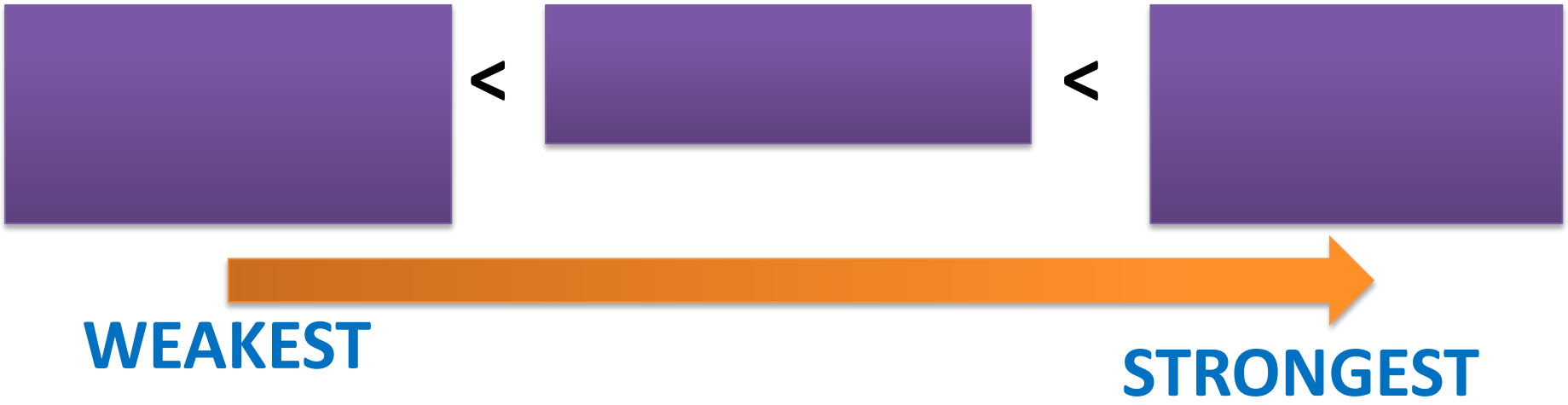
DAY THREE

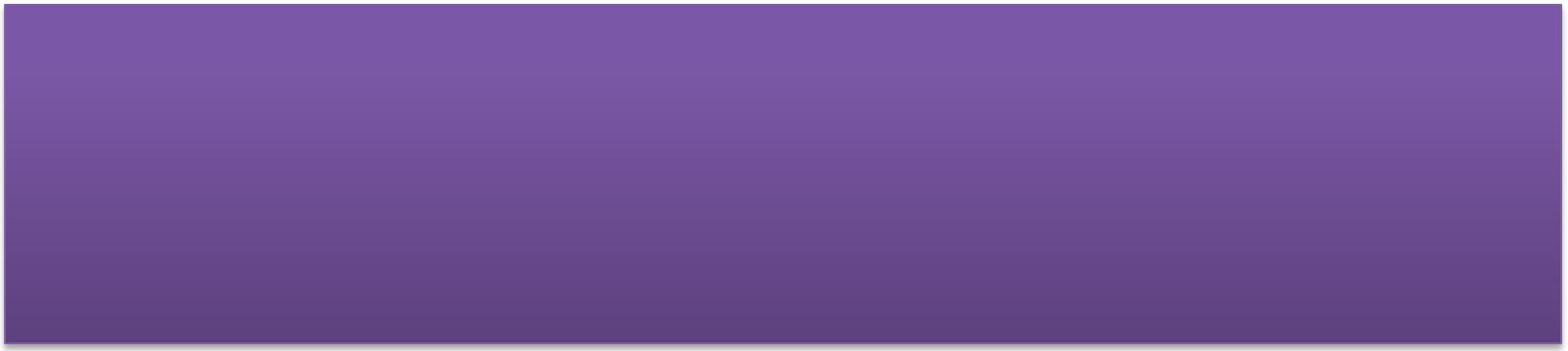
Jumpstart 3-A

1) Which should have a higher boiling point – O_2 or NH_3
2) Why?

