## Mechanical Engineering Seminar

**Monday, January 8 2023 at 14:30**, D. Dan and Betty Kahn Building, Room 217

# Mechanisms of stiffness induced contact guidance

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**Hosted by: Prof. Leeya Engel**

Previously, it has been shown how cells response to gradients of extracellular adhesion molecules, topographical features or stiffness of the substrate by orientating their movement towards them. Moreover, anisotropic cues of these parameters (except stiffness) had been shown to align cellular migration and directionality to them.
In the present work we show how, with a new methodology relying on photolithography and vapour deposition, both single and groups of epithelial cells are able to align and migrate on the axis of stiffness intermittent linear features at the micron scale. We further studied and defined a threshold spacing needed in order to allow the cells sensing the differences in stiffness directionality, without a minimal spacing that will grant a dissipation of the stiffness cues on the substrate there is not directionality. Further work is needed to fully define the mechanisms involved which seems to be dependent on force transmission and fitting the clutch model.

Studied biomedical science in Barcelona university, where worked as undergrad on osteogenesis. Later did a Master on nanotechnology and worked on durotaxis at Xavier Trepat laboratory. For the PhD, focused on compressive stresses on 3D multicellular models and membrane biology under the direction of Christophe Lamaze at institute Curie. At last moved to Israel to work on anisotropy of stiffness at Schvartzman lab.

Seminars Coordinator: Assoc. Prof. Gal Shmuel.