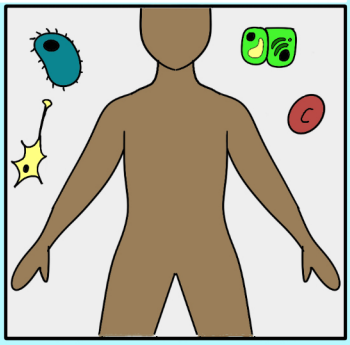
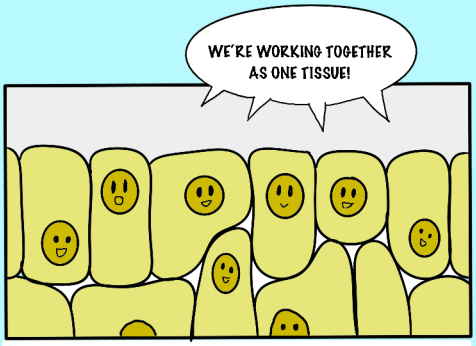
HOW CELLS AVOID CRASHING INTO EACH OTHER: CONTACT INHIBITION OF LOCOMOTION

a comic inspired by the talk by Alba Diz-Muñoz

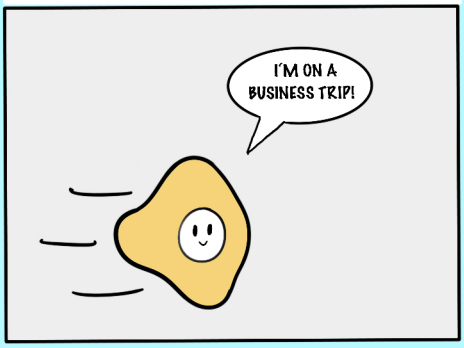
LIKE ALL LIFE ON EARTH, WE ARE MADE OF CELLS.



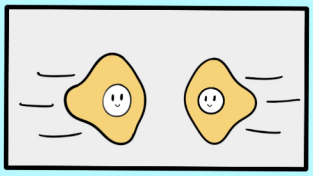


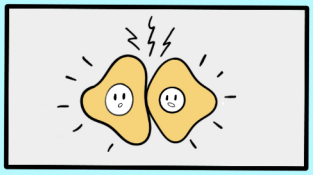
MULTICELLULAR LIFE FORMS LIKE US CONSIST OF MANY DIFFERENT TYPES OF CELLS. SOME OF THEM STAY IN PLACE, LIKE EPITHELIAL CELLS...

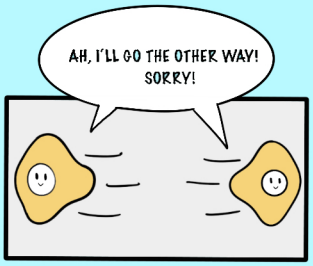
...WHILE OTHERS, LIKE IMMUNE CELLS, NEED TO MOVE AROUND OUR BODY TO DO THEIR JOB.



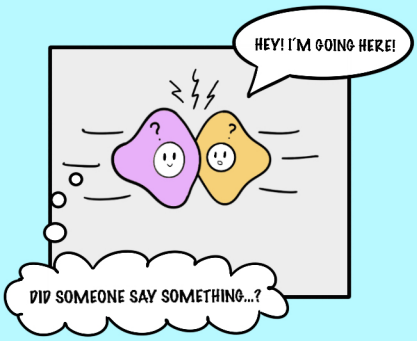
WHERE THERE IS A LOT OF "TRAFFIC", ACCIDENTS CAN HAPPEN...

