

Herding cats: Pros and Cons of a large-team approach to data science at a major research university

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History of data sciences at Penn State

- ▶ 2014: The Department of Information Sciences and Technology (IST) proposes an undergraduate major in data science
 - ▶ IST wanted statistics courses among the requirements
 - ▶ Computer Science balks due to “new” courses proposed that overlap with existing CS courses.
 - ▶ IST’s proposal goes nowhere in original form.
- ▶ 2015: IST, CS, and Statistics propose an undergraduate major in data sciences, to be jointly administered among 3 different colleges.
- ▶ Important: This DS major is not the only DS game in town. More on this later.

Don't let the perfect be the enemy of the good

- ▶ To get the DS major started, we required existing courses in STAT, CS, and IST.
- ▶ I strongly favor specially designed DS courses—such as Berkeley's Data 8—but such development takes a time.
- ▶ I think it's better to get a program up and running than to delay while courses are developed: Above all, waiting doesn't serve students.

Data Science is an evolving field



- ▶ Whatever DS is, anyone knowledgeable these days will say that it overlaps statistics.
- ▶ As support for this position, see the 2016 white paper along with many, many discussions like this panel.

<http://www.amstat.org/asa/files/pdfs/Chairsworkshop/WhitePaper.pdf>

Just as there was a time when statistics was nervous about being shut out by CS and others, and we rightly thought this was improper, I think it would be a mistake to try to claim DS as part of statistics.

That many want to get into DS is a good thing

- ▶ At Penn State, IST (Information Sciences and Technology) has been pushing hard to start not only an undergraduate major but also a minor, master's degree, and graduate certificate.
- ▶ On one hand, I'd like to see more statistics and CS faculty excited to help with this.
- ▶ On the other, this work takes time and I've come to appreciate the enthusiasm of IST for taking it on. Cultivating a working relationship is very worthwhile.
- ▶ Many, many others have expressed interest. . .

usually!
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The screenshot shows the Penn State Social Data Analytics website. At the top left is the Penn State College of the Liberal Arts logo. Next to it is the text "Social Data Analytics @ PENN STATE". To the right is a search bar with the placeholder text "Type To Search...". Below the header is a navigation menu with links: HOME, GOALS, MAJOR REQUIREMENTS, RESEARCH, JOB OPPORTUNITIES, IN THE NEWS, and PROSPECTIVE STUDENTS. The main content area has a green background with a binary code pattern. It features a quote: "Data is the ultimate roadmap, and job candidates who can navigate it are poised for success." attributed to Mark Bregman, Chief Technology Officer, Neustar Inc. Below the quote is a section titled "Welcome to the new undergraduate major in Social Data Analytics (SoDA)!" followed by a paragraph stating: "Penn State has been a leader in Social Data Analytics at the graduate level through its innovative Big Data Social Science-Interactive Graduate Education and Research Teleconsortium (BDS-IGERT). Now Penn State's Social Data Analytics major..."

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- ▶ Administered by our political science department
- ▶ Knowledgeable colleagues who involved stats from the start

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- ▶ Even in a couple cases where other groups held negative or inaccurate views of statistics, working together has turned out well eventually.

Summary: Expanding the Tent

- ▶ Data Science at a large university like Penn State is a complicated, multi-party affair.
- ▶ If that's what “Expanding the Tent” means, then it's good to embrace it. . .
- ▶ . . . and know that you can turn to the statistics community for advice and moral support!