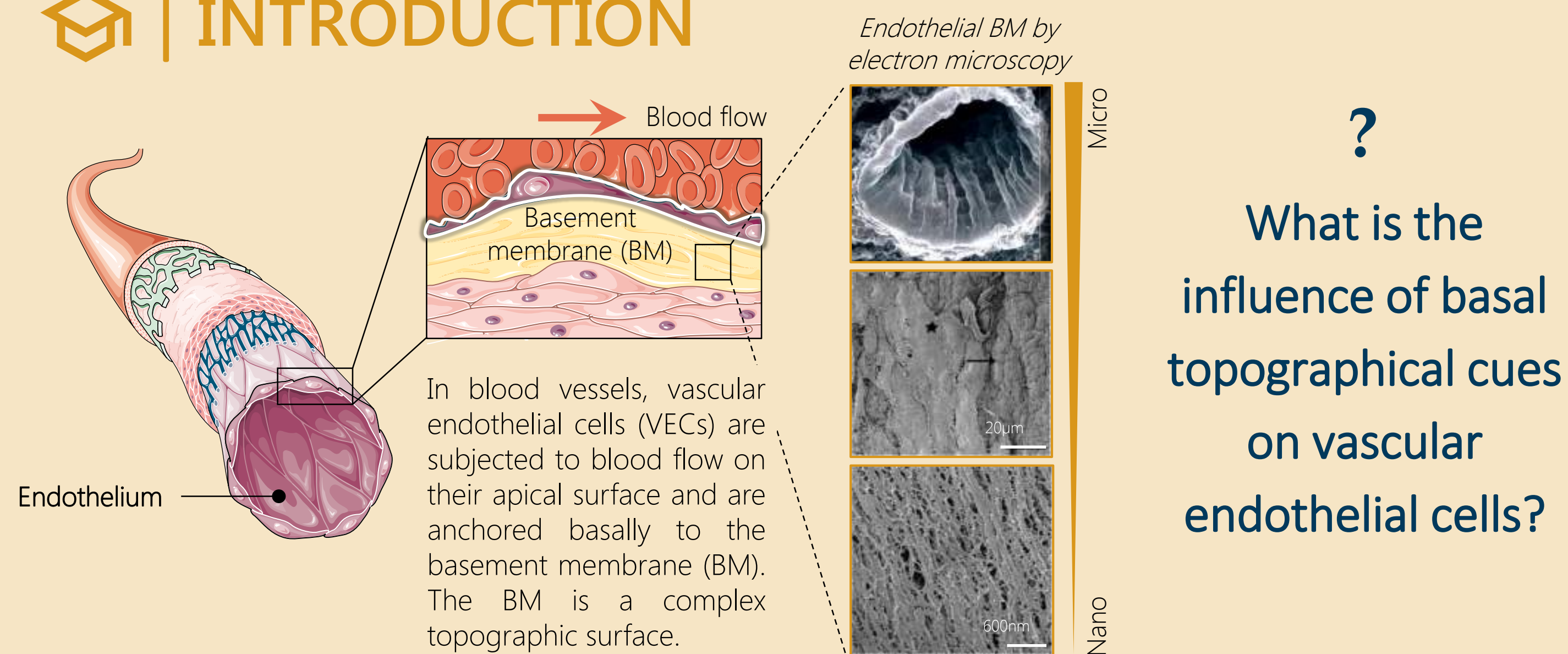


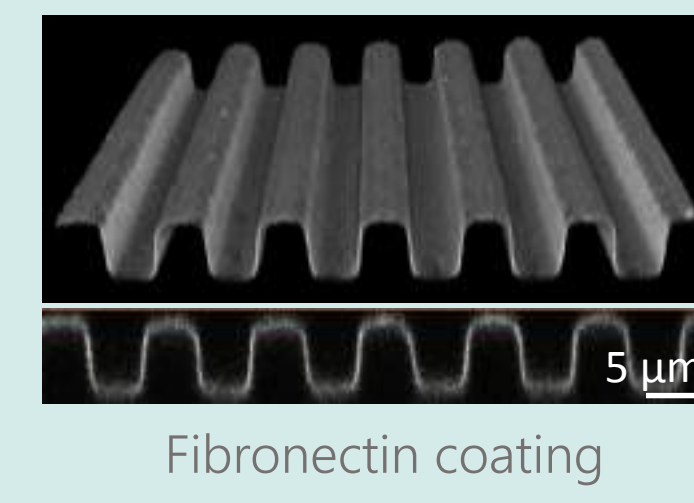
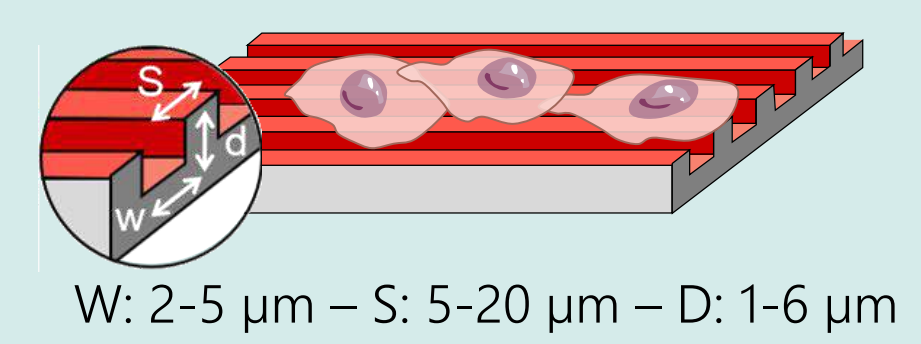
INTRODUCTION



