

Data Science for the Masses: start small, think big

Kirk Borne, GMU School of Physics, Astronomy, & Computational Sciences

- **Data Science (Informatics) in Education**

- Work with data in all learning settings.
- Use data for inquiry-based classroom learning experiences.
- Learning is enhanced when students work with real data and information (especially online data) that are related to the topic (any topic) being studied.
 - ❑ <http://serc.carleton.edu/usingdata/> (“Using Data in the Classroom”)

- **An Education in Data Science (Informatics)**

- Data Scientists are specifically trained ...
 - ❑ ... to access large distributed data repositories
 - ❑ ... to conduct meaningful inquiries into the data
 - ❑ ... to mine, visualize, and analyze the data
 - ❑ ... to make objective data-driven inferences, discoveries, and decisions

- **Teach by Example: follow an evidence-based “forensics” approach**

- Science is data-driven (evidence-based).
- The Scientific Method does not begin with “hypothesis formulation” ...
 - ... neither should any reasoning process start with pre-conceived conclusions.
- Big Data provide an excellent framework and environment for dealing with this.
- By including Data Science in all of our education programs, we train the next-generation workforce in the art of informed, objective, data-driven, evidence-based decision-making.
- Isn't this what we expect from all of our citizens?