Dominic Skinner

(707) 360-8614
Dominicskinner.neuro@gmail.com
www.linkedin.com/in/dominic-skinner

Summary

I'm an aspiring cell biologist with a versatile background in neuroscience, immunology, bioinformatics and virology. My research expertise is in studying neurodegeneration using *in vivo* and *in vitro* models of disease and applying cutting edge single cell transcriptomics to both mouse and human samples. Currently, my goal is to be a part of an organization that is at the forefront drug discovery research, finding new therapies for hard to treat CNS diseases.

EDUCATION

Ph.D., University of Utah, Salt Lake City, UT **2016-2020**
- Interdepartmental Program in Neuroscience, Laboratory of Dr. Thomas E. Lane, Department of Pathology, School of Medicine

Bachelor of Science, University of Puget Sound, Tacoma, WA (GPA: 3.60) **2012-2016**
- Major 1: Molecular and Cellular Biology, Neuroscience emphasis
- Major 2: Economics

RESEARCH EXPERIENCE

Post-Doctoral Fellow, Dr. Christine Cheng, J. Craig Venter Institute, La Jolla, CA **2021-Present**
- Profiling CNS and immune cells using sn-RNAseq and sc-RNAseq in human tissue from 3 separate brain regions in opioid and HIV infected patient tissue
- Developing 3D-Organoid model to study effects of substance abuse and Alzheimer's disease on neurons, astrocytes, and oligodendrocytes *in vitro*
- Performing small molecule and CRISPR screens to find targets to reduce neuro-degenerative effects observed in opioid and Alzheimer patients using 3D-Organoid model

Visiting Researcher, Dr. Thomas E. Lane, University of California: Irvine, Irvine, CA **2020**
- Led multiple collaboration projects with biotechnology companies to use our mouse coronavirus model of neurodegeneration to test therapeutics and new technologies for efficacy in fighting the COVID pandemic.
- Underwent national BSL3 training program and submitted SOPs to start projects at the BSL3 level working directly with the SARS-COVID-2 pathogen and its possible role in neurologic disorders.

Graduate Research Assistant, Dr. Thomas E. Lane, University of Utah, Salt Lake City, UT **2016-2020**
- Investigate the role of chemokine signaling in small populations of neutrophils and glial cells using mouse coronavirus model of neurodegeneration *in vivo*
- Used sc-RNAseq and flow cytometry and other molecular techniques to measure and characterize immune cell infiltration and resident glial cells from both brain and spinal cord tissue
- Trained new members of lab and mentored multiple undergraduate and master's students on independent project development

Research Assistant, Dr. Siddharth Ramakrishnan, University of Puget Sound, Tacoma, WA **2013-2016**
- Determined the effects of BPA and stress hormones on the development of sexual maturation neurons (GnRH) in zebrafish
- Used immunofluorescent microscopy and behavioral assays to quantify the effects elevated stress in larval and adolescent zebrafish

Research Assistant, Dr. Kate Sterling, University of Puget Sound, Tacoma, WA **2015-2016**

- Developed research methodology to investigate the effects of oxytocin on financial decision making

Wine Laboratory Assistant, ETS Laboratories, Saint Helena, CA **2012-2014 (Summers)**

- Managed the receiving, organization, and disposal of wine samples
- Assisted with database creation, asset tracking, and instrument setup

PUBLICATIONS

Skinner, D. D., Syage, A. R., Marro, B. S…Lane, T. E. Contribution of neutrophils to demyelination following central nervous system infection by a neurotropic murine coronavirus. *Manuscript in preparation.*

Syage, A. R., Ekiz, H. A., **Skinner, D. D**… Lane, T. E. (2020) Single-cell RNA sequencing reveals the diversity of the immunological landscape following CNS infection by a murine coronavirus. *Journal of Virology. https://doi.org/10.1128/JVI.01295-20*

Mangale, V*., Syage, A. R*., Ekiz, H. A*., **Skinner, D. D**., Cheng, Y., … Lane, T. E. (2020) Microglia influence host defense, disease, and repair following murine coronavirus infection of the central nervous system. *Glia. 1– 16. https://doi.org/10.1002/glia.23844* *Authors contributed equally to this work

Skinner, D. D., Lane, T. E. (2019). Review: The Role of CXCR2 in remyelination using preclinical mouse models of multiple sclerosis. (Cover Article). *DNA and Cell Biology*. https://doi.org/10.1089/dna.2019.5182

Marro, B. S*., **Skinner, D. D*.**, Cheng, Y., Grist, J. J., Dickey, L. L., Eckman, E., … Lane, T. E. (2019). Disrupted CXCR2 signaling in oligodendroglia lineage cells enhances myelin repair in a viral model of multiple sclerosis. *Journal of Virology*. https://doi.org/10.1128/JVI.00240-19 *Authors contributed equally to this work