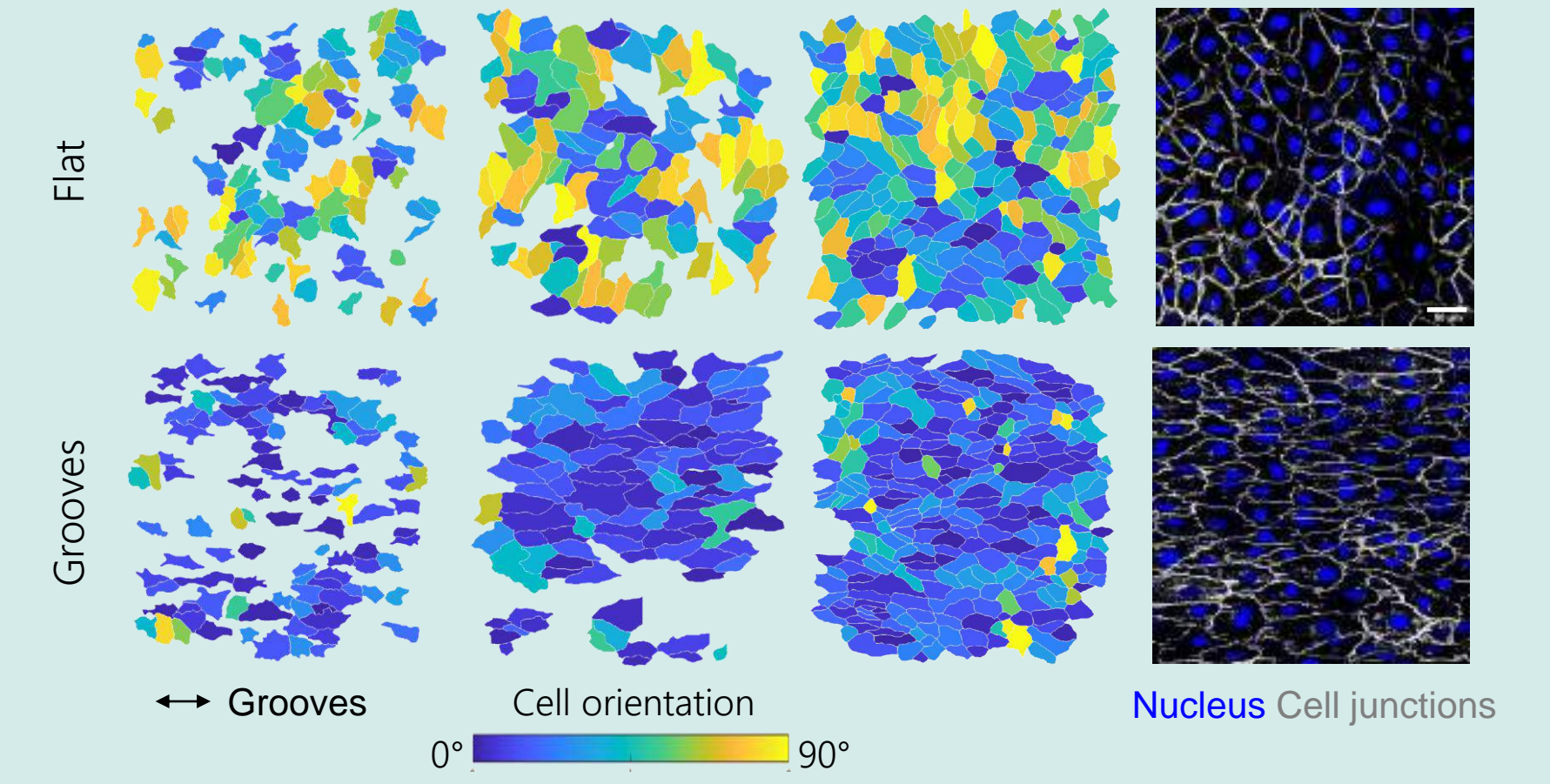
METHODS

Endothelial cell (ECs) culture on microgrooved