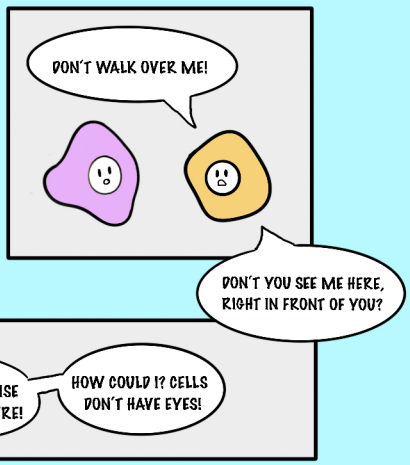


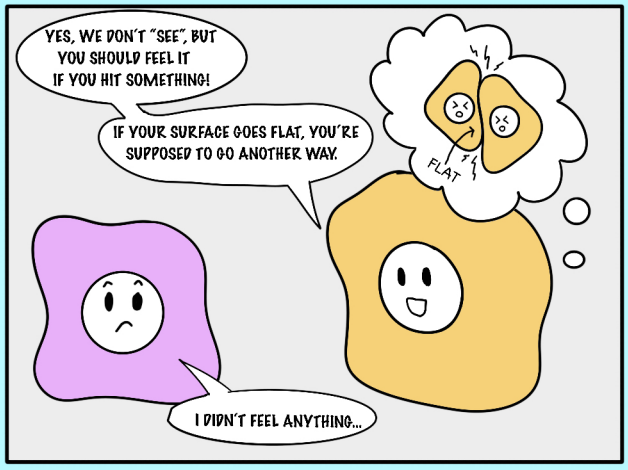


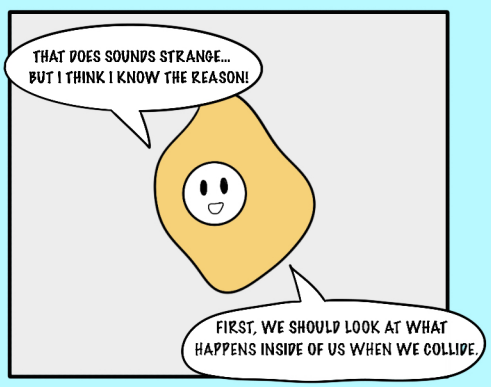


...BUT WHAT IF SOMEONE DOES NOT MOVE OUT OF THE WAY?







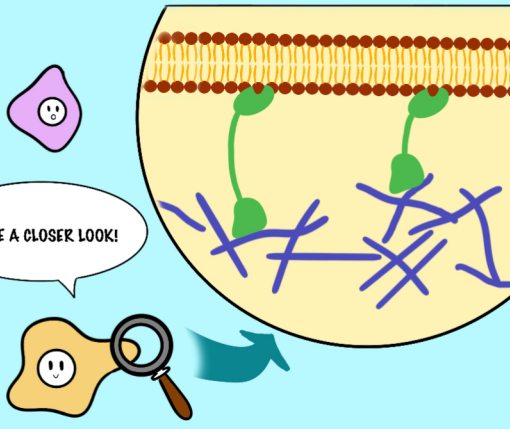


THE SURFACE OF AN ANIMAL CELL IS A COMPOSITE: IT CONSISTS OF THREE DIFFERENT COMPONENTS THAT COME TOGETHER TO ACHIEVE A CERTAIN FUNCTION.

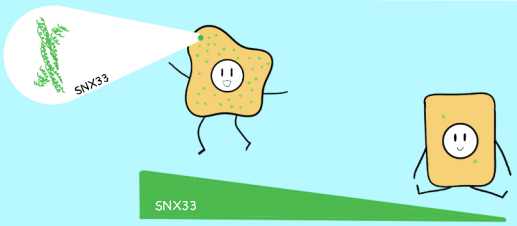
...THE PLASMA MEMBRANE IS THE "BORDER" OF THE CELL...

...THE ACTOMYOSIN CORTEX PLAYS A ROLE IN DETERMINING CELL SHAPE AND MEMBRANE BEHAVIOUR...

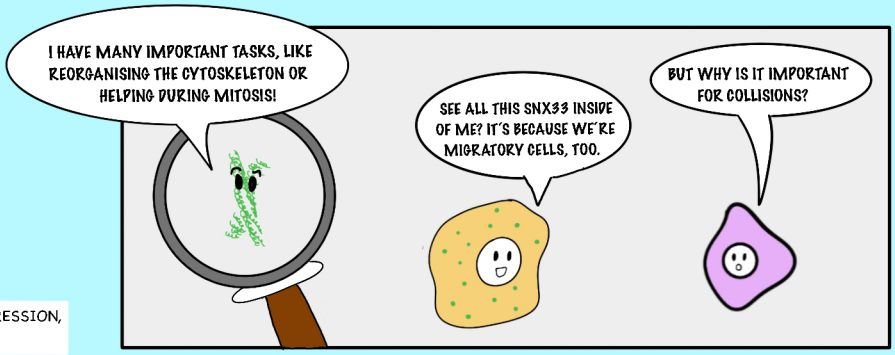
...AND THE MEMBRANE-TO-CORTEX ATTACHMENT (MCA) LINKER PROTEINS CONNECT THEM!

