

Sabra Djomehri

sdjomehri@stanford.edu □ (650) 996-5346
265 Campus Drive, Palo Alto, CA 94305

EDUCATION

Ph.D. Molecular and Cellular Pathology (2015 – 2019)

University of Michigan, Ann Arbor, MI

M.S. Biomedical Engineering (2009 – 2012)

San Jose State University, CA

B.S. Applied Physics (2006 – 2009)

University of California, Santa Cruz, CA

CURRENT AFFILIATION (Jan 2020 - present)

Postdoctoral researcher at Stanford University, Institute for Stem Cell Biology and Regenerative Medicine, in the lab of Dr. Michael Clarke.

RESEARCH EXPERIENCE

- Completed a Ph.D. in the lab of Dr. Celina Kleer (Rogel Cancer Center, University of Michigan), co-mentored by Dr. Alexey Nesvizhskii (and Dr. Shuichi Takayama, Georgia Institute of Technology). Specialized in triple-negative breast cancer, cell lines, patient tumors/tissues, mouse models (MMTV-cre;*Ccn6^{fl/fl}*), histology, IHC, and imaging techniques (e.g. confocal, IF), shotgun proteomics LC-MS/MS data using tandem mass tag labeling with novel computational analysis tools. Experienced in genomics analyses including RNA sequencing analyses, DNA sequencing using whole exome seq (WES), and single cell sequencing.
- 3D organoid culture, optimized 384-well hanging drop platform, developed 3D culture assays, including treatment assays, co-cultures and platforms for regenerative medicine and pathology diagnostics.
- Development of bioinformatics pipelines and integrative workflows for multi-omics datasets, experienced in R, python, statistical analyses, and mathematical modeling. Current work involved in single-cell sequencing analyses (scRNA-seq) and genomics (WES), and epigenomics (single-cell), data integration methods, and clinical validation for new therapies.

PAST RESEARCH EXPERIENCE

(2011 – 2015) Research Associate/Core manager at UCSF (lab of Dr. Sunita Ho). Specialized in X-ray micro-computed tomography (micro-CT).

(2012 – 2015) Visiting researcher at SLAC National Accelerator Laboratory and SSRL, specialized in X-ray fluorescence imaging, X-ray absorption near edge structure, quantification of elemental Zn, Ca, and P in disease tissues.

(2009 – 2012) Designed/fabricated/validated biodegradable polymers and developed a mathematical model for drug diffusion (lab of Dr. Maryam Mobed-Miremadi).

SELECT PEER-REVIEWED JOURNAL PUBLICATIONS

1. **S Djomehri**, ME Gonzalez, FV Leprevosta, H. Chang, MJ White, A. Cimino-Mathews, B. Burman, V. Basrura, P. Argani, A. Nesvizhskii, CG Kleer. Quantitative proteomic landscape of metaplastic breast carcinoma pathological subtypes and their relationship to triple-negative tumors. *Nat Commun.* 2020 7;11(1):1723 doi: 10.1038/s41467-020-15283-z.
2. **S Djomehri**, B. Burman, M. Gonzalez, S. Takayama, C. Kleer. A reproducible scaffold-free 3D organoid model to study neoplastic progression in breast cancer. *J Cell Commun Signal.* 2019 13(1):129-143. doi: 10.1007/s12079-018-0498-7.
3. T Anwar, M Rufail, **S Djomehri**, M Gonzalez, L Lazo de la Vega, S Tomlins, L Newman, CG Kleer. Next-generation sequencing identifies recurrent copy number variations in invasive breast carcinomas from Ghana. *Mod Pathol.* 2020;33(8):1537-1545.
4. ER McMullen, ME Gonzalez, SL Skala, M Tran, D Thomas, **S Djomehri**, B Burman, K Kidwell, CG Kleer. CCN6 regulates IGF2BP2 and HMGA2 signaling in metaplastic carcinomas of the breast. *Breast Cancer Res Treat.* 2018;172(3):577-586. doi: 10.1007/s10549-018-4960-2.
5. **S Djomehri**, S. Candell, T Case, A Browning, G Marshall, W Yun, S Lau, S Webb, S Ho. Mineral density volume gradients in normal and diseased human tissues. *PLOS ONE.* 2015, Apr 9;10(4):e0121611.
6. M Mobed-Miremadi*, **S Djomehri***, M Keralapura, M McNeil. Fickian-Based Empirical Approach for Diffusivity Determination in Hollow Alginate-Based Microfibers Using 2-D Fluorescence Microscopy and Comparison with Theoretical Predictions. *Materials* 2014, 7(12), 7670-7688. (***First authorship shared**)
7. **S Djomehri**, H Zeid, A Yavari, M Mobed-Miremadi, K Youssefi, S Liao-Chan. Simulation and verification of macroscopic isotropy of hollow alginate-based microfibers. *Artif Cells Nanomed Biotechnol.* 2015 Dec;43(6):390-7.
8. K Grandfield, R Herber, **S Djomehri**, C Tam, J Lee, E Brown, W Woolwine III, D Curtis, M Ryder, J Schuck, S Webb, W Landis, S Ho. Strain-guided mineralization in the bone-PDL-cementum complex of a rat periodontium. *Bone Reports.* 2015 Dec;3:20-31.
9. J Lin, H Ozcoban, J Greene, A Jang, **S Djomehri**, K Fahey, L Hunter, G Schneider, S Ho. Biomechanics of a bone-periodontal ligament-tooth fibrous joint. *J Biomech.* 2013;46(3):443-449.
10. **S Djomehri**, M Mobed-Miremadi, M Keralapura. Modeling Diffusivity Through Alginate-Based Microfibers: A Comparison of Numerical and Analytical Models Based on Empirical Spectrophotometric Data. *J Memb Separ Tech.* 2013; 2(1):74-87.
11. N Leong, J Hurng, **S Djomehri**, S Gansky, M Ryder, S Ho. Age-Related Adaptation of Bone-PDL-Tooth Complex: Rattus-Norvegicus as a model system. *PLOS ONE.* 2012;7(4):e35980.
12. **S Djomehri**, M Ackermann. Definition of a Twelve-Point Polygonal SAA Boundary for the GLAST Mission. *DOE J Undergrad Res* (2007).

