

# 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

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## RESEARCH & WORK EXPERIENCE (2015-Now)

**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-types
- 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%)

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## 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. Differential regulation analysis quantifies mirna regulatory roles and molecular subtype-specific targets. *Ready for submission.*

Zhu H and **Ning B** (2021) Regulatory landscapes of specific miRNAs are conserved between cell lines and primary tumors. *F1000Research*. 10 (633), 633.

Hicks-Berthet J, **Ning B**, . . . , Lenburg ME, Beane JE, Monti S and Veralas X (2021) Yap/Taz inhibit goblet cell fate to maintain lung epithelial homeostasis. *Cell reports* 36 (2), 109347.

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## 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