Samuel Flashner, Ph.D.

Postdoctoral Research Scientist, Nakagawa Lab, Columbia University
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Education

2016-2020 **PhD: Molecular & Cellular Biology & Genetics**
Drexel University College of Medicine**,** Philadelphia, Pennsylvania
Laboratory of Dr. Jane Azizkhan-Clifford

2013-2016 **MS: Cancer Biology**
Drexel University College of Medicine, Philadelphia, Pennsylvania
Thesis Track (Defended)
Laboratory of Dr. Jane Azizkhan-Clifford

2009-2013 **BS: Biology**
Providence College, Providence, Rhode Island

Research Experience

2020-Present **Postdoctoral Research Scientist,** Laboratory of Dr. Hiroshi Nakagawa. Characterizing how genome instability influences squamous cell carcinoma (SCC) pathogenesis. Leveraging mechanistic insights into actionable therapeutic strategies. Developing 3D organoids from primary patient tissue and murine models of disease.

2016-2020 **Ph.D.**, Laboratory of Dr. Jane Azizkhan-Clifford, Drexel University. Interrogated the role of transcription factor specificity protein 1 (Sp1) in maintaining genomic stability though its function in apoptosis, DNA repair, and cell division. Determined that Sp1 is required for faithful chromosome segregation and the maintenance of mitotic chromatin structure through regulation of chromosome condensation during mitosis.

2013-2016 **M.S.**, Laboratory of Dr. Jane Azizkhan-Clifford, Drexel University. Characterized a nontranscriptional role for Sp1 in regulation of centrosome number.

2012-2013 **Undergraduate Research Associate,** Laboratory of Dr. Yinsheng Wan, Providence College. Characterized interplay between TNFα, mTOR, and ROS production in both melanoma and normal human skin epithelial cells.

Selected Publications

2022 **Flashner, S**., Swift, M., Sowash, A., Fahmy, A.N. and Azizkhan-Clifford, J., 2022. Transcription factor Sp1 regulates mitotic chromosome assembly and segregation. *Chromosoma*, p.1-17.

2022 **Flashner S.**, Martin C., Matsuura N., Shomonosono M., Tomita Y., Morimoto M., Okolo O., Yu V.X., Parikh A.S., Klein-Szanto A., Yan K., Gabre J.T., Lu C., Momen-Heravi F., Rustgi A.K., Nakagawa H, 2022. Modeling Oral-Esophageal Squamous Cell Carcinoma in 3D Organoids. *JoVE,* p. 1-21.

2021 **Flashner, S**., Yan, K. S., and Nakagawa, H., 2021. 3D Organoids: An Untapped Platform for Studying Host–Microbiome Interactions in Esophageal Cancers. *Microorganisms*, *9*(11), 2182.

2021 Shimonosono, M., Tanaka, K., **Flashner, S**., Takada, S., Matsuura, N., Tomita, Y., Sachdeva, U.M., Noguchi, E., Sangwan, V, Ferri, L., Momen-Heravi, F., Yoon A.J., Klein-Szanto, A.J., Diehl, J.A., and Nakagawa, H., 2021. Alcohol Metabolism Enriches Squamous Cell Carcinoma Cancer Stem Cells That Survive Oxidative Stress via Autophagy. *Biomolecules*. 11(10):1479.

2021	Sachdeva, U.M., Shimonosono, M., **Flashner, S**., Cruz-Acuña, R., Gabre, J.T. and Nakagawa, H., 2021. Understanding the cellular origin and progression of esophageal cancer using esophageal organoids. *Cancer Letters*, *509*, pp.39-52.
2021	Swift, M.L., Beishline, K., **Flashner, S**. and Azizkhan-Clifford, J., 2021. DSB repair pathway choice is regulated by recruitment of 53BP1 through cell cycle-dependent regulation of Sp1. *Cell Reports*, *34*(11), p.108840.
2018	Torabi, B., **Flashner, S**., Beishline, K., Sowash, A., Donovan, K., Bassett, G. and Azizkhan-Clifford, J., 2018 Caspase cleavage of transcription factor Sp1 enhances apoptosis. *Apoptosis* 23:65.

Selected Presentations

2022	**Flashner, S**., Shimonosono, M., Takada, S., Matsuura, N., Tomita, Y., Chen, X., Taylor, A., Klein-Szanto, A., Momen-Heravi, F., Diehl, J.A., Lu, C., and Hiroshi Nakagawa., 2022. Loss of genomic stability occurs early during ESCC initiation and development. *Gordon Research Conference on Genomic Instability, DNA Repair, and Human Diseases.* ***Poster.***
2022	**Flashner, S**., Shimonosono, M., Takada, S., Matsuura, N., Tomita, Y., Chen, X., Taylor, A., Klein-Szanto, A., Momen-Heravi, F., Diehl, J.A., Lu, C., and Hiroshi Nakagawa., 2022. Leveraging a 3D organoid library to identify novel therapeutic targets during ESCC initiation and progression. *Genome Integrity Discussion Group Annual Gala.* ***Poster.***
2022	**Flashner, S**., Shimonosono, M., Takada, S., Matsuura, N., Tomita, Y., Chen, X., Taylor, A., Klein-Szanto, A., Momen-Heravi, F., Diehl, J.A., Lu, C., and Nakagawa, H., 2022. Leveraging a 3D organoid library to identify novel therapeutic targets during ESCC initiation and progression. *AACR Annual Meeting 2022.* ***Poster.***
2021	**Flashner, S** and Nakagawa, H. Capturing early neoplastic changes in patient derived 3D organoids. *Head and Neck Cancer Symposium – New Horizons in Diagnosis and Therapy*. ***Platform presentation.***

Awards

2021 - 2023	**National Institute of Health Loan Repayment Program Award.** L30CA264714. Role: PI. National Cancer Institute. National Institutes of Health.
2022 – 2023	**1T32CA265828-01A1**. Genome and Epigenome Integrity In Cancer. Role: Trainee. PI: Zhiguo Zhang, PhD. National Cancer Institute. National Institutes of Health.
2022	**Trainee Associate Member Travel Award.** Herbert Irving Comprehensive Cancer Center, Columbia University

Teaching and Mentorship

2020 – present	**Postdoctoral research mentor in the laboratory of Dr. Hiroshi Nakagawa,** Mentored medical students (3), high school students (1), postdoctoral research scientists (3)
2015 - 2020	**Student mentor in the laboratory of Dr. Jane Azizkhan-Clifford,** Mentored master of science students (2) PhD rotation students (3) medical students (2) and undergraduate students (2). Mentorship included designing research projects, training in research techniques and thesis writing.
2019 – present	**Lecturer,** The DNA Damage Response in Cancer Biology. Advanced Cancer Biology. Drexel University College of Medicine. Graduate student course.