

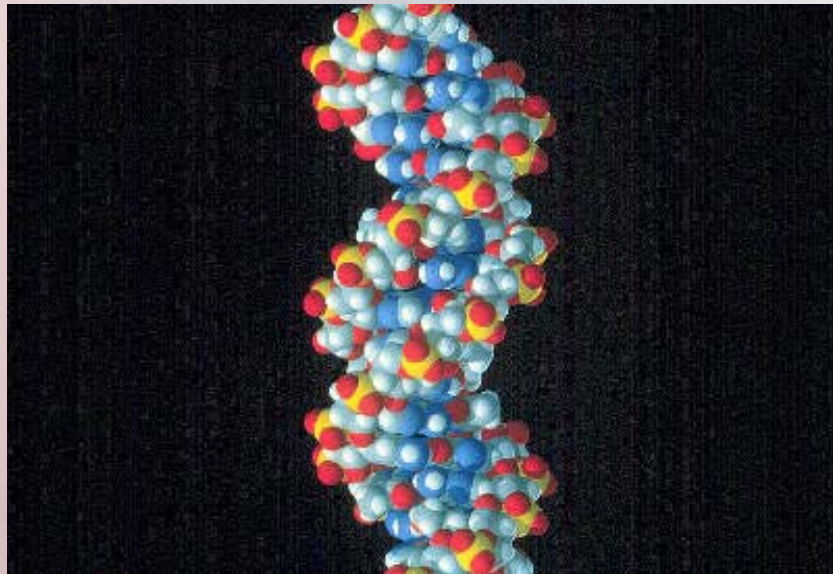


# Biotechnology Laboratory Technician Program



<http://matcmadison.edu/biotech/>

# What Is DNA?



# DNA



- Found in every living cell
- Carries all the information to make that organism



## DNA- You Have A Lot Of It!

- If you took all the DNA in every cell in your body and stretched it out, it would reach to the moon over **2500** times!!!

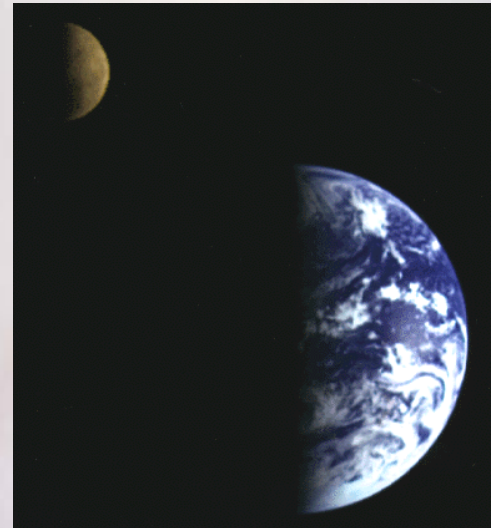


Image courtesy of NASA

# What does DNA look like?

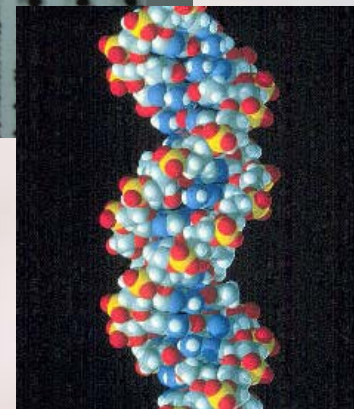
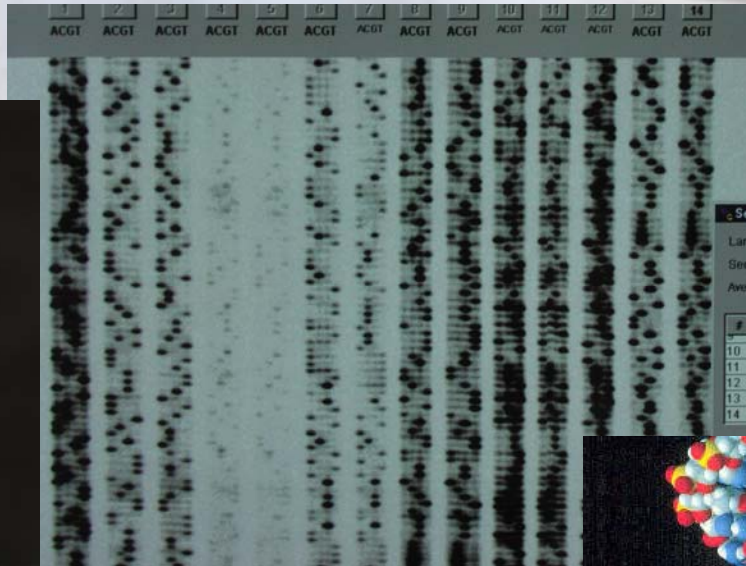


