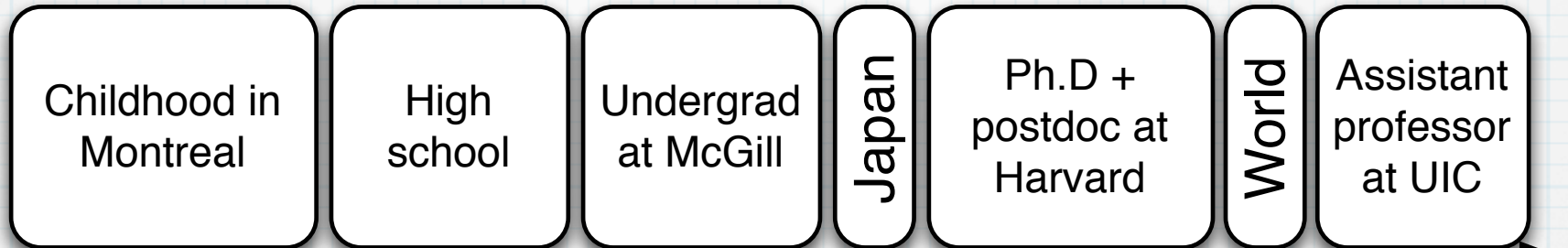


# An academic path: me, my job and my research

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Natasha Devroye  
Assistant Professor  
Electrical and Computer Engineering  
University of Illinois at Chicago

# “Academic” path



1980

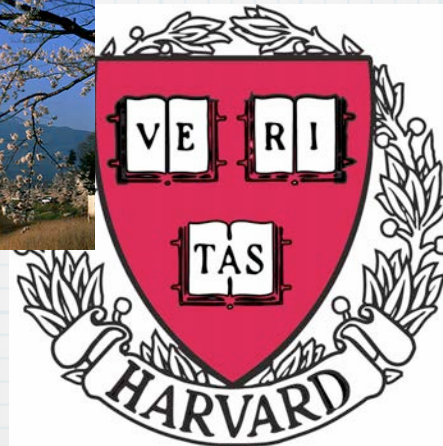
1992

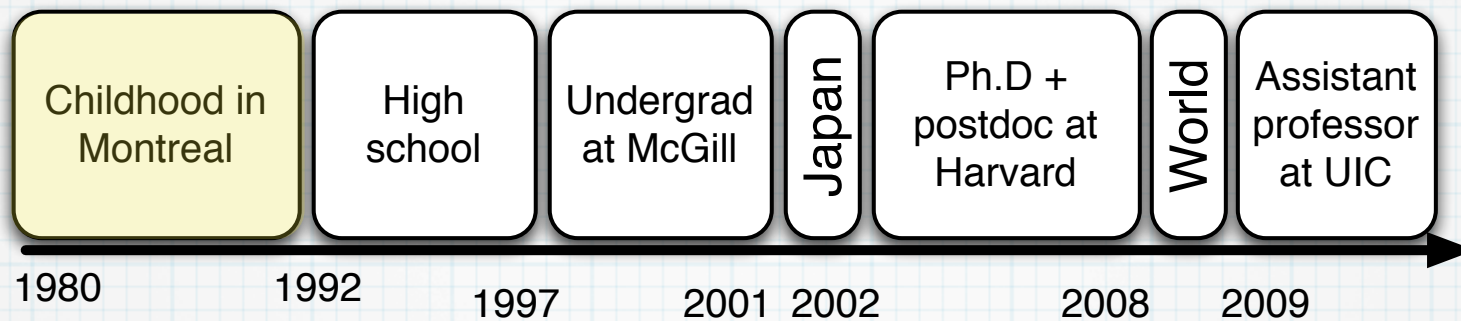
1997

2001 2002

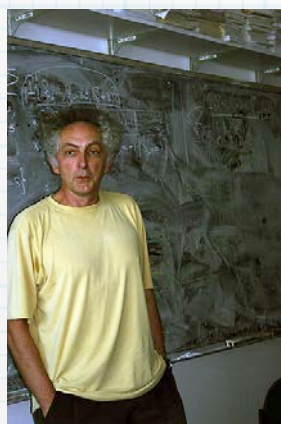
2008

2009





KEY Factors:



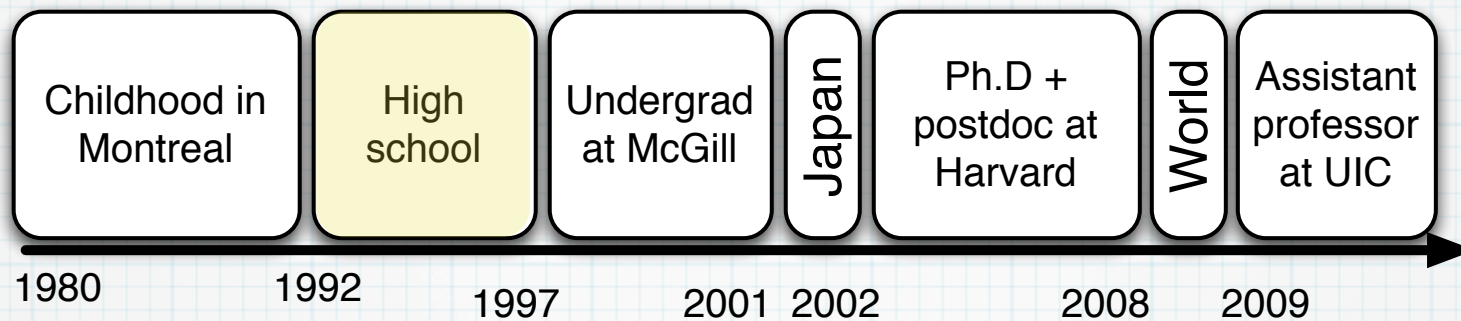
+

Professor Avis  
 Professor Toussaint  
 Professor Chvatal  
 Professor Gyorfy  
 .....

