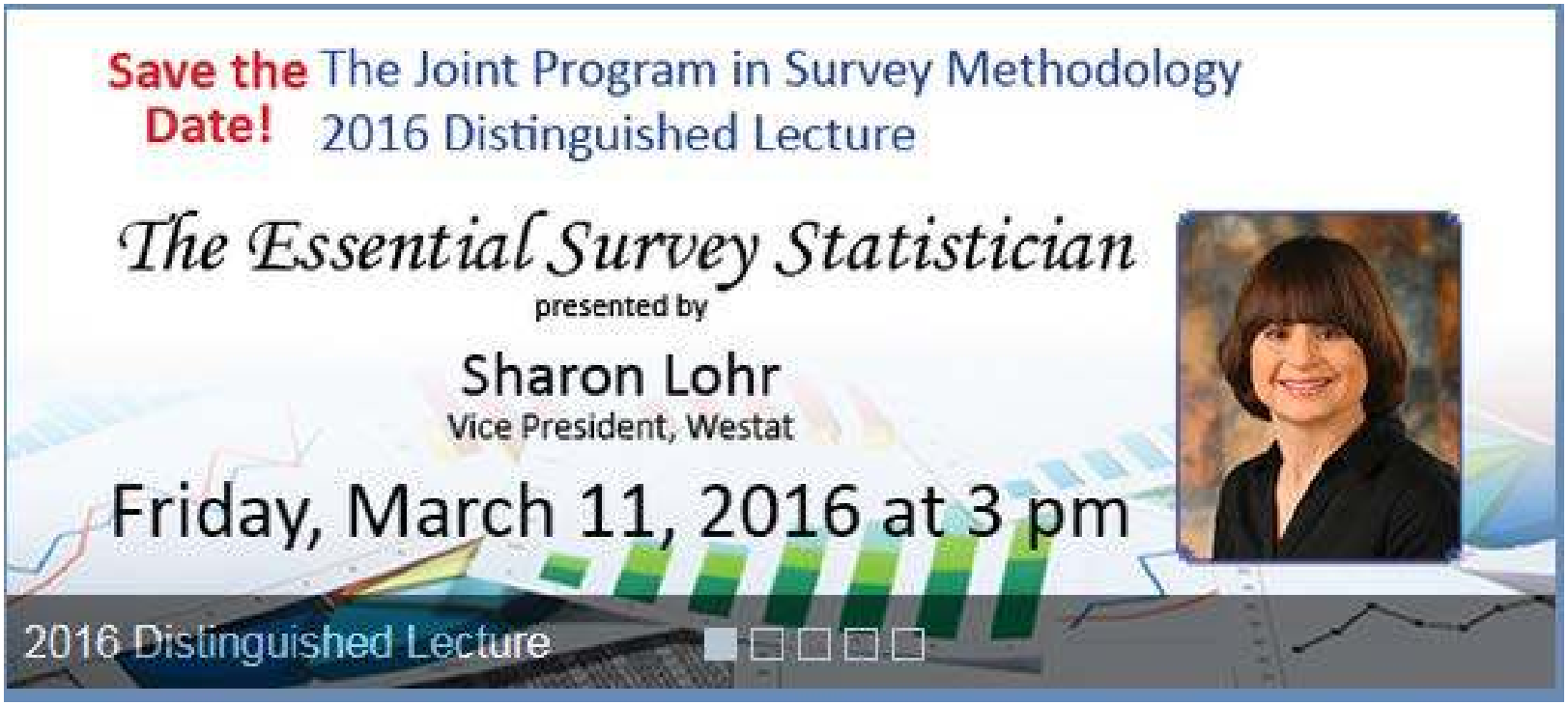
Lectures are broken into easily digestible sessions to help students to better focus on the material

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