substrates

PDMS microgrooved substrates

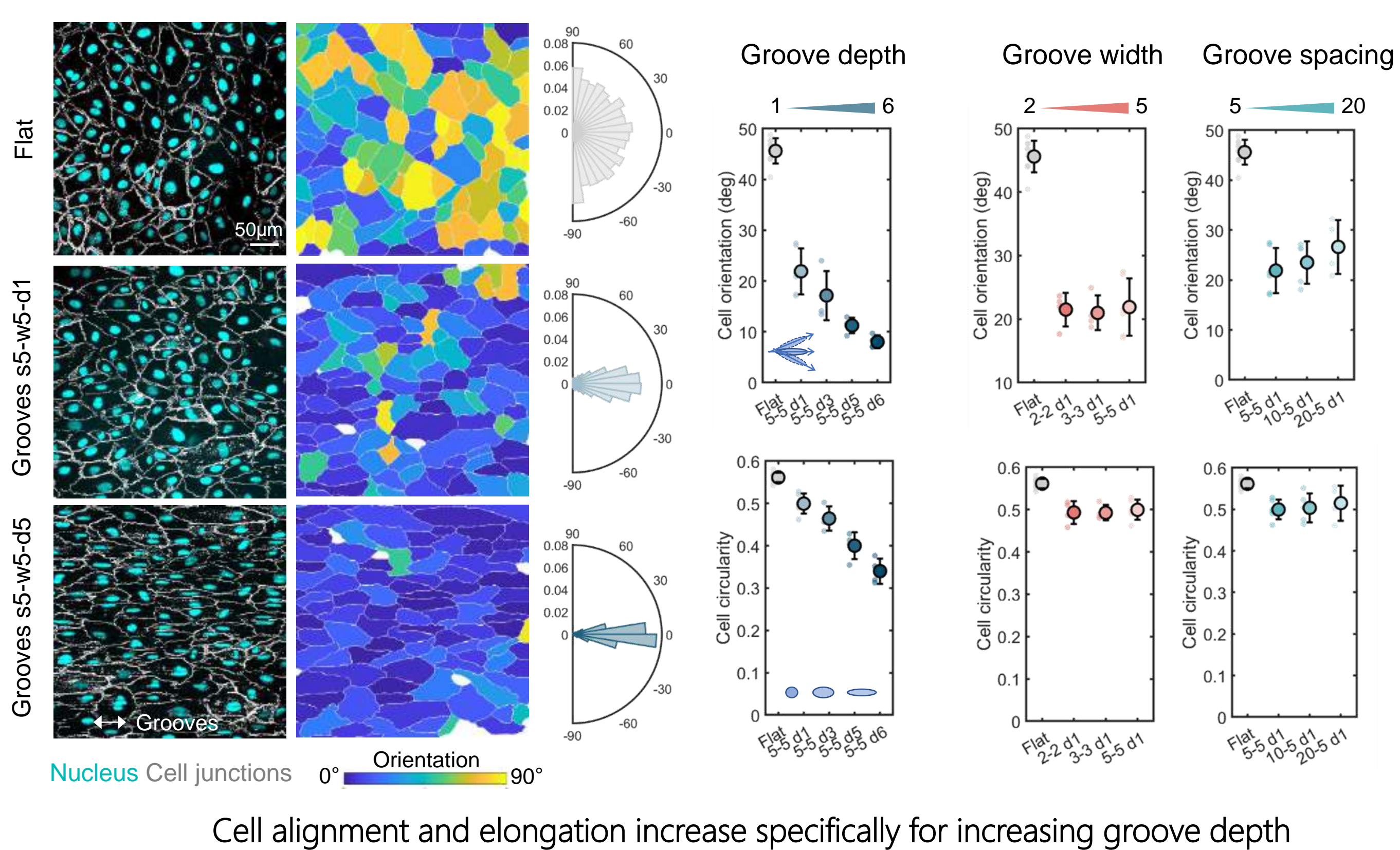