KEY LESSONS LEARNED:

**Importance of role models**

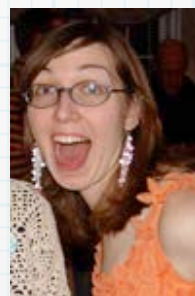
**Math is fun!**



KEY Factors:



+



+

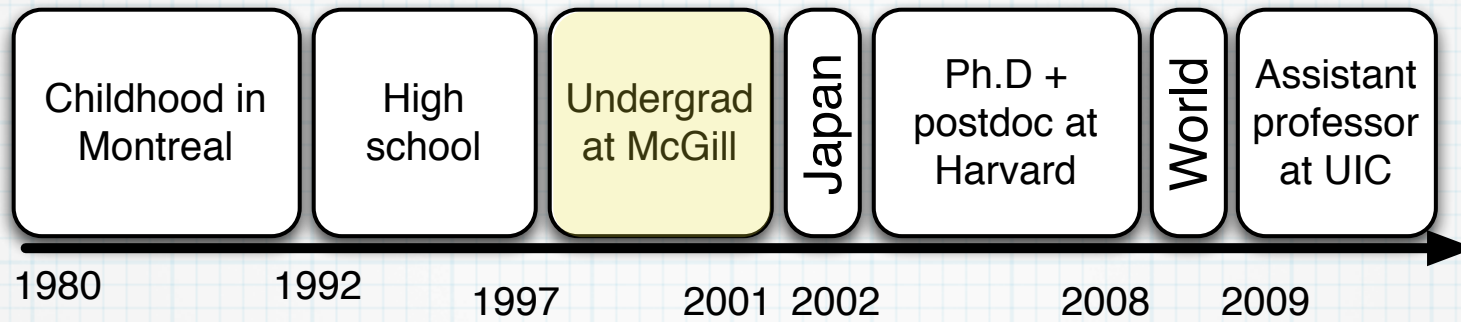
Peers  
Parents

KEY LESSONS LEARNED:

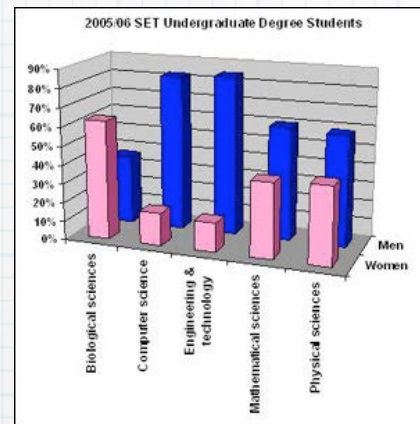
Importance of some competition

Math is (still) fun!

Nerdy is OK / great



KEY Factors:



+

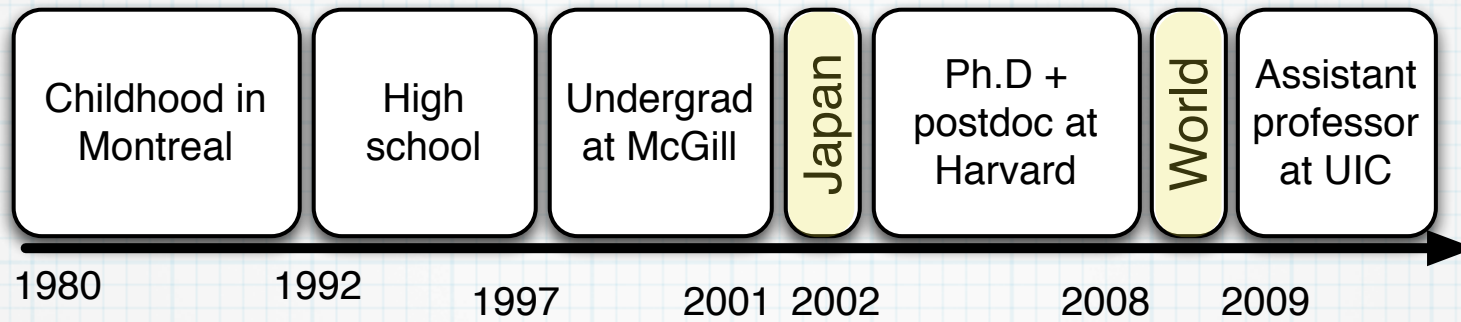


KEY LESSONS LEARNED:

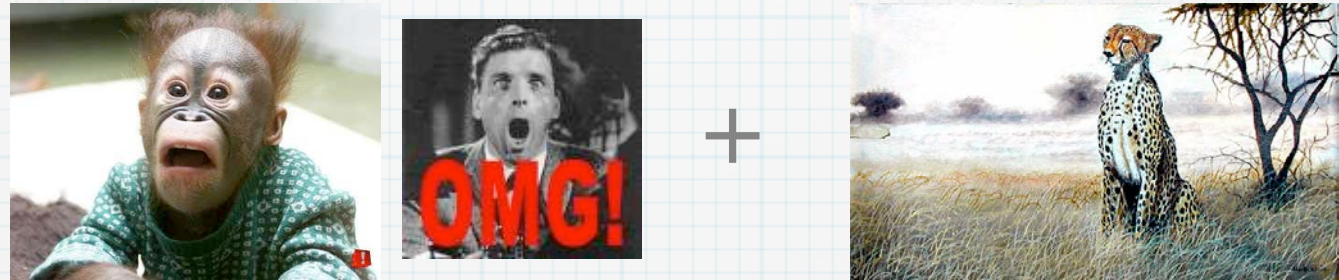
Women approach things differently

Engineering is (also) fun!

Stand out in a good way



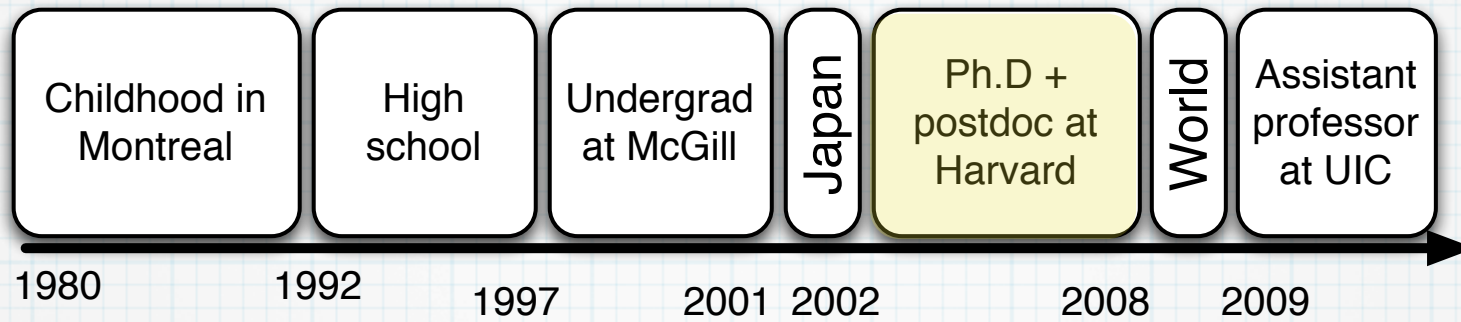
KEY Factors:



KEY LESSONS LEARNED:

Don't judge a woman by her...?

