Understanding the beginning of life with exploratory bioinformatics investigation

Presented by:

Xijin Ge, PhD
Dept. of Mathematics & Statistics
South Dakota State University

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First proposed by Tukey, the goal of exploratory data analysis (EDA) is to explore a dataset and find what it can tell us. It is open-ended and much broader than testing pre-defined hypotheses or building desired models. EDA can serve as a strategy to generate new hypotheses from big biomedical data. I will present a case study aimed at mining genomic data to understand the beginning of life: how a fertilized egg develops in the first few days. We found evidence that the "junk" DNA in our genomes might be essential to kick-start the embryo development program (see paper at BMC Genomics 18:200, 2017). I will also demonstrate how online bioinformatics tools (see http://ge-lab.org/) can be easily created using R and Shiny from RStudio.

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