John Snell
(360)710-5089
jcs296@case.edu

Research Interests

I am studying sequence based origin of the picornaviral 2A-peptide ribosomal skipping mechanism for use in biotechnology applications.

Skills and Competencies

- Anesthetic use and monitoring in mice
- MS sample preparation and analysis
- BCA protein assay technique
- Flow Cytometry
- Cell culture technique and astrocyte isolation and plating methods
- Western Blot
- PCR technique

Work Experience

Ph.D. Student – Matreyek Lab, Case Western Reserve University;
December 2022 – Present

- Perform high throughput assays to generate site saturation mutagenesis libraires
- Data analysis of large scale protein libraries.

Laboratory Technician II – Morgan and Sedensky Lab, Seattle Children's Research Institute;
February 2020 – June 2022

- Regularly performed experimental techniques including PCR, BCA assays, and western blots, as well as preparing and running samples on GCMS and assisting with cell culture
- Maintained laboratory animal colonies and performed techniques such as administration of general anesthesia, tail prick, and behavioral assays

Education

University of Washington, Seattle, WA
Bachelor of Science in Biochemistry
Bachelor of Science in Molecular, Cellular, and Developmental Biology
Graduation Date: June 2020
Cumulative GPA: 3.59

Case Western Reserve University, Cleveland, OH
Systems Biology and Bioinformatics Ph.D.
Expected Graduation Date: June 2027
Current Student

Publications

Spencer K.A., Howe M.N., Mulholland M.T., Truong V., Liao R.W., Chen Y., Setha M., **Snell J.C.**, Hanaford A., James K., Morgan P.G., Sedensky M.M., Johnson S.C. Impact of dietary ketosis on volatile anesthesia toxicity in a model of Leigh syndrome. *Pediatr Anesth*. 2024; 00: 1-10. doi:10.1111/pan.14855

Spencer, K. A., Mulholland, M., **Snell, J**., Howe, M., James, K., Hanaford, A. R., Morgan, P. G.,

Sedensky, M., & Johnson, S. C. (2023). Volatile anaesthetic toxicity in the genetic mitochondrial disease Leigh syndrome. British journal of anaesthesia, S0007 0912(23)00442-7. Advance online publication. https://doi.org/10.1016/j.bja.2023.08.009

Stokes J, Freed A, Bornstein R, Su KN, **Snell J**, Pan A, Sun GX, Park KY, Jung S, Worstman H, Johnson BM, Morgan PG, Sedensky MM, Johnson SC. Mechanisms underlying neonate-specific metabolic effects of volatile anesthetics. Elife. 2021 Jul 13;10:e65400. doi: 10.7554/eLife.65400. PMID: 34254587; PMCID: PMC8291971.

Stokes, J. C., Bornstein, R. L., James, K., Park, K. Y., Spencer, K. A., Vo, K., **Snell, J. C**., Johnson, B. M., Morgan, P. G., Sedensky, M. M., Baertsch, N. A., & Johnson, S. C. (2022). Leukocytes mediate disease pathogenesis in the Ndufs4(KO) mouse model of Leigh syndrome. JCI insight, 7(5), e156522. https://doi.org/10.1172/jci.insight.156522

Bornstein R, James K, Stokes J, Park KY, Kayser EB, **Snell J**, Bard A, Chen Y, Kalume F, Johnson SC. Differential effects of mTOR inhibition and dietary ketosis in a mouse model of subacute necrotizing encephalomyelopathy. Neurobiol Dis. 2022 Feb;163:105594. doi: 10.1016/j.nbd.2021.105594. Epub 2021 Dec 20. PMID: 34933094.

Poster Presentations

Development of an *in vitro* Assay to Assess the Impact of Mitochondrial Dysfunction on Cerebellar Metabolic Flux, Seattle Children's Research Institute, 3rd Annual SCRI Research Symposium for Postdocs and Students, Poster co-presented, November 7, 2019

The Impact of Volatile Anesthetics on Metabolic Sequelae in a Genetic Mitochondrial Disease Model, UW Anesthesiology and Pain Medicine, 13th Annual Academic Evening, Poster presented, October 5, 2021

The Impact of Volatile Anesthetics on Metabolic Sequelae in a Genetic Mitochondrial Disease Model, Seattle Children's Research Institute Center for Integrative Brain Research, 2021 SCRI CIBR Retreat, Poster presented, December 17, 2021