Culture and alignment of HUVECs in the groove direction

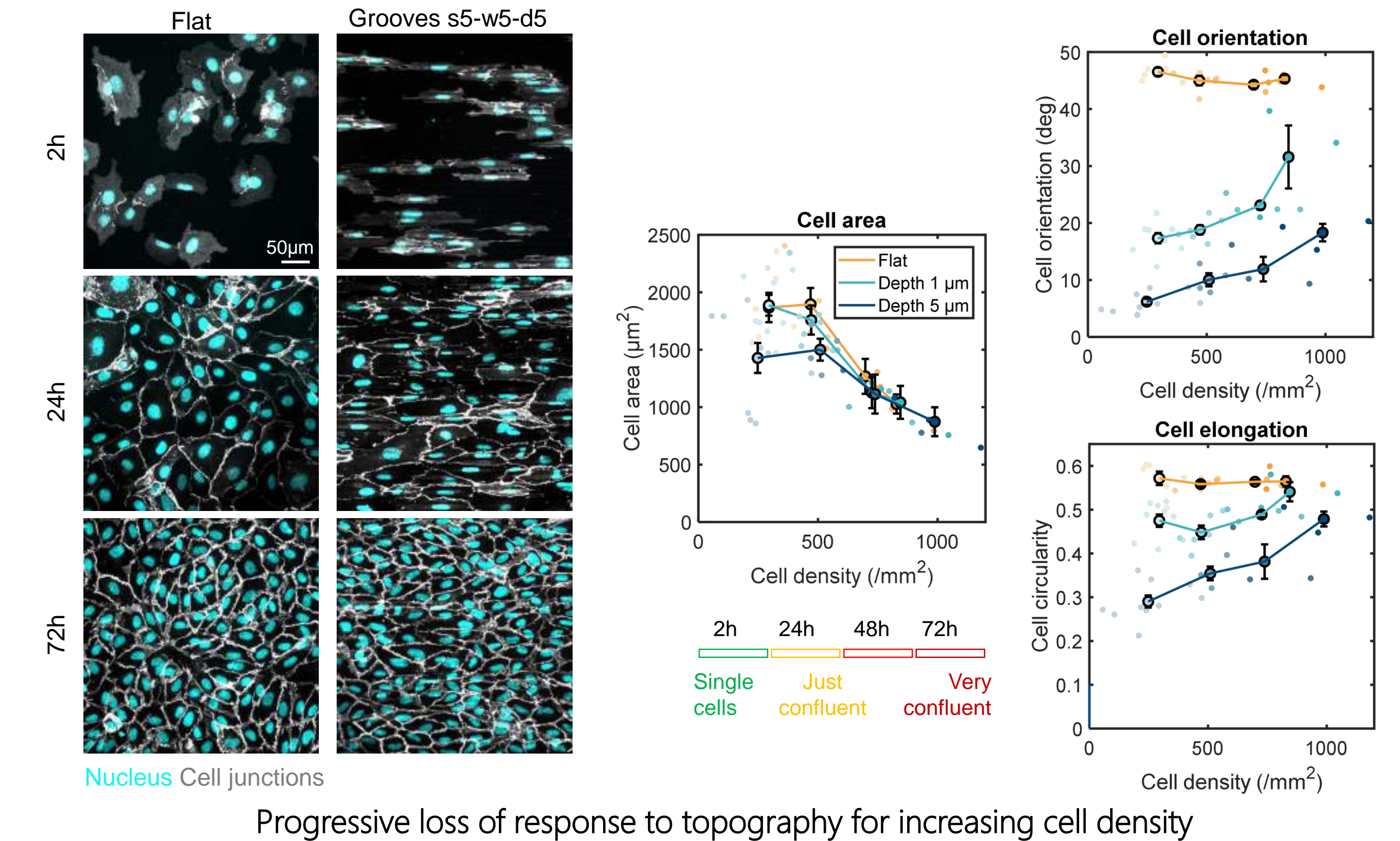


