BOTING NING

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EDUCATION

Ph.D., Boston University, Bioinformatics Jul 2017 - expected Jun 2022

- Mentored by Beane, JE, Lenburg, ME and Spira AE
- Received Moorman-Simon fellowship

MPH, Boston University, Biostatistics Sep 2014 - May 2016

- Received Merit Scholarship

B.A., Vanderbilt University, Molecular & Cellular Biology Sep 2009 - May 2013

- Graduated with honor from Biology Department for outstanding research; Received VUSRP Scholarship

RESEARCH & WORK EXPERIENCE

Dr. Avrum Spira and Dr. Marc Lenburg's Lab 05/2018-Present

Graduate Research Assistant Boston, MA

- Identified airway basal cell specific miRNA that contributes to bronchial PML progression using sample-match gene and miRNA expression profiles
- Led interdisciplinary investigation on Hippo and TP63 pathways as novel therapeutic targets to intercept early lung cancer progression
- Developed novel algorithm and R package `DReAmiR` for detecting miRNA regulatory network rewiring across multiple cancer-subtypes or cell-tpyes
- Evaluated the predictive power of nasal epithelium miRNA expression profiles in differentiating malignant IPNs

Dr. Qiong Yang's Lab 08/2016-05/2017

Research Assistant Boston, MA

- Identified novel genetics factors and relevant pathways associated with Brain-Derived Neurotrophic Factors using genome-wide genotyping array and whole genome sequencing from FHS and other cohorts in CHARGE consortium.
- Performed GWAS collaborating with CKDGen Consortium using densely imputed FHS genotype data to identify novel loci related to kidney disease, while controlling for population substructure.

Epidemico, Inc. (acquired by Booz Allen Hamilton) 04/2015-08/2016

Analyst Boston, MA

- Facilitated the development of machine learning classifier for SupplyChainMap based on health informatics data
- Improved natural language processing function of SupplyChainMap, resulting in high sensitivity for differentiating true safety alert (>95%)

SELECTED PUBLICATIONS

Ning B, Pfefferkorn RN, Liu G, Zhang S, Liu H, Stevenson C, Reid ME, Mazzilli SA, Spira AE, Lenburg ME, and Beane JE. The role of epithelial miR-149 in immune modulation and progression of bronchial premalignant lesions. *In preparation.*

Ning B, Tilston-Lunel A, Berthet JH, Mazzilli SA, Beane JE, Lenburg ME and Varelas X. Transcriptional crosstalk between YAP, TEAD and TP63 is associated with early lung carcinogenesis. *In preparation.*

Ning B, Spira T, Beane JE and Lenburg ME. Differentail regulation analysis quantifies mirna regulatory roles and molecular subtype-specific targets. *Ready for submission.*

Zhu H and **Ning B**. Regulatory landscapes of specific miRNAs are conserved between cell lines and primary tumors. F1000Research 10 (633), 633.

Hicks-Berthet J, **Ning B**, Federico A, Tilston-Lunel A, Matschulat A, Ai X, Lenburg ME, Beane JE, Monti S and Veralas X. Yap/Taz inhibit goblet cell fate to maintain lung epithelial homeostasis. Cell reports 36 (2), 109347.

SKILLS

Bioinformatics: (single-cell)RNA-seq, ChIP-seq, CUT&RUN, Small RNA-seq

Statistics & Machine Learning: Generalized Linear Model, Network Model, Supervised/unsupervised Learning

Program Languages: R, Python, Bash, Nextflow, SAS

Public Databases: GEO, cBioPortal, TCGA, CCLE, ENCODE, DepMap, CMAP, GTEx, FANTOM5

Scientific Communication: RShiny, plotly, LaTeX, (R)markdown, Jupyter Notebooks