Taking (some) time off is good for you (+ science)

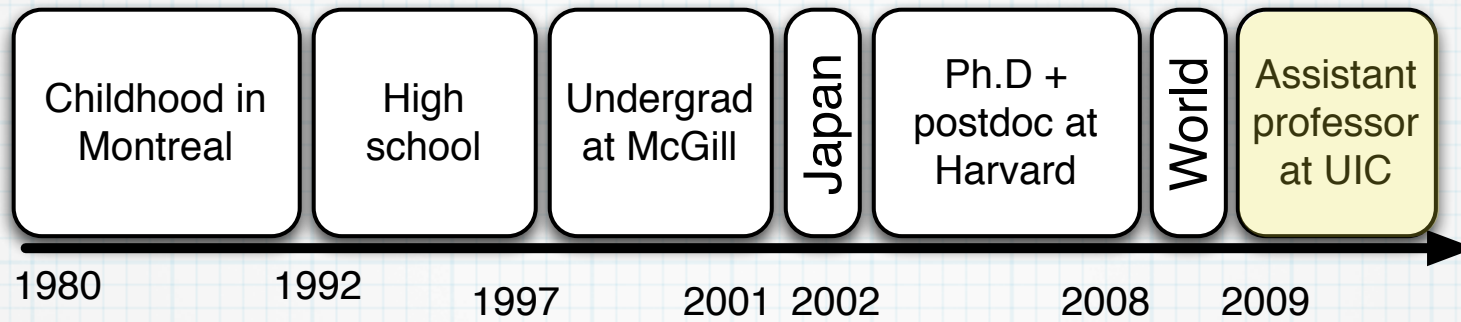


KEY Factors:



KEY LESSONS LEARNED:

- Learn your strengths
- Importance of female peers
- Sticking out is definitely a plus



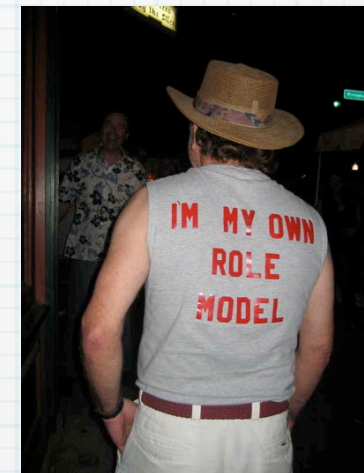
### KEY Factors:



+



+



### KEY LESSONS LEARNED:

- Play to your strengths
- Importance of female peers
- Great time to be a woman in science!!

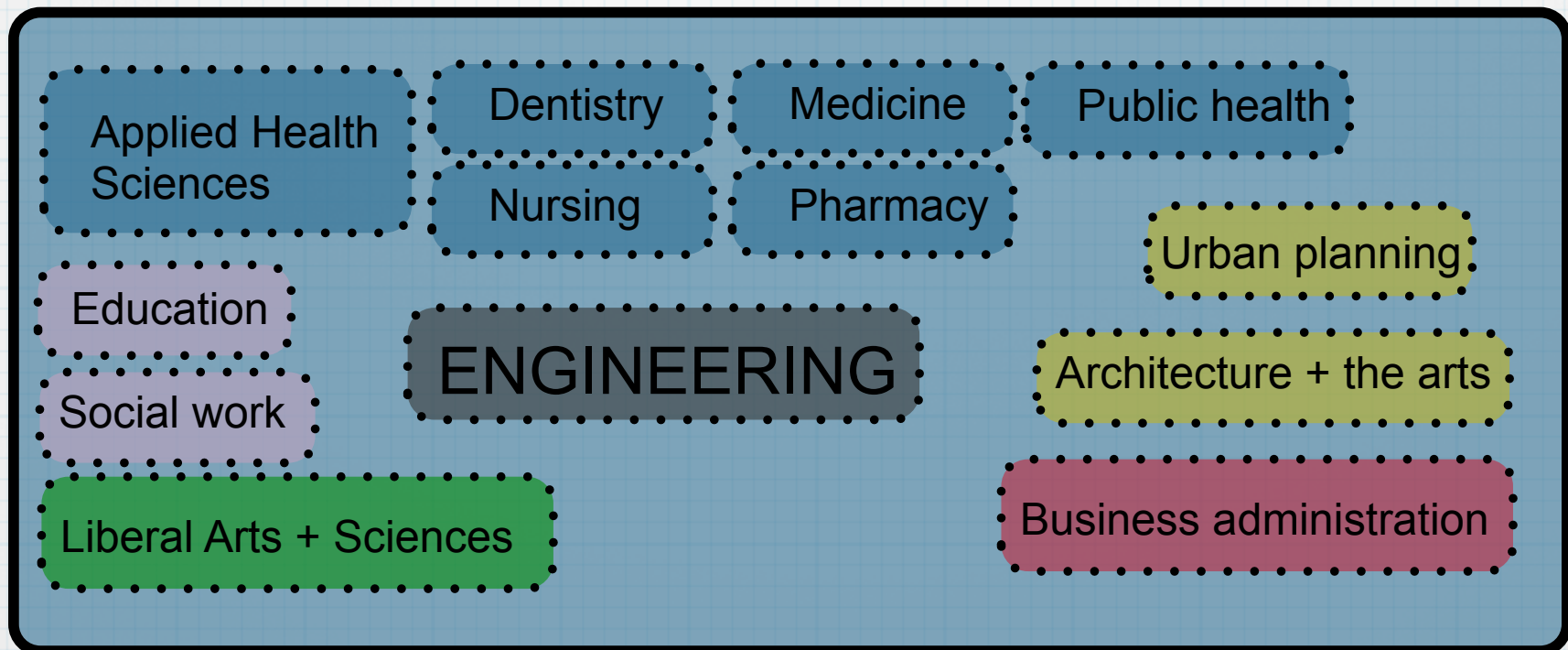


# What do I do?



“Assistant Professor” at UIC

# UIC



<http://www.uic.edu/index.html/colleges.shtml>

# What do I do?



ENGINEERING

``Assistant Professor'' at UIC

40% Teach: 1-2 courses per semester (*Lecturer vs. professors*)

40% Research: with colleagues, undergraduate, Master's, Ph.D. students  
write grants (get \$\$ for my research - like a scholarship)

20% Service: conferences, reviewers, committees

# What is teaching?

**You all know**

# What is research?

## What is research?

*It's an entire process*

DICTIONARY DEFINITION

### RE-SEARCH

**Function:** noun, verb transitive

**Etymology:** Middle French recherche, from recherchier to investigate thoroughly, from Old French, from re- + cerchier to search

**Date:** 1577

1. to search or investigate exhaustively
2. studious inquiry or examination; especially : investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws
3. the collecting of information about a particular subject