RESULTS

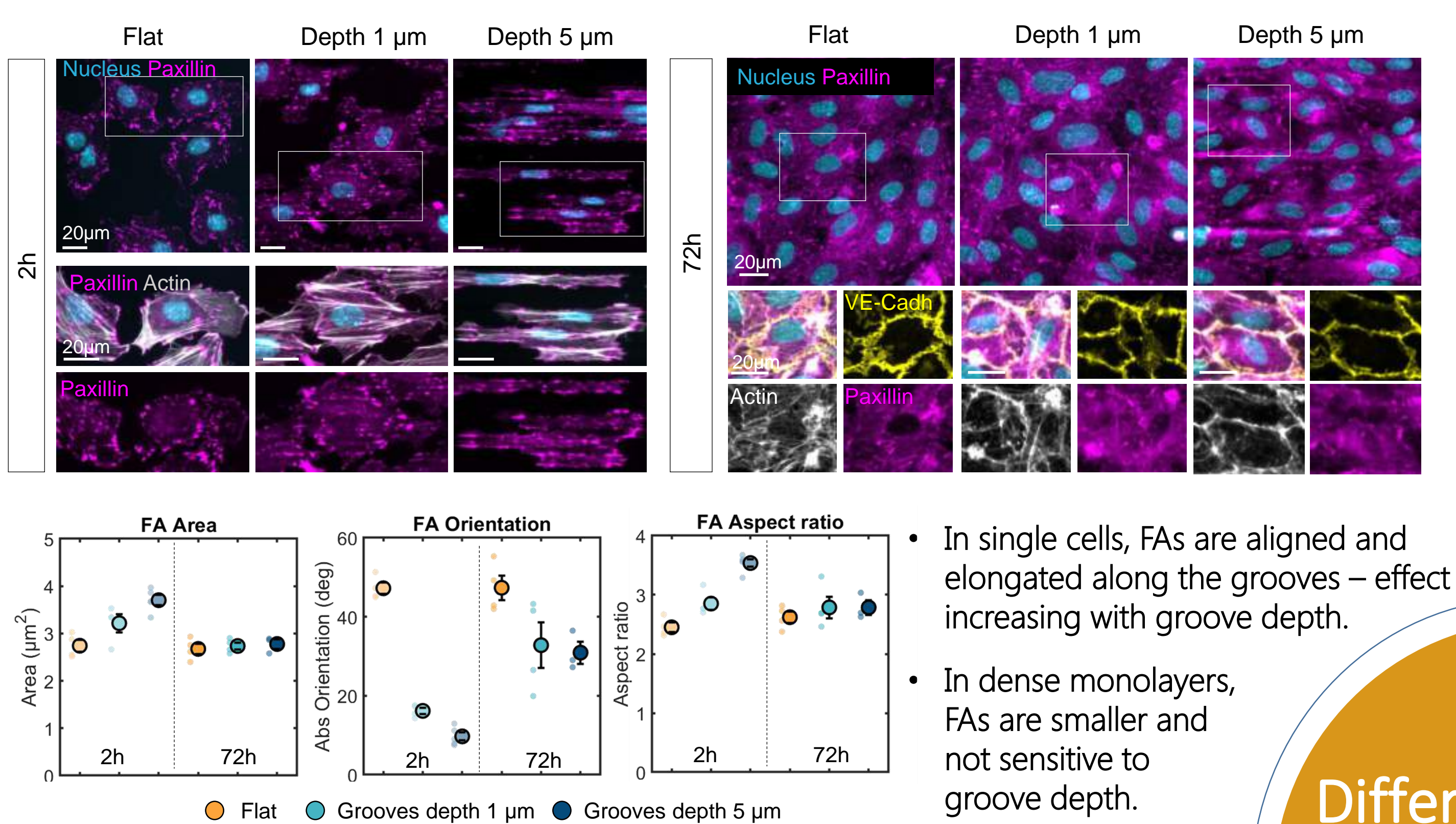
Depth-dependent response to topography



