

John Snell
2820 Mayfield Rd. Apt. 402
(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 | • Cell culture technique and astrocyte isolation and plating methods |
| • MS sample preparation and analysis | • Western Blot |
| • BCA protein assay technique | • PCR technique |
| • Flow Cytometry | |
-

Work Experience

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

- Perform high throughput assays to generate site saturation mutagenesis libraries
- 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](https://doi.org/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