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**Learn!**

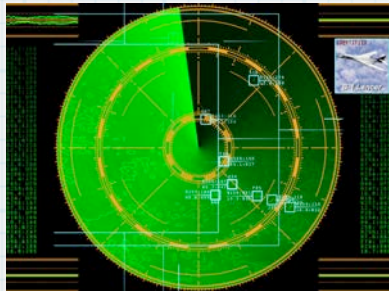
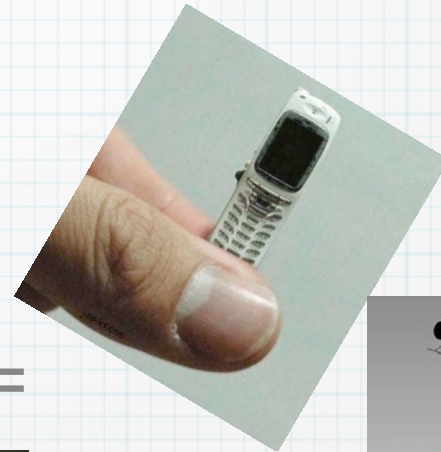
**Discover!**

**Go where no-one has gone  
before!**

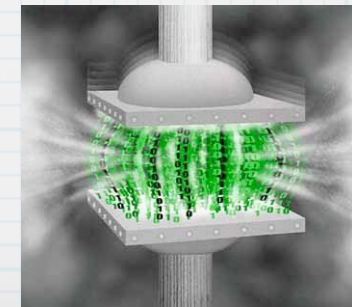
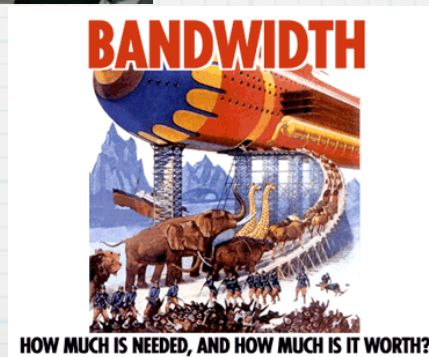
**Innovate!**

# What do I research?

- Engineering =
- Electrical engineering =
- Wireless communications =

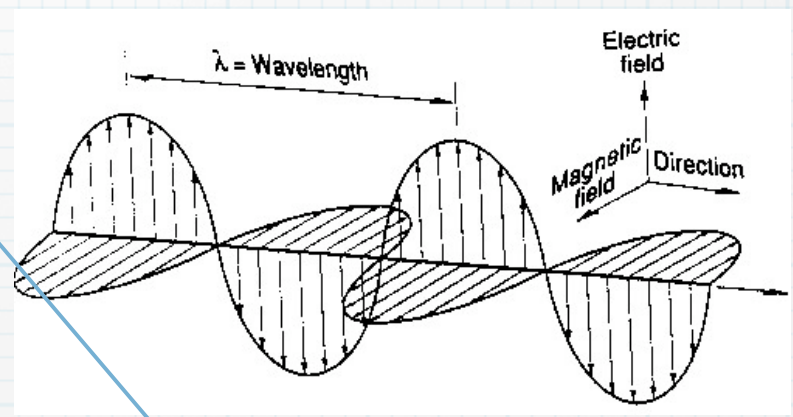
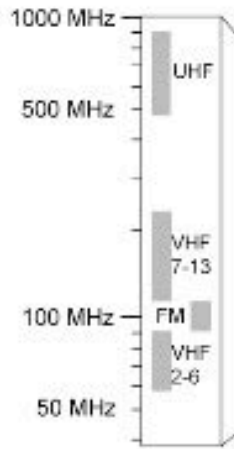
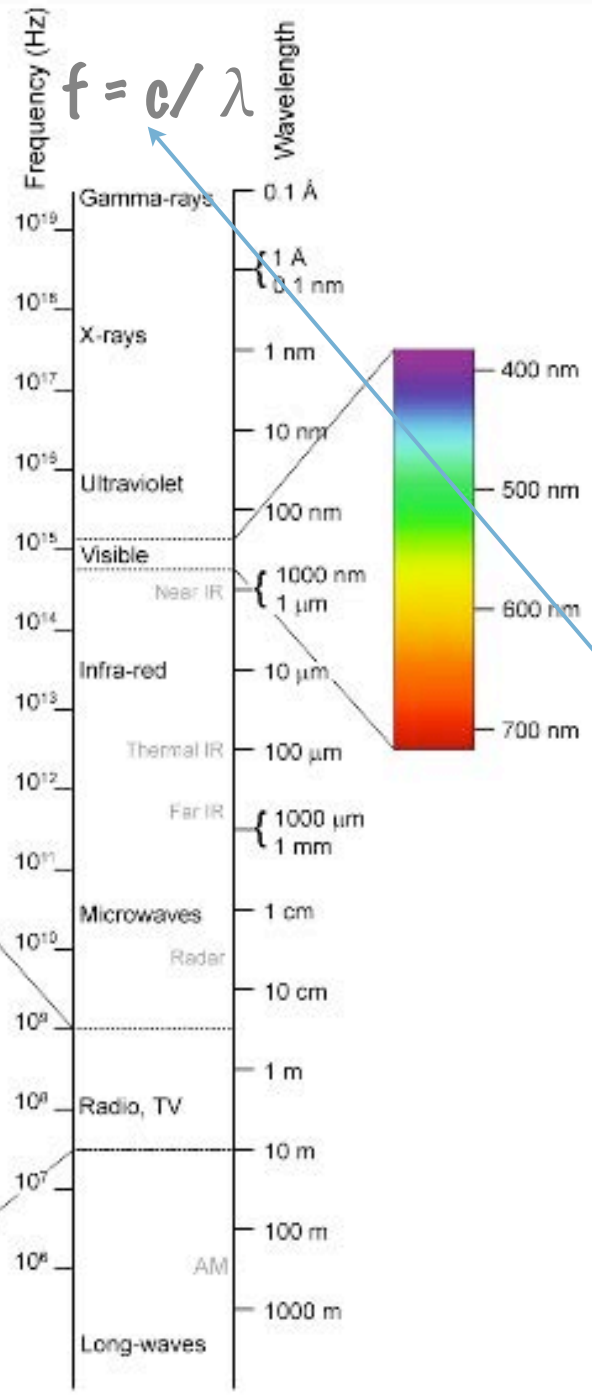


