Lite Yang

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EDUCATION

Brandeis University — Waltham, MA
M.S. in Biotechnology — August 2016 - May 2018

Tongji University — Shanghai, China
B.S. in Biotechnology — September 2011 - June 2015

Harvard Extension School — Boston, MA
Current coursework: intermediate statistics — January 2019 - present

PUBLICATIONS

Zhang, L. J., Chen, S. C., **Yang, L. T.**, Jin, L., & Köhler, F. (2015). Systematic revision of the freshwater snail *Margarya* Nevill, 1877 (Mollusca: Viviparidae) endemic to the ancient lakes of Yunnan, China, with description of new taxa. *Zoological Journal of the Linnean Society*, 174(4), 760-800.

Renthal, W., Tochitsky, I., **Yang, L.**, Cheng, Y., Li, E., Kawaguchi, R., Geschwind, D. H., & Woolf, C. J. (2019). Transcriptional reprogramming of distinct peripheral sensory neuron subtypes after axonal injury. *bioRxiv*, (), 838854.

SKILLS

Computation: R, Python, Java, HTML, database architecture, Slurm based computing cluster

Laboratory: single-nucleus RNA-seq (snRNA-seq), ATAC-seq, fluorescence activated cell sorting (FACS), DNA cloning (ligation, Gateway cloning, Gibson assembly, etc.), CRISPR-Cas9, mammalian cell culture

RESEARCH EXPERIENCE

Harvard Medical School / Brigham and Women's Hospital / Boston Children's Hospital — Boston, MA
Research assistant II; Supervisors: Clifford Woolf, William Renthal — July 2018 – present

- Profiled transcriptional changes in dorsal root ganglion (DRG) neurons after axonal injury using snRNA-seq and identified a new cellular state
- Designed two orthogonal bioinformatic approaches to trace cell type lineages after injury
- Conducted computational analyses to identify transcription factors driving injury and regeneration, predict their binding motif enrichment in gene sets of interest, and infer their regulation activities in single nucleus

- Designed and developed a user-friendly website (www.painseq.com) allowing interactive exploration of associated data, thereby aiding future studies for novel pain therapeutics
- Developed a protocol to create uniquely barcoded adeno-associated viral plasmids, allowing for large-scale library generation and individual tracking and identification in single cell sequencing
- Applied the protocol to knockout/knockdown of genes of interest *in-vitro* with CRISPR-Cas9/shRNA
- Optimized protocols to dissociate nuclei from frozen mouse DRG samples and frozen human trigeminal ganglion samples for snRNA-seq
- Using ATAC-seq to assess the chromatin accessibility in DRG neuronal cell types with the aim of screening cell-type-specific enhancers
- Standardizing protocols to sort for specific DRG neuronal cell types with marker gene expression using FACS

Brandeis University Waltham, MA
Research assistant; Advisor: Stephen Van Hooser January 2018 - May 2018
- Assisted with designing a cross-platform standard for integration and analysis of neurophysiological data
- Developed tools compatible with the standard in Python, including development of the database, data I/O pipelines, and the toolbox for the implementation of data types, experiments and devices

Brandeis University Waltham, MA
Research student; Advisors: Michael Marr, Vincent Sutera September 2016 - May 2017
- Constructed a reporter system with Gateway Technology to study DNA damage repair mechanism in *E. coli*
- Generated a protocol to screen for protein-protein interactions with Yeast Two-hybrid System

985 Innovation Project, Tongji University Shanghai, China
Project member, Advisor: Shichao Chen December 2011 - May 2014
- Collected specimens of freshwater snails from 17 lakes across Yunnan Province, China
- Re-described the taxonomy with detailed morphological and genetic features; defined a new genus upon examination of the molecular phylogenetic relationship

EXTRACURRICULAR ACTIVITIES

Agrivida Inc. Medford, MA
Summer intern June 2017 - August 2017
- Quantified expression of the protein of interest in different corn tissues with ELISA
- Profiled the protein of interest for thermal and pH stability during the manufacturing process
- Shadowed senior scientists to design trials, collect, analyze, and report data within the company

Yunnan Open University Kunming, China
Workshop member October 2015 - June 2016

- Studied Java, SQL and web programming languages full-time
- Worked in a software development team to develop a management platform of transportation logistics, and assist for testing and debugging

PRESENTATIONS

Single-nucleus RNA sequencing reveals transcriptional reprogramming of peripheral sensory neuron subtypes after axonal injury. Harvard Medical School Epigenetics & Gene Dynamics Symposium. September 2019

Brandeis Biotech, Health & Science Industrial Meetup. January 2019

Characterization of enzyme expression in the genetically modified corn kernel. Brandeis Summer Internship Symposium, September 2018

Study of the taxonomy of the freshwater snail in lakes of Yunnan using morphological features and molecular phylogenetic analyses. Tongji University Undergraduate Research Symposium, October 2014

AWARDS AND SCHOLARSHIPS

Merit Scholarship, 2016 - 2018

Excellence in Leadership Award, 2014