

## Investigators

### Program Director:

Burt Monroe, Political Science

### Executive Committee:

Lee Giles, Information Sciences & Technology

Melissa Hardy, Sociology

Alan MacEachren, Geography

Sesa Slavkovic, Statistics

Chris Zorn, Political Science

## Associated Departments

Students admitted by a participating Penn State PhD program are eligible for BDSS-IGERT.

Anthropology

Communication Arts & Sciences

Computer Science & Engineering

Demography (Dual-Title PhD Program)

Economics

Geography

Health Policy & Administration

Human Development & Family Studies

Information Sciences & Technology

Political Science

Statistics

Sociology

This publication is available in alternative media on request. Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.

Interested in more information  
or would like to apply?

Visit the program  
website at:

<http://bdss.psu.edu>



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by the National Science Foundation  
and Pennsylvania State University**

BDSS-IGERT  
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## Big Data Social Science IGERT Program

**NSF Sponsored  
Interdisciplinary  
Doctoral Traineeship at  
Pennsylvania State  
University**



## Program Overview

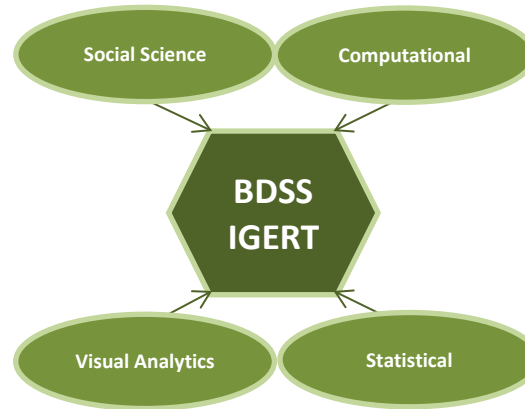
The Big Data Social Science IGERT program (BDSS-IGERT) draws together a diverse interdisciplinary team of researchers to create a new training PhD program in Social Data Analytics, aimed at enabling a new type of scientist capable of meeting emerging big data challenges. Merging statistics, computer science, visual analytics, and social science, the program is intended to establish new models for graduate education and training in a fertile environment for collaborative research that transcends traditional disciplinary boundaries, and to engage students in understanding the processes by which research is translated to innovations for societal benefit.

## Sample Student Projects

- Synthetic Data and Privacy in Social Networks
- Detecting Salient Events in Video and Audio Recordings of Dyadic Interactions Within Couples
- Text Analytics of Arabic Parliamentary Speech
- Improving Disaster Response by Geo-locating Tweets
- The Geography of Immigrant Status, Minority Status, and Health Disparities Among Children
- Visualizing Uncertainty in Complex Data
- Predicting Successful Matches in Online Dating Sites
- Forecasting Violent Political Events
- Parallelizing Complex Statistical Models of Social Data



First BDSS-IGERT Trainee Cohort 2012-2014



BDSS-IGERT is a collaboration of the social, computational, statistical, and visual sciences.

## Traineeships

Financial Support:

- Two year traineeship
- \$30,000 annual stipend
- Full Tuition
- Health Insurance Benefits
- Allowance for research expenditures, publication, conferences attendance

Responsibilities:

- Additional coursework
- Four semesters of research rotations at Penn State
- Two summer externships
- Competitive challenges
- Collaborative research projects

## Program Curriculum

The IGERT curriculum is aligned with the student's goals and provides training, using both coursework and research involvement, to extend and supplement the core PhD discipline.

**Core seminars**

- Approaches & Issues in Big Social Data
- Approaches & Issues in Social Data Analytics

**Analytics, e.g.:**

- Data Mining
- Machine Learning
- Visual Analytics

**Ethics & Scientific Responsibility, e.g.:**

- Privacy in Statistical Databases
- Data Privacy, Learning, and Games
- Big Social Data and the Law
- The Information Environment

**Social Data Analytics** for social science students (taught in non-social science departments), e.g.:

- Network Science
- Vision-Based Tracking
- Pattern Recognition
- Information Retrieval and Organization
- Web Analytics
- Spatial Analysis

**Social Data Analytics** for students outside the social sciences (taught social science departments), e.g.:

- Modeling Interdependent Data
- Political Event Data and Forecasting
- Social Network Analysis
- Causal Inference
- Multilevel Modeling
- Spatial Demography
- Intensive Longitudinal Data
- Geospatial Science in Anthropology