UNDERGRADUATE THESIS

UCSC Department of Physics (2009). Extracellular Recording of Retinal Neurons Using Novel Multi-electrode Microarray System.

MASTER'S THESIS

S. Djomehri. Diffusive and Mechanical Properties of Biodegradable Alginate Stents. *Master's Theses* 2012. Paper 4230. (SJSU Dept. of Biomedical, Chemical and Materials Engineering).

SELECTED PEER-REVIEWED ABSTRACTS & PRESENTATIONS

1. **S. Djomehri**, C. Kleer, and S. Takayama, "A Scaffold-Free 3D Organoid Model to Study Neoplastic Progression in Breast Cancer," MMB 2018, 9th International Conference on Microtechnologies in Medicine and Biology in Monterey, CA. (oral & poster presentation).
2. **S. Djomehri**, S. Takayama, and C. Kleer, "A Scaffold-Free 3D Organoid Model to Study Neoplastic Progression in Breast Cancer," AACR Annual Meeting 2018, American Association for Cancer Research, in Chicago, IL. (Late-breaking research: poster presentation).
3. **S. Djomehri**, S. Takayama, and C. Kleer, "A Scaffold-Free 3D Organoid Model to Study Neoplastic Progression in Breast Cancer," 16th Annual Pathology Research Symposium 2017, Dept of Pathology, University of Michigan, Ann Arbor, MI.
4. **S. Djomehri**, K. Grandfield, R. Herber, M. Nweeia, S. Webb, S. Ho, "Elemental Zinc as a Potential Marker for Biomineralization," *2013 Research & Clinical Excellence Day* in University of California, San Francisco. (poster presentation).
5. **S. Djomehri**, S. Candell, S. Lau, G. Marshall, S. Marshall, S. Webb, S. Ho, "Mineral Density Gradients in Healthy and Diseased Human Tissues," *2012 Materials Research Society (MRS) Spring Annual Meeting* in San Francisco, CA. (poster presentation).

ACTIVITIES & AWARDS

- Advanced Proteome Informatics of Cancer Training Program (T32 CA140044), Dept of Computational Medicine & Bioinformatics, University of Michigan (2016-2018)
- NIH/NIGMS grant and additional fellowship for "Cancer Systems Biology" short program, Center for Complex Biological Systems (CCBS) at University of California Irvine, May 2018.

RESEARCH INTERESTS

Pathology, cancer biology, bioinformatics, computational medicine, entrepreneurship, consulting

REFERENCES

Michael F Clarke, MD Stanford University Karel H. and Avice N. Beekhuis Professor, Cancer Biology and Medicine- Oncology Dept: Assoc Director, Stanford Institute for Stem Cell & Regenerative Medicine Email: mfclarke@stanford.edu Phone: (650) 736-9639	Aaron Newman, PhD Stanford University Assistant Professor, Department of Biomedical Data Science Stanford Institute for Stem Cell Biology and Regenerative Medicine Stanford Cancer Institute Email: amnewman@stanford.edu Phone: (650)724-7270	Celina G. Kleer, MD University of Michigan Harold Oberman Collegiate Professor of Pathology Director, Breast Pathology Program Email: kleer@med.umich.edu Phone: (734)936-3024	Alexey Nesvizhskii, PhD University of Michigan Professor, Dept of Pathology, Dept of Computational Medicine & Bioinformatics Director, Proteomics Resource Facility Email: nesvi@umich.edu Phone: (734)764-3515
---	---	--	---