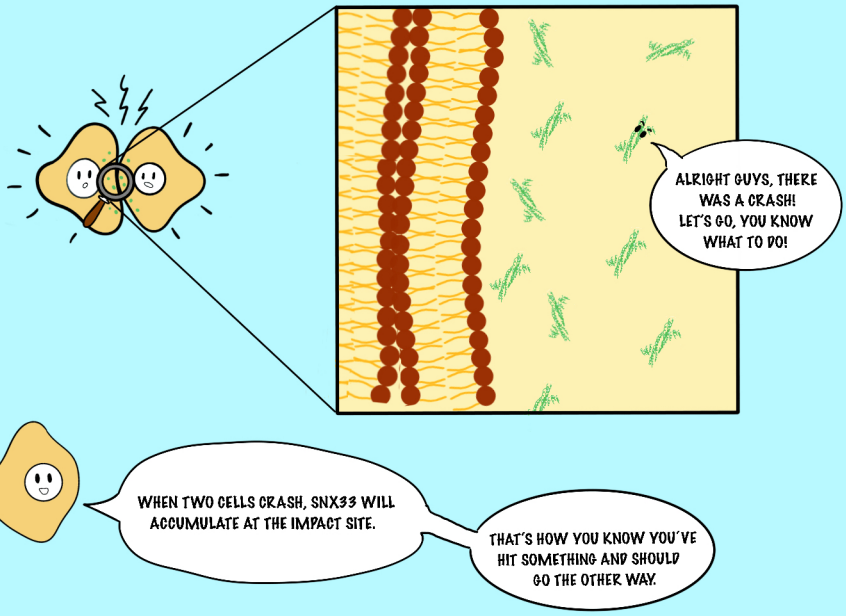


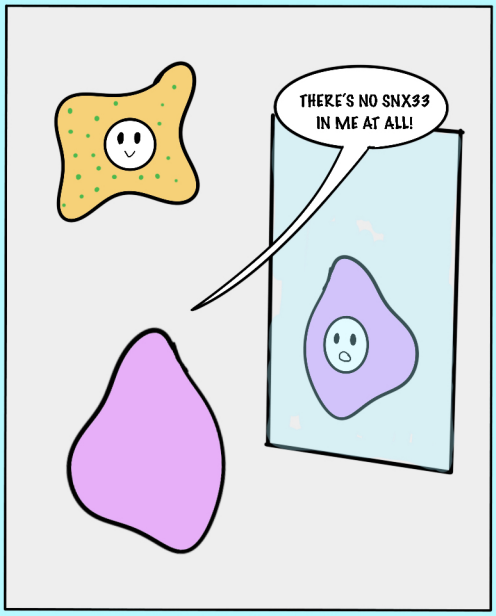
IN MIGRATORY CELLS, A SPECIFIC LINKER PROTEIN CALLED SNX33 (SORTING NEXIN 33) IS UP-REGULATED.

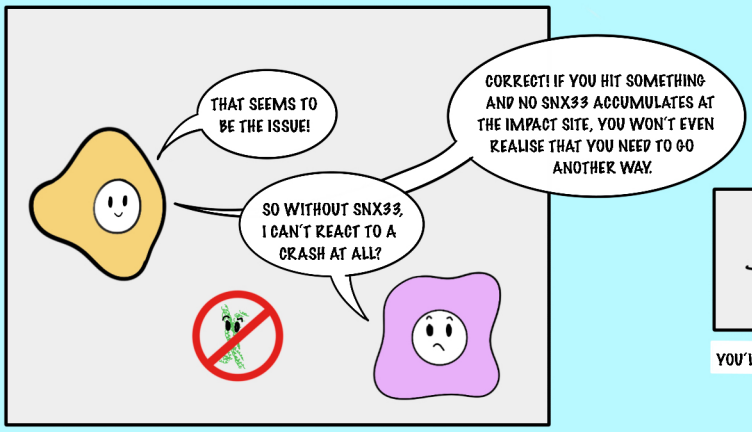


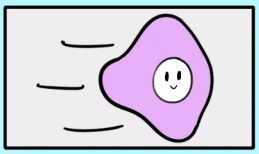
THAT MEANS MIGRATORY CELLS SHOW A LOT OF SNX33 EXPRESSION, WHILE OTHER CELLS THAT STAY IN ONE PLACE SHOW LESS.





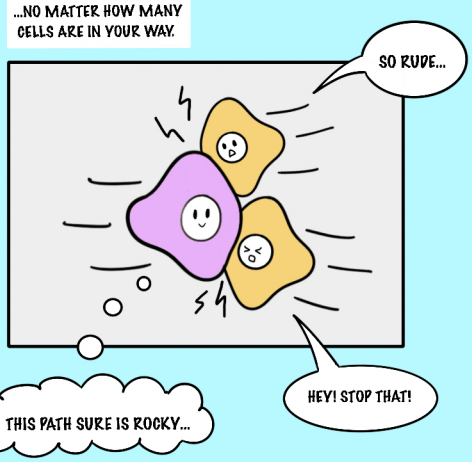






YOU'LL JUST KEEP GOING...

...NO MATTER HOW MANY CELLS ARE IN YOUR WAY.



Selena Henn

SPARK@COS Lecture by Alba Diz-Muñoz (MAY THE FORCE BE WITH YOU: MECHANICS IN BIOLOGY)