Genomics and Bioinformatics Hub
A new program providing bioinformatics collaboration, services, and training in Brigham and Harvard

Our Team: Unique intersection of computation, genomics, and neurology

- Assistant Professor in Neurology, BWH and HMS
- PhD in genomics and bioinformatics
- specialized in transcriptional regulation of eukaryotic genome
- Was an active member in ENCODE consortium
- Leading a bioinformatics team in Precision Neurology Program since 2013
- Currently funded by APA, ASAP, and NIH

Our Publications: Discoveries with medical impact

- Dong et al. Nature Neuroscience, 2018
- Application of machine learning to disease prediction
- Integration of multi-dimensional multi-source data (e.g. omics, clinical, imaging, and wearable device)
- Applying the latest machine learning methods to predict disease diagnosis and progression

Our Expertise

- Next-generation sequencing (NGS) data analysis
  - Single-cell omics analysis (scRNA-seq/ATAC-seq, clustering, trajectory analysis, spatial transcriptomics, etc.)
  - RNA-seq analysis (from raw sequencing data to QC, to normalized gene expression table, group comparison, pathway analysis, and interactive reporting and visualization of the results)
  - Small RNA-seq analysis (e.g. miRNAs, circRNAs, piRNAs, eRNAs, etc.)
  - CHIP-seq analysis (e.g. QC, peak calling, differential binding)
  - Variant calling from genotyping/WGS/WES data
  - Other NGS data analysis (Methyl-seq, CAGE, ChIA-PET, Hi-C etc.)
  - Streamless NGS analysis on cloud computing environment

Transcriptional regulation of eukaryotic genome

- Discovery of regulatory elements (e.g. promoter, enhancer) in the vertebrate genome
- Epigenetic regulation of gene expression
- Cis- and trans-regulation of genetic variants (both SNP and SV) to gene expression, e.g. eQTL, in both healthy control and disease setting

How to work with us

- Flat price: $150/hr for any BWH/MGH/DFCI labs
- New customer discount: 50% off for the first 30 hours

Contact us for your next project

- Hale Building for Transformative Medicine
  - 9th Floor, 9002M
  - Brigham and Women's Hospital
  - 60 Fenwood Road, Boston
- Director: Xianjun Dong, PhD
- Email: bioinformatics@bwh.harvard.edu

Tools and Data Resources

- Data service we host
- www.humanbraincode.org
- powereqtl.shinyapps.io/powerEQTL
- bioinformatics.bwh.harvard.edu