Types of IMFs

INTER molecular forces (forces between neighboring molecules)

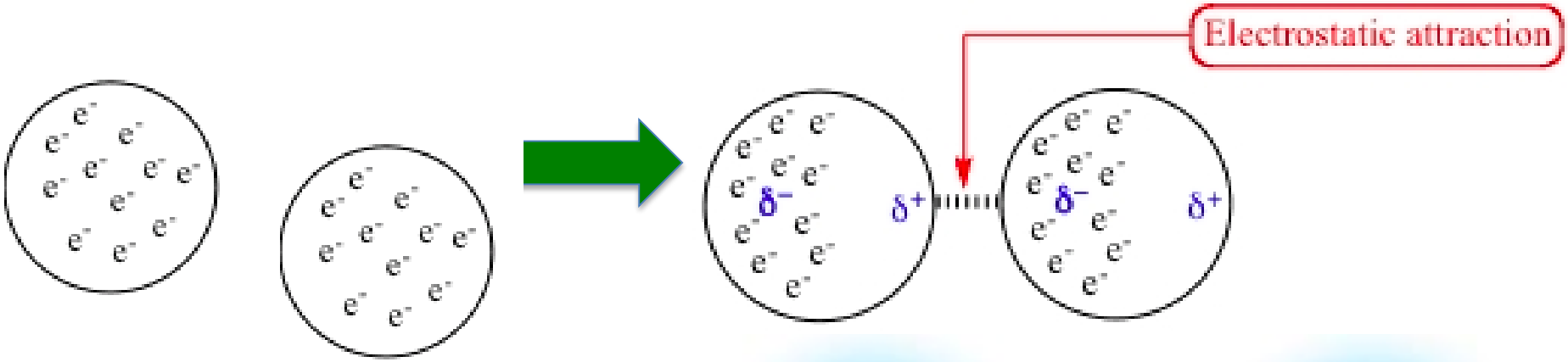




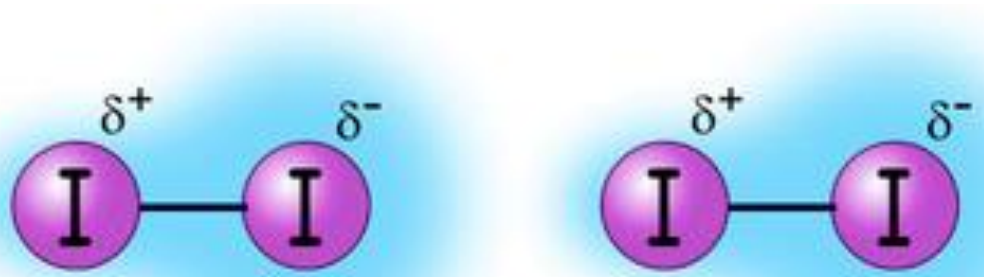
London Dispersion Forces

VERY WEAK and TEMPORARY!!!!

Caused by **<u>temporary</u> unequal** electron distribution that makes weak and <u>temporary dipoles.</u>



Example I_2



London Dispersion Forces Continued…

EVERYTHING HAS LONDON DISPERSION FORCES BECAUSE EVERYTHING HAS ELECTRONS!

Bigger molecules will have more LDFs – more places to get temporary unequal electrons