Cheng, Y*., **Skinner, D.D*.,** Lane, T.E*. (2019) Review: Innate Immune Responses and Viral-Induced Neurologic Disease. *J. Clin. Med*. 8, 3. https://doi.org/10.3390/jcm8010003 *Authors contributed equally to this work

Skinner, D., Marro, B. S., & Lane, T. E. (2018). Review: Chemokine CXCL10 and Coronavirus-Induced Neurologic Disease. *Viral Immunology*. https://doi.org/10.1089/vim.2018.0073

Grist, J. J., Marro, B. S., **Skinner, D. D**., Syage, A. R., Worne, C., Doty, D. J., … Lane, T. E. (2018). Induced CNS expression of CXCL1 augments neurologic disease in a murine model of multiple sclerosis via enhanced neutrophil recruitment. *European Journal of Immunology (Cover Article*), 48(7), 1199–1210. https://doi.org/10.1002/eji.201747442

PROFESSIONAL EXPERIENCE

Supply Chain Management Program, Genentech **2020**

- Participated in a 3 week virtual course to develop pharmaceutical supply chain logistics and create strategies to provide sustained access to medicine and therapies.

Intern- Research and Early Development, Genentech **2020 *Canceled due to COVID-19***

- Accepted a summer internship to work as part of the Microchemistry, Proteomics & Lipidomics team

New Venture Development Associate, Lassonde Entrepreneur Institute **2019-2020**

- Identify market potential for new neuroscience technologies at the University of Utah
- Provide strategic planning to faculty inventors around technology commercialization

Impact Investment Analyst, Sorenson Impact Center **2019**

- Conduct due diligence on technology, biotechnology and healthcare startups
- Make recommendations for early stage investment, consult for portfolio companies

TEACHING EXPERIENCE

Brain Awareness Week Education Volunteer, University of Utah, Salt Lake City, UT **2016-2019**

- Educate the public about the central nervous system and neurological diseases
- Taught basic human and animal neuroanatomy to children and adults using human tissue samples and brain models
- Led modules on microscopy for high school students

Neuroscience Teaching assistant (NRSC 201), University of Puget Sound, Tacoma, WA **2016**

- Collaborated on weekly laboratory exercises including fluorescent staining and Neuron SpikerBox recording modules
- Prepared and setup reagents and modules for the laboratory component of class

- Met with students to develop independent projects

Economics Teaching assistant (ECON 170), University of Puget Sound, Tacoma, WA **2015**

- Assisted with homework questions for Contemporary Economics course
- Led review sessions and met with students to help with test preparation

Assistant Instructor Sci|Art NanoLab Summer Program, UCLA, Los Angeles, CA **2015**

- Setup and assisted with workshops at the California NanoSystems Institute for a 2-week college program for 70 high school seniors.

LEADERSHIP EXPERIENCE

ACTRIMS Young Scientist Summit, Americas Committee for Treatment and Research in MS **2019-Present**

- Selected to attend the annual Young Scientist Summit for treatment of Multiple Sclerosis and discuss current and future of treatments with leading researchers and clinicians in the MS field

Co-Chair of Recruitment Committee, U of U Neuroscience Program **2018-2019**

- Organize the yearly recruiting effort for the Neuroscience Program including coordinating interview schedules, ski trip, and host student responsibilities

Graduate Student Representative of the Intermountain Chapter, Society for Neuroscience **2017-2019**

- Organize the SFN sponsored poster session for undergraduate, graduate students and post-docs at the annual University of Utah Neuroscience Program Snowbird Conference

Organizer of Translational Neuroscience Social Hour, U of U Neurology Department

- Organize a monthly meeting where researchers and clinicians present their current findings to foster collaboration in the translational neuroscience community **2017-2019**

ORAL PRESENTATIONS

Skinner, D., *Remyelination in a Viral Model of Multiple Sclerosis.* 3 Minute Thesis Competition, Salt Lake City, UT. **August 2019**

Skinner, D., *Contribution of Neutrophils to Disease Progression in a Viral Model of Multiple Sclerosis.* Pathology Department Research in Progress, Salt Lake City, UT. **May 2019**

Skinner, D., *Contribution of Neutrophils to Disease Progression in a Viral Model of Multiple Sclerosis.* University of Utah Neuroscience Student Symposium, Salt Lake City, UT. **May 2019**

Skinner, D., *Induced CNS expression of CXCL1 augments neurologic disease in a murine model of multiple sclerosis via enhanced neutrophil recruitment.* FASEB Translational Neuroimmunology Conference. Snowmass, CO. **July 2018**

Skinner, D., *Neutrophil Mechanisms of Action Contribute to Virally Induced Demyelination in a preclinical model of MS.* Department of Neurology Translational Neuroscience Social Hour, Salt Lake City, UT. **January 2018**

POSTER PRESENTATIONS

Skinner, D., Syage, A., Marro, B.S., Stone, C., and Lane, T.E "Contribution of neutrophils to disease progression in a murine coronavirus model of neurotropic disease." FASEB Translational Neuroimmunology Conference. June 29-30, 2020. Virtual.

