Figure S1

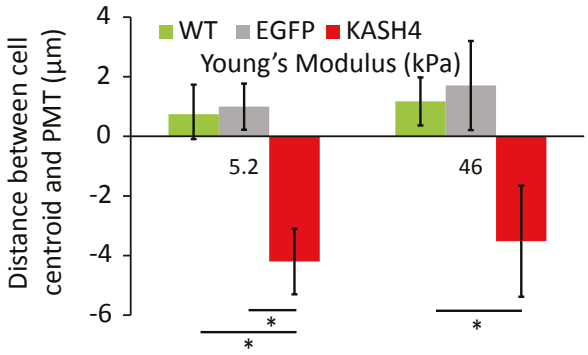


Figure S1. Average distance between the cell centroid and the PMT for wildtype (WT), EGFP and KASH4 cells. In control cells, the PMT lies slightly behind the cell centroid, while it lies in front of the cell centroid in KASH4 cells. The trend is independent of substrate rigidity. Error bars represent SEM. N $\geq$ 20 for each condition. *, $P < 0.05$.

Figure S2

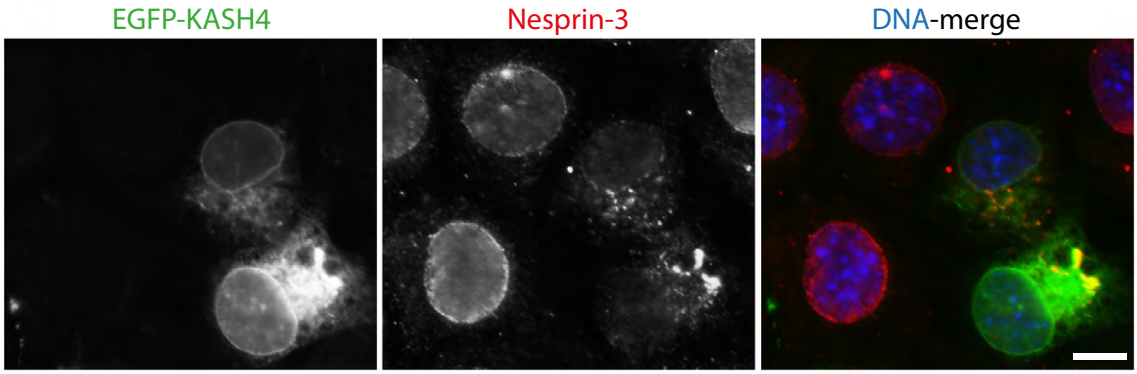


Figure S2. EGFP-KASH4 displaces endogenous nesprin 3 from the nuclear envelope. NIH3T3 cells transiently transfected with EGFP-KASH4 (green) exhibit a loss of endogenous nesprin 3 (red) from the nuclear envelope. DNA is labeled with Hoechst (blue) in the murged image. Scale bar is 10 µm.

Figure S3

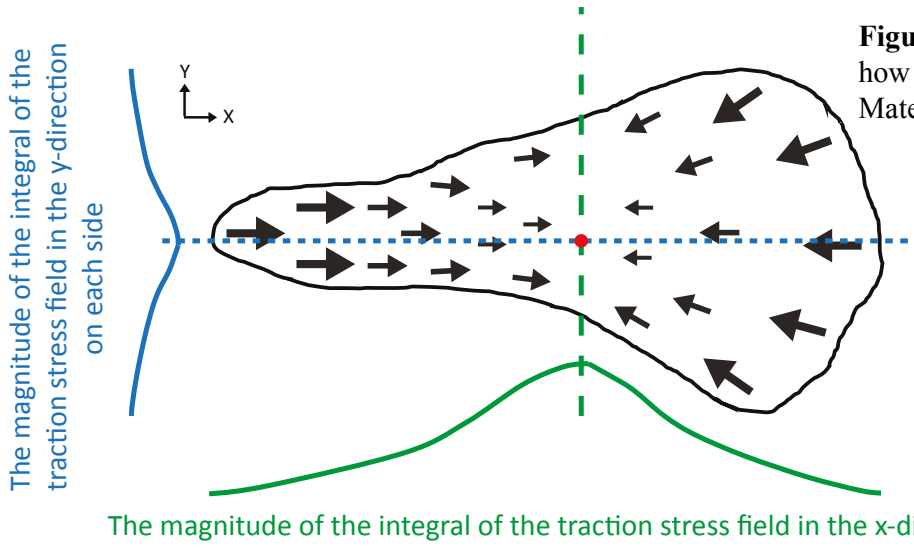
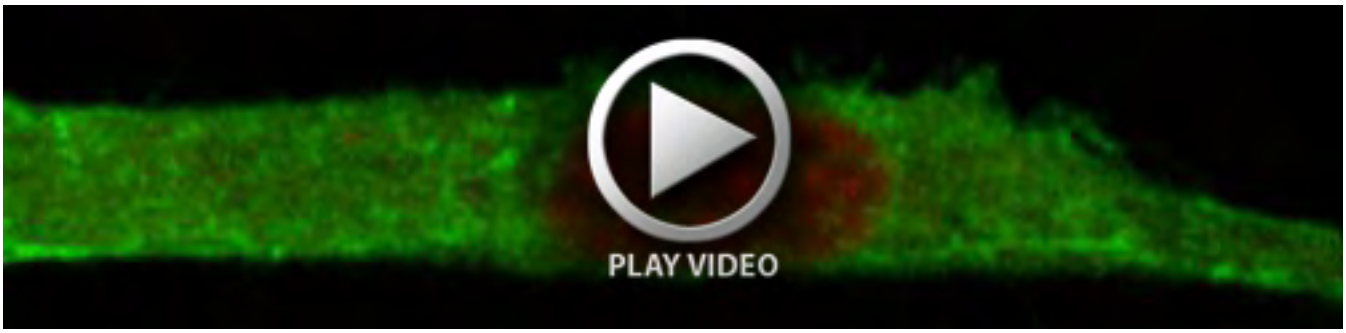


Figure S3. Schematic illustrating how the PMT is calculated (see Materials and Methods).

Cell boundaries
Traction stress vectors
The line of contraction (the line where the magnitude of the integral of the traction stress field in the y (lateral) direction on each side of the line is maximized)
The line where the magnitude of the integral of the traction stress field in the x (principal) direction on each side of the line is maximized
The point of maximum tension (PMT)

MovieS1.Z-stackofthemigratingcellinFigure2C,top(displayingalateralstressfiberthatdoesnotappeartotouchthenucleus),beforesever-ingthelateralstressfiber,showingnoothervisibleactinbundlesinotherconfocalplanes.Framesshowthenucleus(red)andactin(green)at0.3µmstepsize.



MovieS2.Z-stackofthemigratingcellinFigure2C,bottom(displayingalateralstressfiberthatappearstotouchthenucleus),beforeseveringth-elateralstressfiber,showingnoothervisibleactinbundlesinotherconfocalplanes.Framesshowthenucleus(red)andactin(green)at0.3µm-stepsize.