C_8H_{18} will have more LDFs than C_3H_8

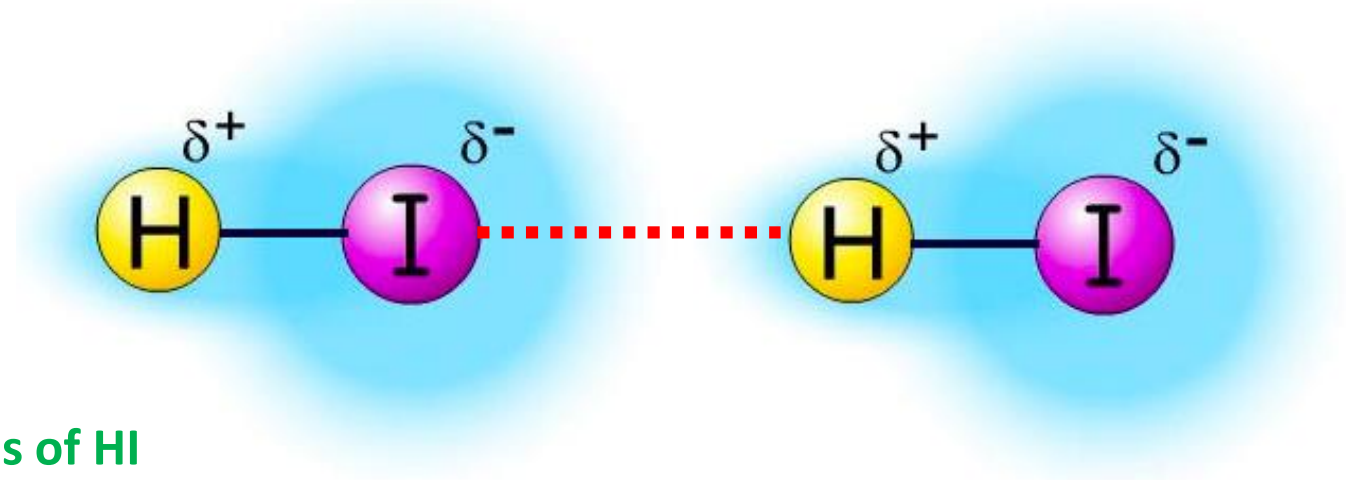
Dipole - Dipole

ONLY OCCURS IN POLAR MOLECULES

Partially negative portion of one polar molecule

attracted to

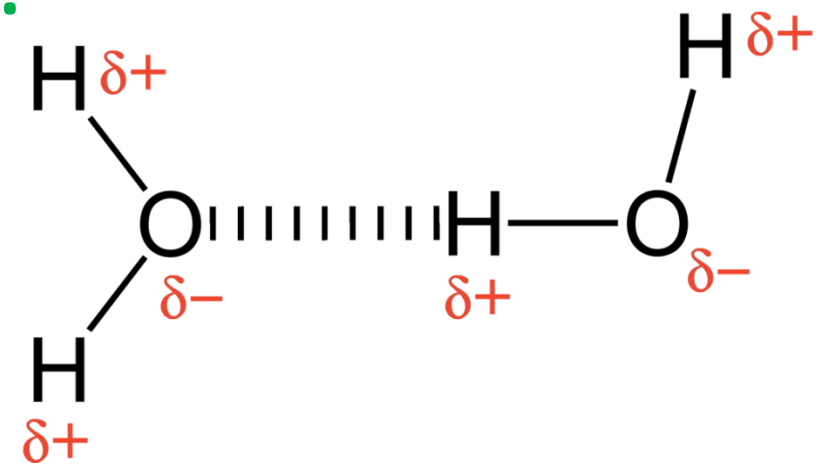
Partially positive portion of the second polar molecule



Example:
2 molecules of HI

Hydrogen Bonding

A TYPE OF DIPOLE-DIPOLE!
(Strongest Kind of IMF!)



Must have:

"H-NOF:"

ATTRACTION BETWEEN:

the partially negative part of a *lone pair* on an N, O, or F, atom

–

+

Hydrogen end of an O-H, N-H, or F-H bond

Is the molecule polar?

NO

London Dispersion Forces
(ONLY)

YES

Does the molecule have any of the following bonds:
H-N H-O
H-F

WITH LONE PAIR(S)!

NO

Dipole-Dipole
(and London dispersion)

YES

Hydrogen Bonds
(and Dipole-Dipole and London dispersion)

PAGE 142

Molecule	Dominant IMF	Written Justification
C_2H_6		
CH_3OH		
PF_3		
NH_3		
H_2CO		
CH_3F		

PAGE 143

Target: I can identify the strongest IMF present in a molecule

IMF Flow Chart Handout

K	C	Q