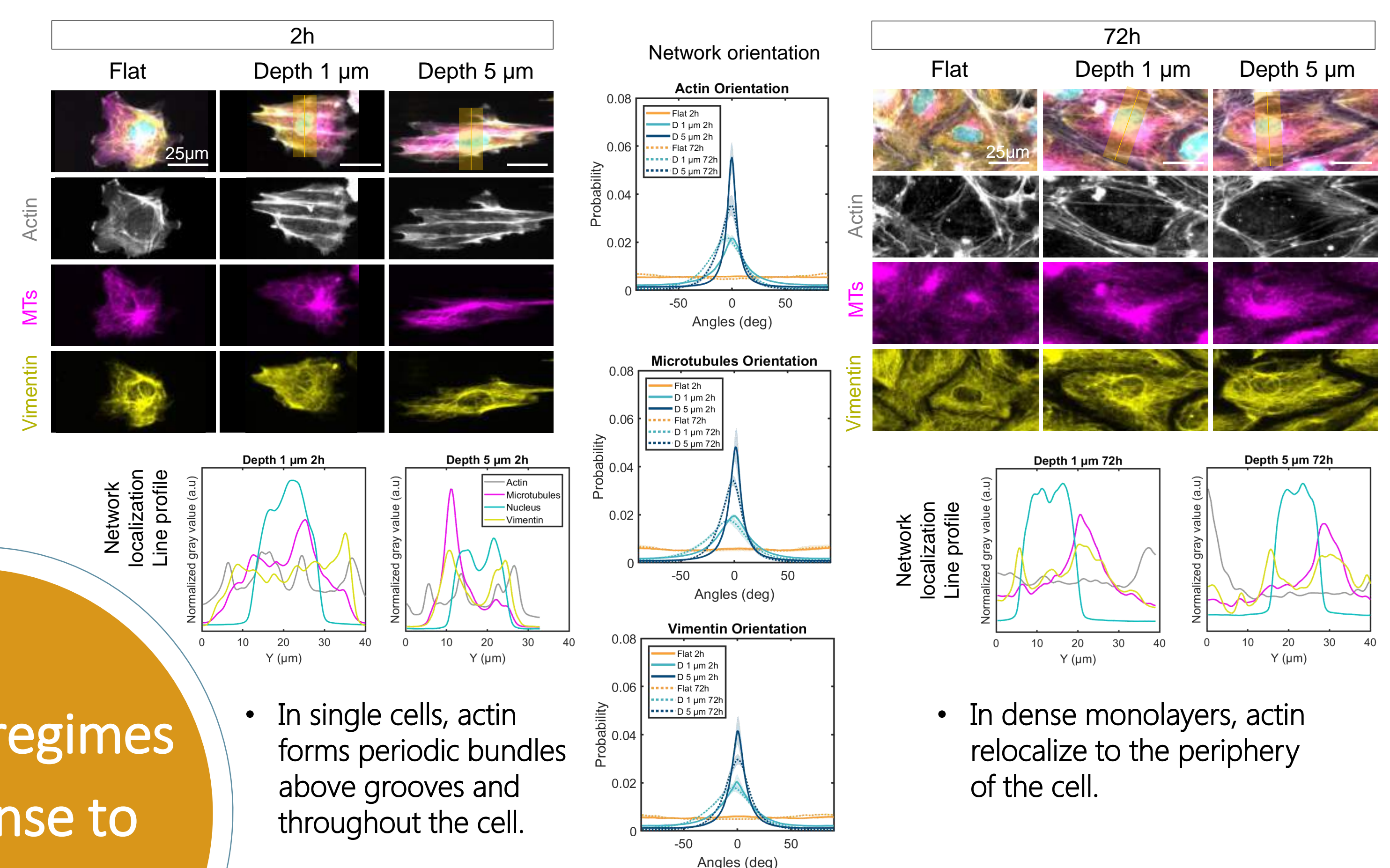
Density-dependent response to topography