Skinner, D., Syage, A., Marro, B.S., Stone, C., and Lane, T.E "Neutrophils augment demyelination in a viral model of multiple sclerosis." Cell Symposia: Neuro-Immune Axis. September 22-24, 2019. Long Beach, CA.

Skinner, D., Marro, B.S., Cheng, Y.; Grist, J.J., Dickey, L.L., Eckman, E., Worne, C., Liu, L., Ransohoff, R.M., and Lane, T.E "Disrupted CXCR2 signaling in oligodendroglia lineage cells enhances myelin repair in a viral model of multiple sclerosis." ACTRIMS 2019 Forum. February 28-March 2nd, 2019. Dallas, TX.

Skinner, D., Marro, B.S., Grist, J.J., Dickey, L.L., Eckman, E., Worne, C., Liu, L., Fujinami, R.S., Ransohoff, R.M., and Lane, T.E., "Disrupted CXCR2 signaling in oligodendroglia lineage cells enhances myelin repair in a viral model of multiple sclerosis." Pathology Department Retreat. August 10-11, 2018. Park City, UT.

Skinner, D., Grist, J.J., Marro, B.S., Syage, A., Worne, C., Doty, D.J., Fujinami, R.S., and Lane, T.E., "Induced CNS expression of CXCL1 augments neurologic disease in a murine model of multiple sclerosis via enhanced neutrophil recruitment." FASEB Translational Neuroimmunology. July 8-13, 2018. Snowmass, CO.

Skinner, Dominic and Ramakrishnan, Siddharth. "Cortisol Exposure Affects the Developing GnRH Neural System in Zebrafish." Murdoch 2015 Undergraduate Research Conference. November 5-6, 2015. Vancouver, WA.

Skinner, Dominic and Ramakrishnan, Siddharth. "Effects of Early Cortisol Exposure on the Developing GnRH Neuron System in Zebrafish." Society for Neuroscience 2015 Meeting. October 17-21, 2015. Chicago, IL.

Skinner, Dominic and Ramakrishnan, Siddharth. "Cortisol Exposure Affects the Developing GnRH Neural System in Zebrafish." University of Puget Sound Fall Symposium. September 10, 2015. Tacoma, WA.

Skinner, Dominic and Ramakrishnan, Siddharth. "Bisphenol A Affects Embryonic Catecholamine Release in the Pond Snail Helisoma trivolvis." Northwest Developmental Biology Conference. March 18-21, 2015. San Juan Islands (Friday Harbor Labs), WA.

Tetreau, Skyler; **Skinner, Dominic**; Ramakrishnan, Siddharth. "Bisphenol A Affects Early Embryonic Development in the Pond Snail Helisoma trivolvis." Society for Developmental Biology's 73rd Annual Conference. July 17-21, 2014. Seattle (University of Washington), WA.

PROFESSIONAL ACTIVITIES

- **Committee Member, U of U Neuroscience Program Seminar Series Committee** **2016-2019**
- **Committee Member, U of U Neuroscience Program Public Relations Committee** **2017-2019**
- **Committee Member, U of U Neuroscience Program Brain Bee Committee** **2016- 2019**
- **Member, Society for Neuroscience** **2015**

AWARDS AND SUPPORT

- **Pierre and Claudette McKay Lassonde New Venture Development Scholarship,** University of Utah **2019**
- **FASEB Neuroimmunology Conference Travel Award,** University of Utah **2018**
- **Beverly Pierson Research Engagement Award,** University of Puget Sound **2016**
- **James & Barbara Snow Biology Department Scholarship,** University of Puget Sound **2015**
- **Best Research Poster Award,** University of Puget Sound **2015**
- **Peter K. Wallerich Scholarship,** University of Puget Sound **2015**
- **University Enrichment Committee Student Research Award** University of Puget Sound **2015**
- **Summer NSF Research Grant,** University of Puget Sound **2015**
- **University Enrichment Committee Travel Award,** University of Puget Sound **2015**
- **University Enrichment Committee Travel Award,** University of Puget Sound **2014**

SKILLS AND TECHNIQUES

Skilled in: PCR, qPCR, gel electrophoresis, genotyping, husbandry, viral titer assay, inverted microscopy, ELISA, IHC, Histology, Multicolor- Flowcytometry, FACSDiva, Novocyte, Single Cell RNA seq and analysis, BSL2/ABSL2 (mouse), BSL3, GraphPad Prism, ImageJ, FlowJo, RNA extraction, DNA Extraction, Mouse work, Zebrafish work, BCA Assay, Oral Gavage (mouse), IP/IC/SC Injections (mouse), Manuscript Writing, Grant Writing,

Familiar With: Python, R, HTML, Cell Culture (mouse and human), Confocal Microscopy, 3D-Organoid Culture, ATAC-seq, Single Nuclei-seq, Multiplexed Single Nuclei-seq (Hash tagging)