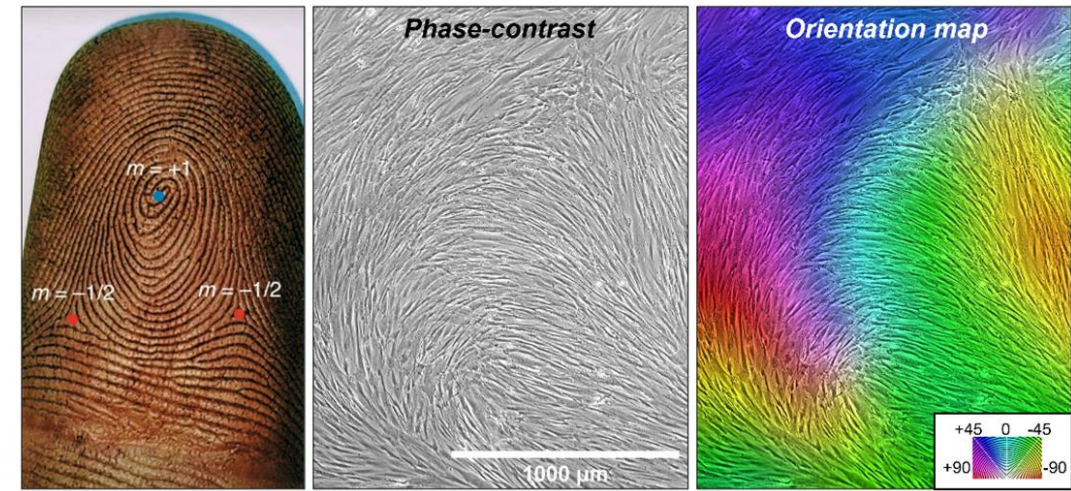


Dr. Ekta Makhija

**Research Area:** Mechanobiology of cells and tissues

**Research Interests:** Pattern formation by self-assembly of cells, Forces in biological systems, Cell differentiation and tissue development, Biophysical cellular markers of disease and health



**A. Fingerprint pattern**

**B. Mesenchymal stem cells**

(Fardin and Ladoux 2021 Nature Physics) (Makhija et al. 2023 BioRxiv)

### Representative Publications:

1. Topological defects govern mesenchymal condensations, offering a morphology-based tool for predicting chondrogenic differentiation  
*E. Makhija, Y. Zhang, J. Wang, H. Leong, R. Othman, E. X. Ng, E. H. Lee, L. T. Kellogg, Y. H. Lee, H. Yu, Z. Poon, and K. J. Van Vliet*  
Under Review 2023 (preprint on BioRxiv)
2. Mechanical Strain Alters Cellular and Nuclear Dynamics at Early Stages of Oligodendrocyte Differentiation  
*E. Makhija, A. Jagielska, L. Zhu, A. C. Bost, W. Ong, S. Y. Chew, G. V. Shivashankar, and K. J. Van Vliet*  
Frontiers in Cellular Neuroscience 2018
3. Nuclear Plasticity and Telomere Dynamics are Regulated by Extracellular Matrix Constraints  
*E. Makhija, D. S. Jokhun, and G. V. Shivashankar*  
Proceedings of National Academy of Sciences 2016

**Lab-webpage:**