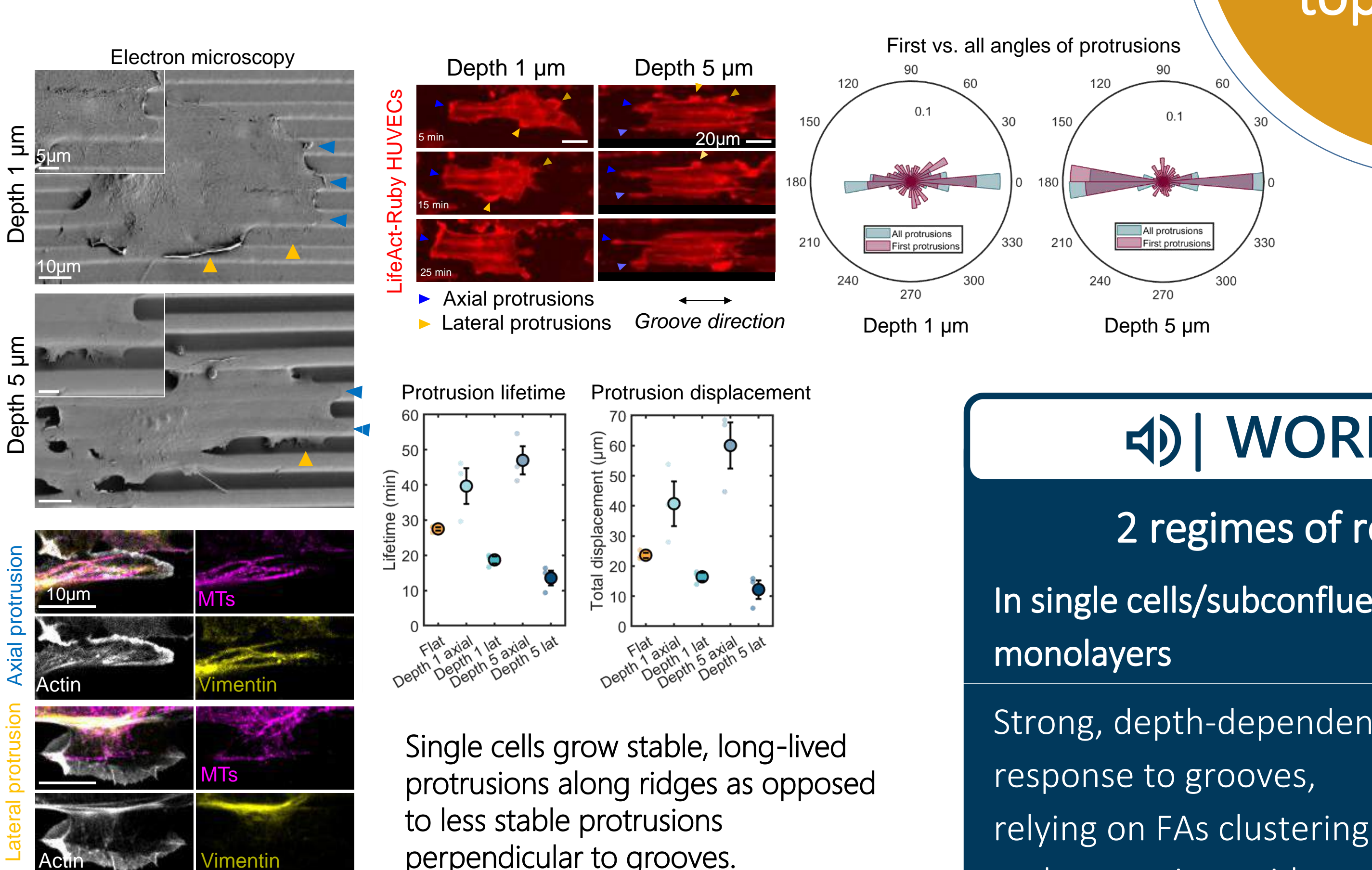
Focal adhesion organization



Cytoskeleton organization



Protrusions organization & dynamics



WORKING MODEL

2 regimes of response to topography

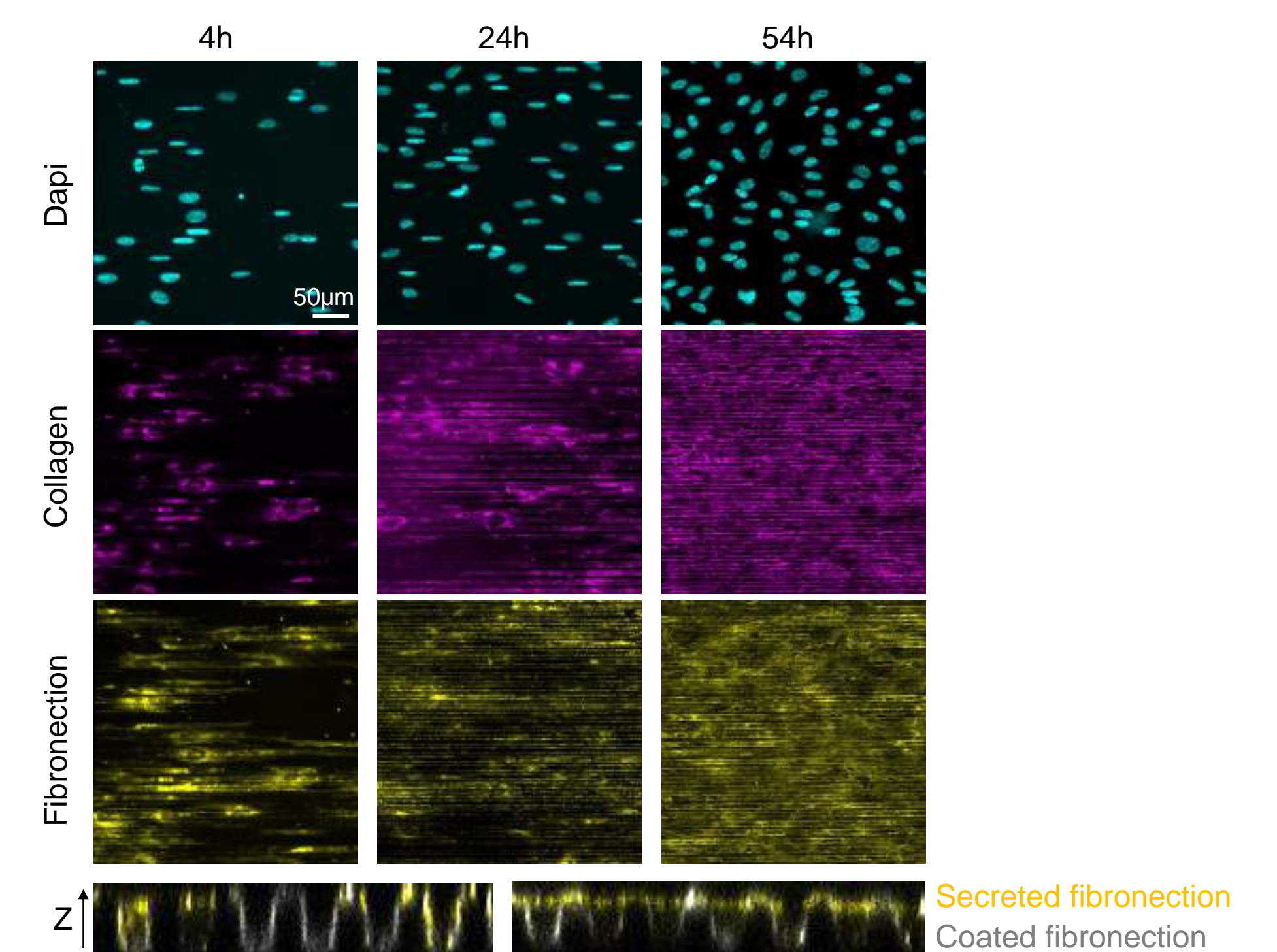
In single cells/subconfluent monolayers

Strong, depth-dependent response to grooves, relying on FAs clustering and protrusion guidance

In highly confluent monolayers

Weak interaction with the grooves because of junctions and secreted BM, loss of response to topography

Basement membrane secretion



With increasing time and cell density, the amount of secreted BM increases, partially filling the grooves, which can explain the loss of response to topography.