BIOMEDICAL DATA SCIENCE PRESENTS:
BIODS 260
10/13/22 1:30PM-2:30PM
MSOB X303 (SEE ZOOM DETAILS BELOW)

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TITLE:

Leveraging Information in the Human Genome to Improve Skin Health and to Advance the Practice of Dermatology

ABSTRACT:

Title: Leveraging Information in the Human Genome to Improve Skin Health and to Advance the Practice of Dermatology
Abstract: The process of diagnosing a patient historically has largely relied on clinical observations of symptoms by physicians. Limitations of a clinical diagnosis have been identified with the use of genetic and genomic technologies, which demonstrate that a molecular diagnosis derived from biomedical data can provide greater diagnostic accuracy and inform subsequent management. I conduct human genetic studies as a starting point for leveraging information in the human genome to improve the accuracy and utility of a skin disease diagnosis. Statistical evidence for an association between an inherited genetic variant and a disease outcome is a definitive marker for a disease mechanism, but does not provide adequate resolution of the mechanism for clinical translation. The scale and complexity of biomedical data that is available to define disease mechanisms requires data-driven approaches to identify salient features and to detect patterns among them that link disease mechanisms to interventions and outcomes. Using the hair follicle as a model organ to understand mappings between disease mechanisms and clinical diagnoses, our group is using clustering, network, and tensor factorization methods to discover clinically relevant relationships among genetically-derived disease entities. I will present results from three studies that our group is conducting that leverages knowledge about inherited genetic variants, disease genes, pathways, and/or comorbidities to define an underlying causal structure of skin disease pathogenesis and to identify key genetic regulators of hair follicle health.

Suggested Readings:
https://www.nature.com/articles/s41598-017-16050-9
https://dl.acm.org/doi/abs/10.1145/3368555.3384464

Zoom link: https://stanford.zoom.us/j/92865685887?pwd=YjlUM1cxOHZ4UnBZMkhqcG1JYzFNdz09

Meeting ID: 928 6568 5887
Password: 219826