- Information theory =



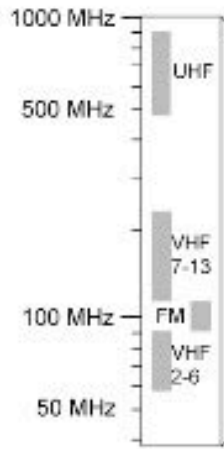
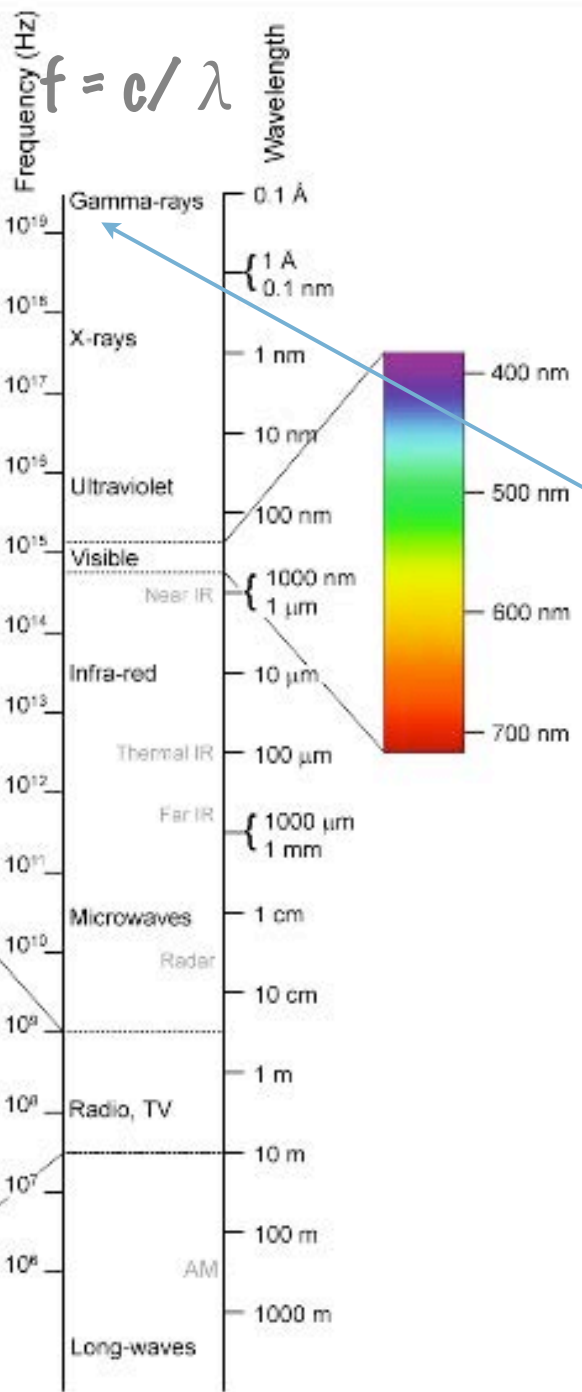
# But why?

## Electromagnetic Spectrum

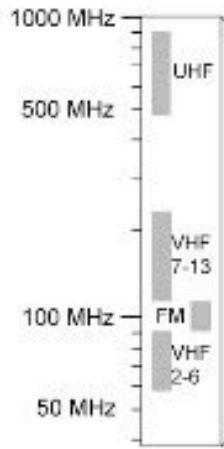
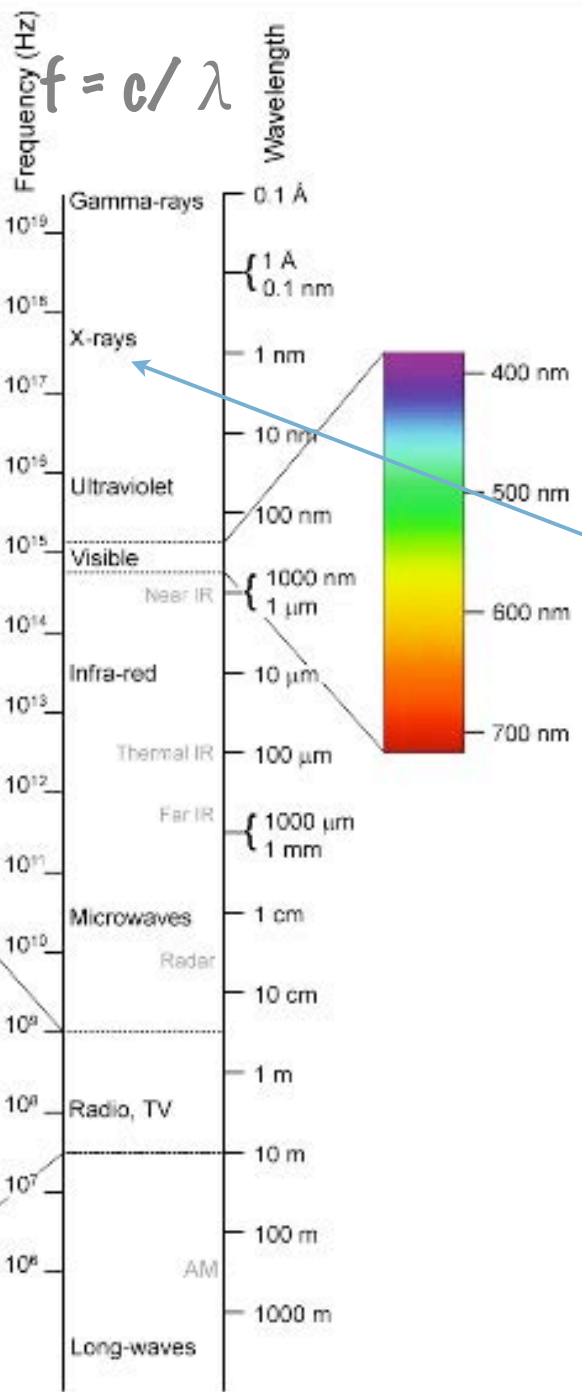


