

**Towards a Strategy for Data Sciences at the
University of Wisconsin**

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Paul Rathouz

**Department of Biostatistics and Medical
Informatics**

**Goal: Robust infrastructure supporting
collaborative team science**

Biostatistics Model I Principles

- Early and often
- Free to investigator
- Biostatistics faculty (including Scientists)
 - Co-I's [full partners]
 - Committed to training the next generation

Biostatistics Model I Implementation

- TT faculty committed to team science [broad scientific oversight; many other responsibilities]
- Scientists (PhD) at both junior and senior levels [important middle ground]
- Researcher (MS) level staff [to get stuff done]

Biostatistics Model I Project Level

Triangulation:

- 1 PhD Data Scientist
 - + 1 MS Researcher
 - + 1 PI collaborator
- PI collaborator may also have senior mentor

Other areas of **collaborative team science**

What about **bioinformatics**

clinical research **informatics**

massive **database** problems

distributed computing / storage problems ?

Other areas of **collaborative team science**

Need a similar model for **each** of these areas of **data science** ... some of this already exists

Training | PhD in Biomedical Data Science

- **Best of statistical and computational** traditions to advance **biology** and **biomedical science**
- **Triangulation**
 - Biostatistics [1-2 areas of emphasis]
 - Biomedical Informatics [1-2 areas of emphasis]
 - Domain area science and collaboration
- First class, Fall 2018 | Karl Broman, Director

Linking Methods to Collaboration | Center for Predictive and Computational Phenotyping

Structure: about 12 units

- 5 collaborative **projects** requiring novel methods
- 4 methodological "labs" -- more general issues
- education and outreach
- ethics

Seek a **balance** between outward and inward facing

Data Science Hub | Three Keys to Success

- Linking **methods** and **collaboration**
- Strong **training** environment
- Two levels of **triage** and **concierge**
 - From broad data science to key sub-area
 - Guidance within sub-area
 - Need senior and high-level people in these roles