

## FACTORS AFFECTING THE SEPARATION IN THE GC

- COLUMN MATERIAL - TAILORED TO COMPOUNDS BEING SEPARATED**
- COLUMN LENGTH - THE LONGER THE COLUMN, THE LONGER THE COMPOUNDS TAKE TO GO THROUGH - A POTENTIALLY BETTER THE SEPARATION**
- COLUMN TEMP - HIGHER TEMP, SHORTER RETENTION TIME – LOWER TEMP, LONGER RETENTION TIME**
- HELIUM FLOW RATE - HIGHER FLOW RATE, SHORTER RETENTION TIME, LOWER FLOW RATE, LONGER RETENTION TIME**

## WHAT'S GOING IN INSIDE THE COLUMN?

**AT THE INJECTION END, THE LIQUID MIXTURE IS INTRODUCED INTO THE HEATER WHICH VAPORIZES THE MIXTURE. THE HELIUM GAS PUSHES THE “PLUG” OF VAPOR INTO THE COLUMN. AS THE TWO (OR MORE) COMPONENTS PASS THROUGH THE COLUMN, THEY BOTH DISSOLVE IN THE COLUMN MATERIAL, THEN REVAPORIZE AND PASS FURTHER ALONG, DISSOLVE, VAPORIZE, AND SO ON. THE LOWER BOILING COMPOUND VAPORIZES MORE EASILY SO SPENDS LESS TIME DISSOLVED AND THEREFORE MOVES FASTER THROUGH THE COLUMN. (LIKE A FRACTIONAL DISTILLATION)**