$$f = c / \lambda$$

# Electromagnetic Spectrum

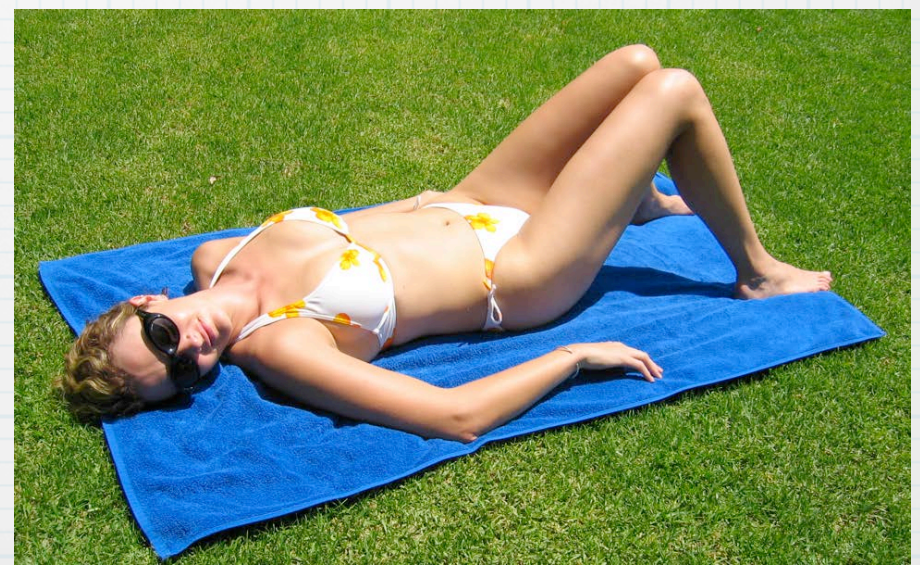
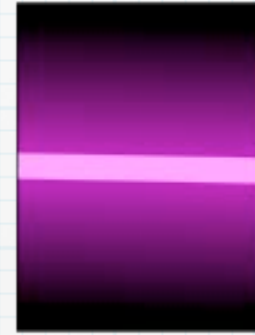
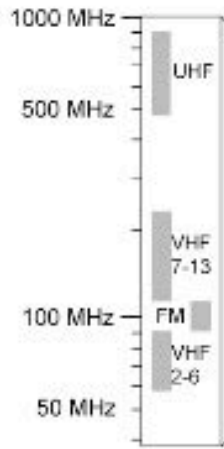
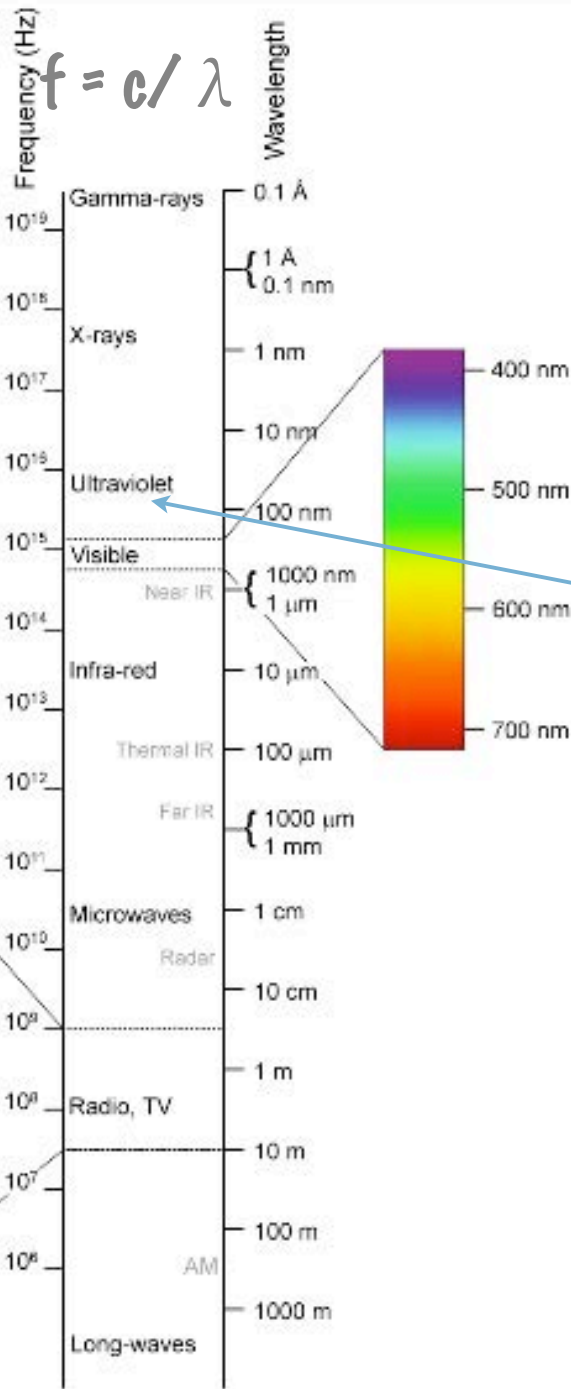


# Electromagnetic Spectrum



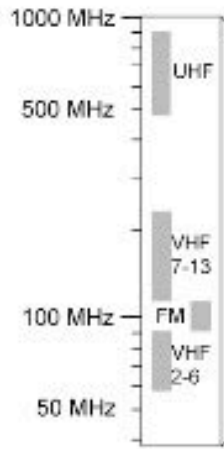
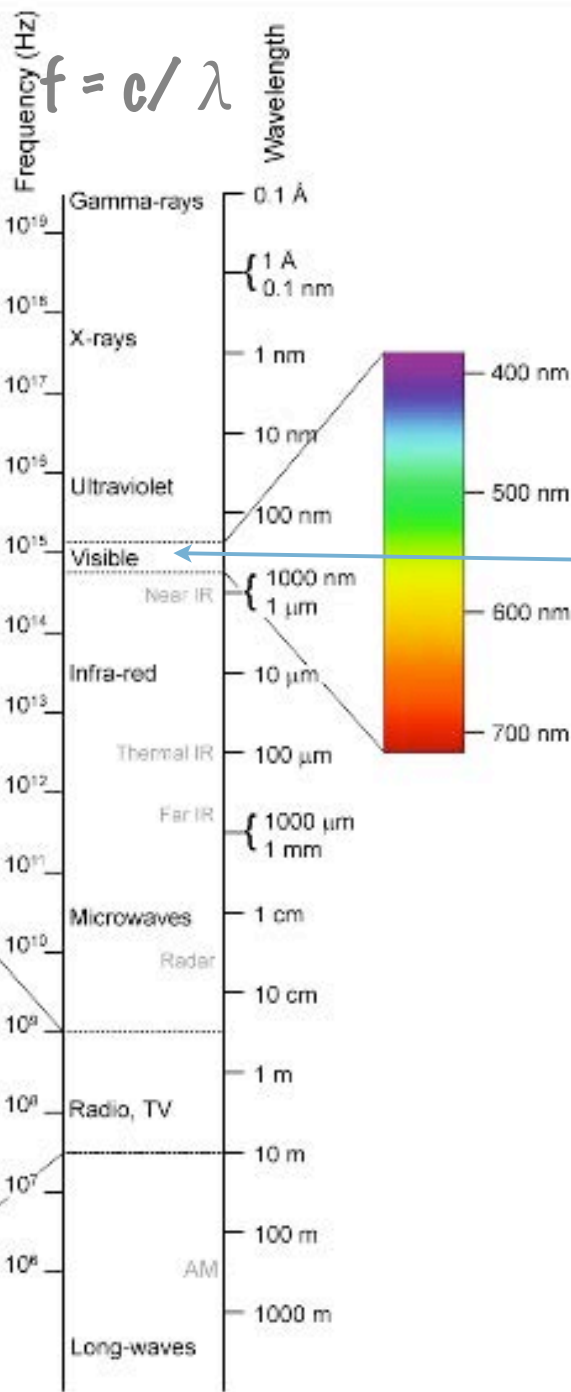


