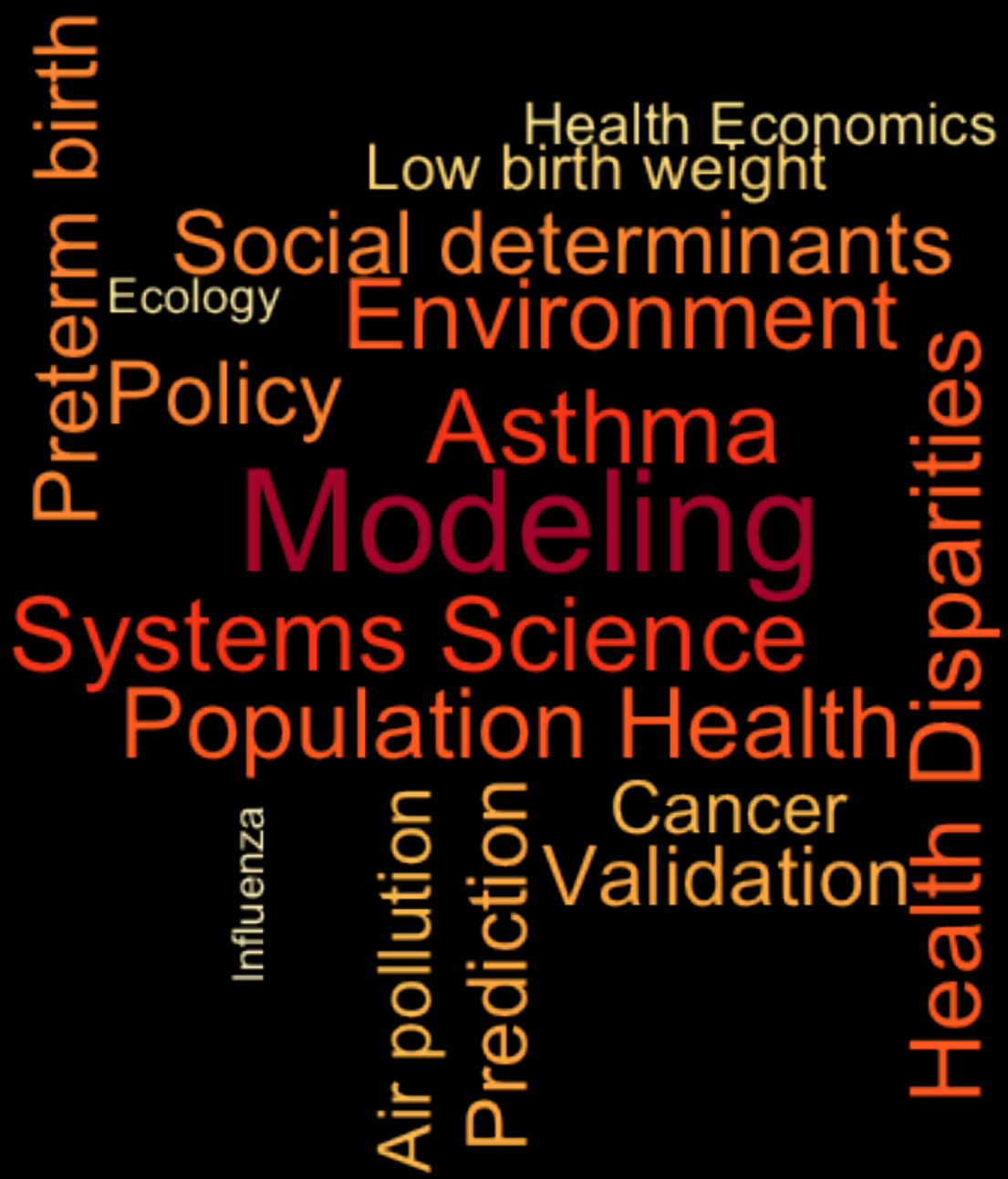
Computational epidemiology is the study of disease using computer models



My research aims are:

1. **To explore** patterns and relationships between multiple determinants of health from multiple data types and sources (e.g., clinical, demographic, satellite, social media) at multiple levels of organization (cell to society)
2. **To develop** computational epidemiology methods for generating and testing hypotheses in epidemiology and public health
3. **To provide** practical, manageable and cost-effective solutions to decision-makers using well-calibrated and extensively validated computer models.

Cautions on "Big" Data and in Epidemiology and Public Health Decision-Making

“Big” data ≠ “Big” progress unless we do the following:

1. Be consequential—research that matters
2. Validate data sources and methodologies
3. Reduce uncertainty (i.e. noise vs. signal, bias, error)
4. Compare “Big” data-based results with traditional epidemiology methods and models
5. Develop interdisciplinary training programs
6. Embed data scientists within policy-making entities
7. Develop standards for analysis, reporting, and share data (when possible)

Potential for Collaboration

"Using big data leads to better predictions,
and better predictions yield better decisions."[1]

1. **"Big" ideas** need "Big" data
2. **Grant-writing** experience with a systems-science focus
3. **Experienced** in multiple disciplines and methods
4. **Build bridges** between biologist (wet-lab), clinicians, epidemiologists, statisticians, mathematicians, and programmers
5. **Evidence** of successful collaborations
6. **Currently looking** for independent scientist positions

1. MacAfee and Brynjolfsson in Harvard Business Review (October, 2012, pg. 61-68)