Image of DNA sequence gel; courtesy of [LTSN Bioscience at the University of Leeds](http://www.bioscience.heacademy.ac.uk/), licensed for use through the Centre for Bioscience ImageBank <http://www.bioscience.heacademy.ac.uk/imagebank/>



## How Is DNA Used To Solve A Crime?

- Powerful technology
- Great discriminating power
- Huge improvements in the last 2 decades
- Extremely small sample size necessary



# Is There DNA In The Food You Eat?



QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.



Honey image used with permission from the  
Agricultural Research Service of the USDA

# Let's Find Out!





# Your Instructor Will Make a Delicious Fruit Smoothie





**ENJOY!**

**(but save some for the experiment!)**





**Pour approximately  
5ml of smoothie into your  
tube**(your tube will be plastic)



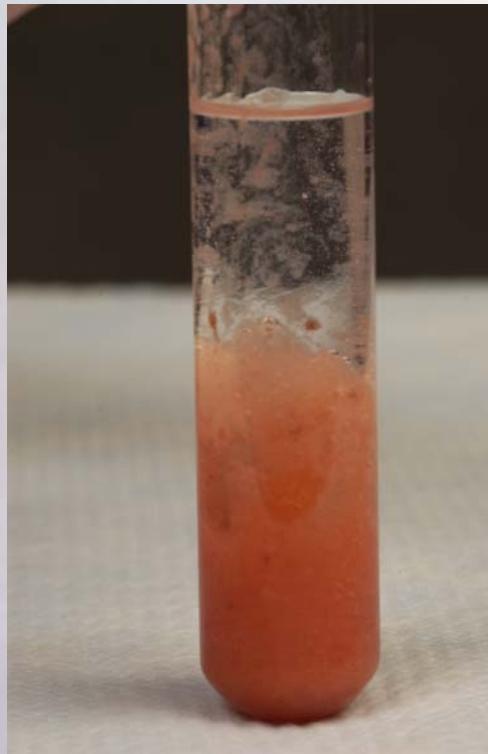


**Add all of your tube  
of soap to the smoothie.  
Rock gently. DO NOT SHAKE!**

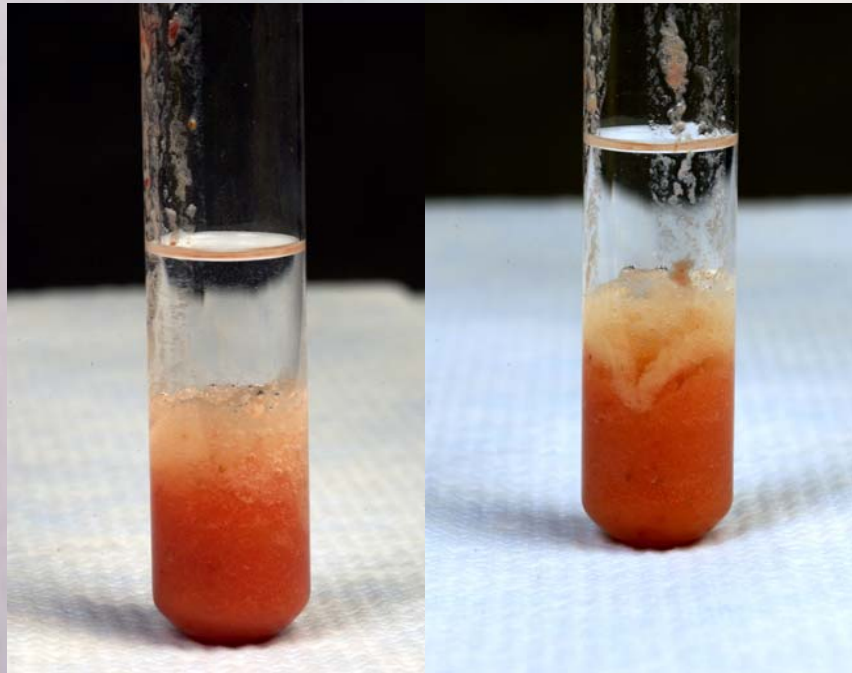




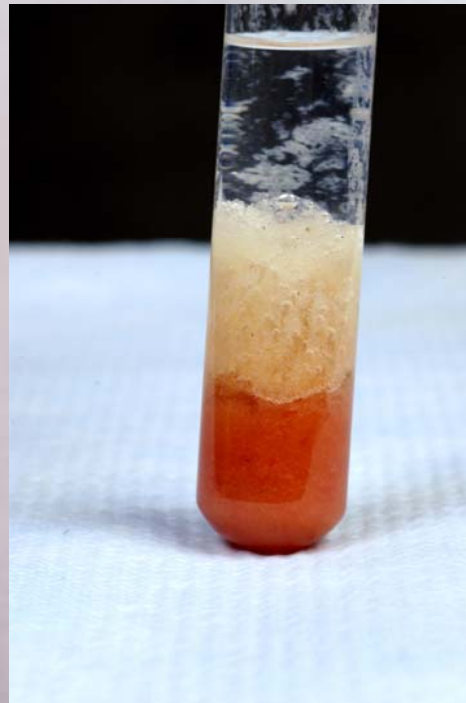
**Instructors will come around and layer alcohol on top of your smoothie. DO NOT MIX!**



**Watch as DNA begins  
to appear at the interface  
between the two layers**

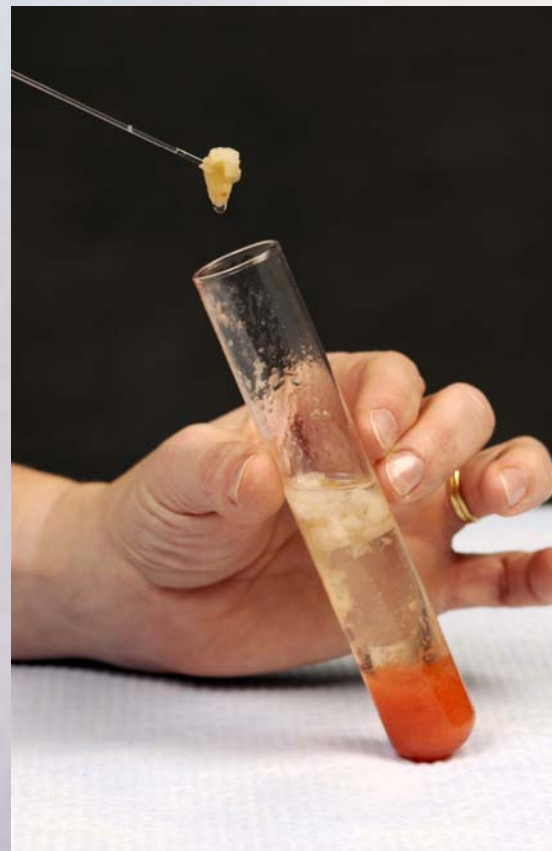


**Gradually the DNA  
will become more apparent and  
will rise within the alcohol layer**





# DNA can be hooked or spooled to remove





# You Have Just Isolated DNA From A Fruit Smoothie!