# Electromagnetic Spectrum

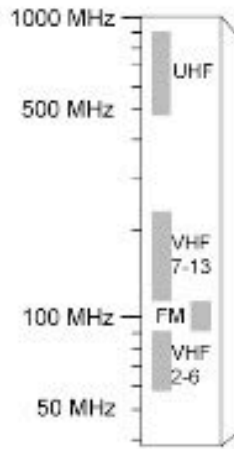
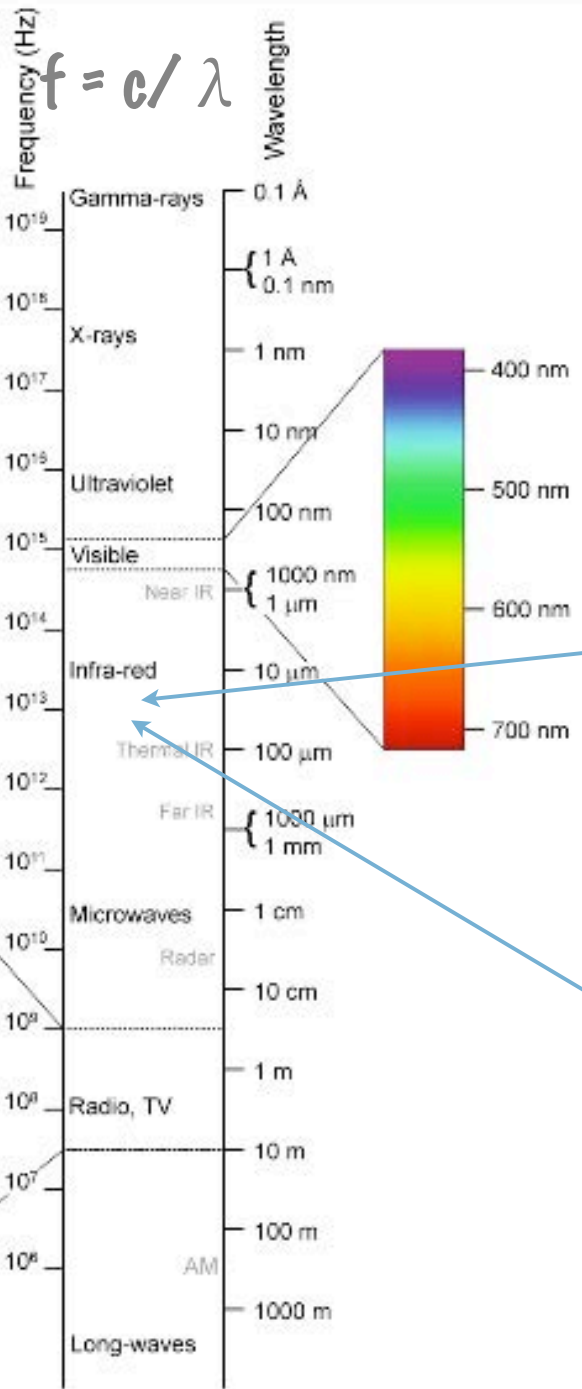


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# Electromagnetic Spectrum

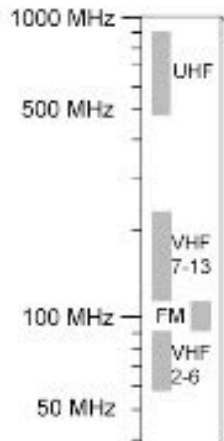
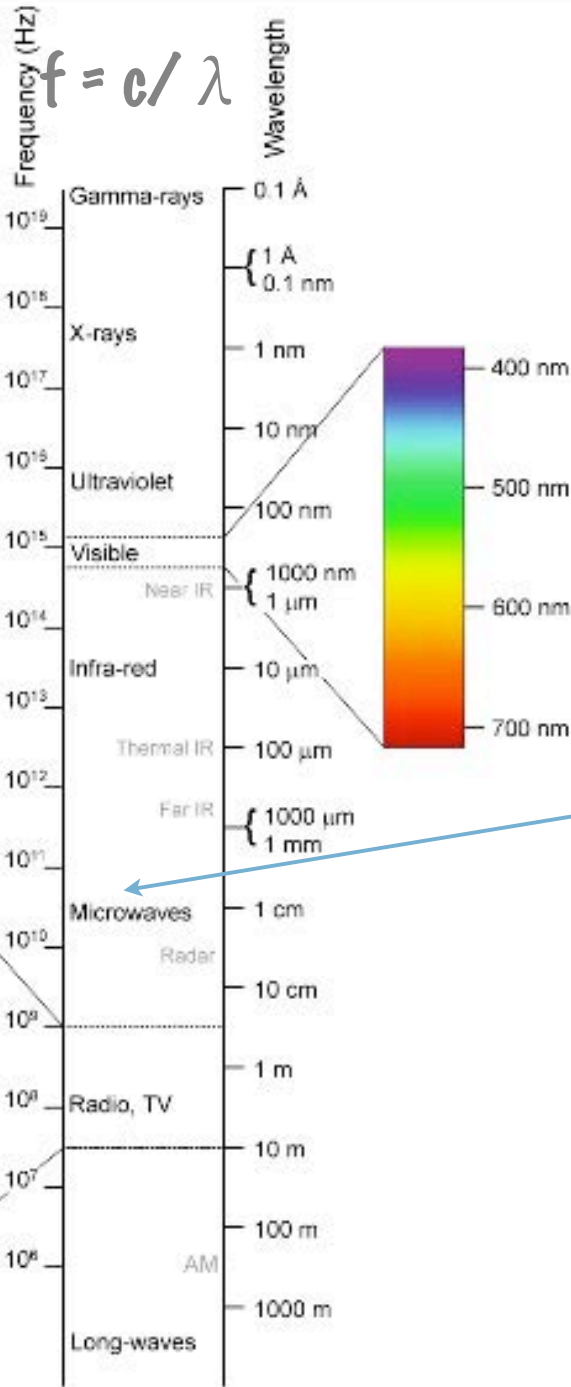


# Electromagnetic Spectrum



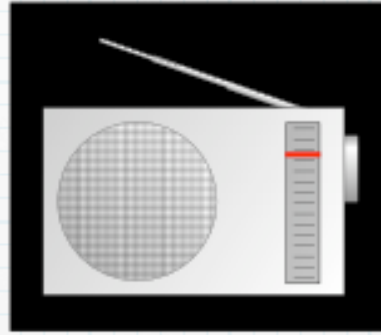
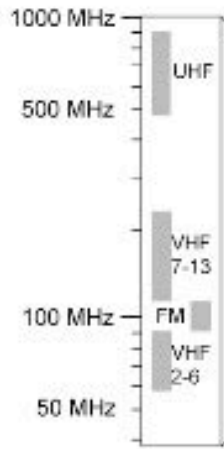
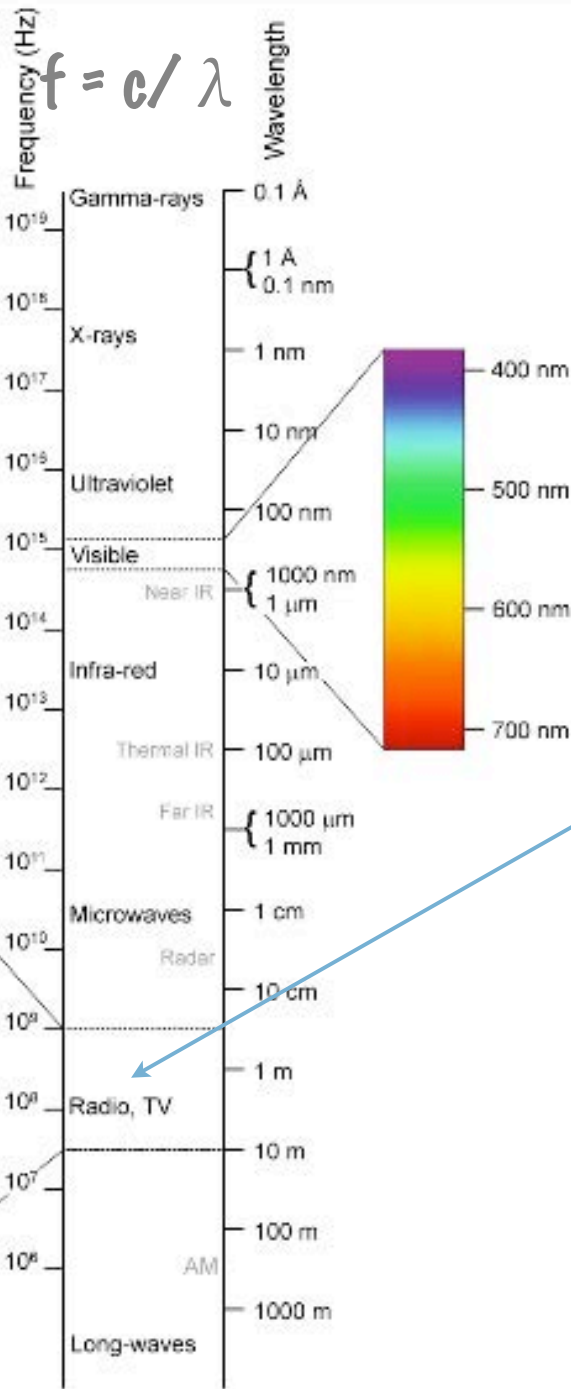
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# Electromagnetic Spectrum



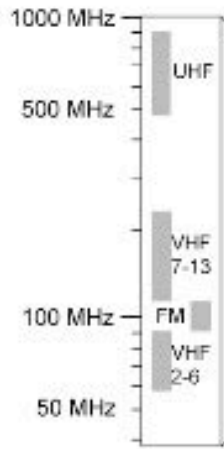
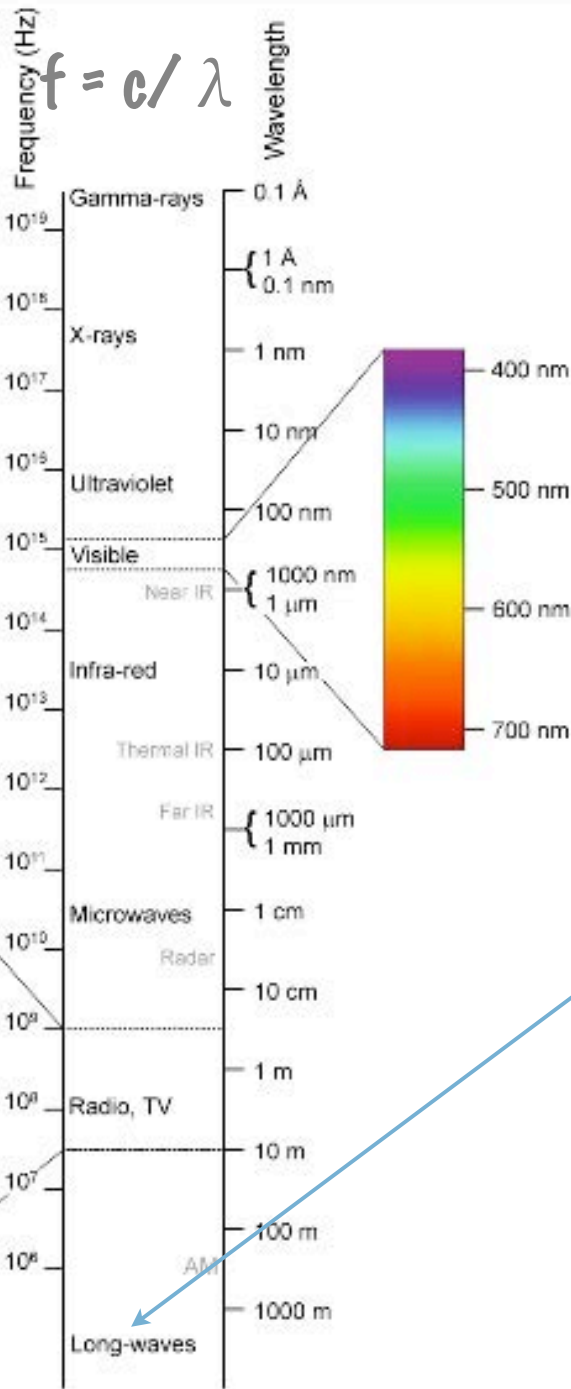
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# Electromagnetic Spectrum



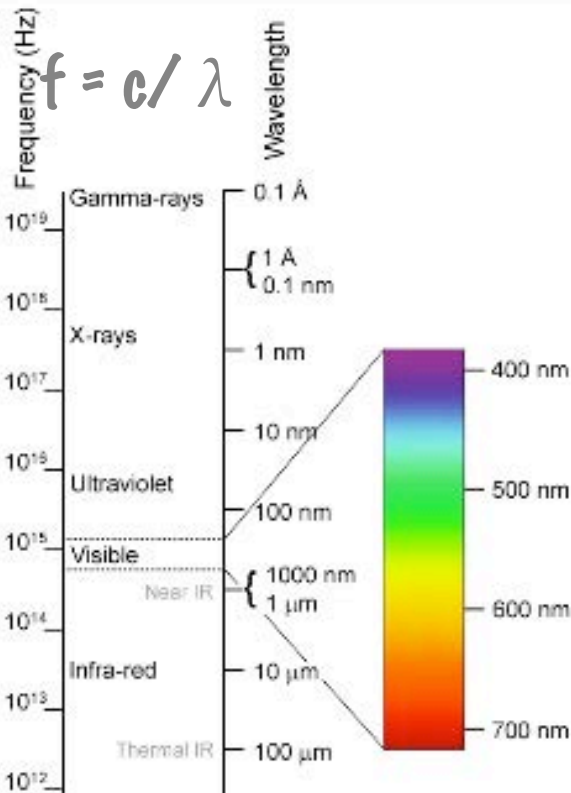
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# Electromagnetic Spectrum

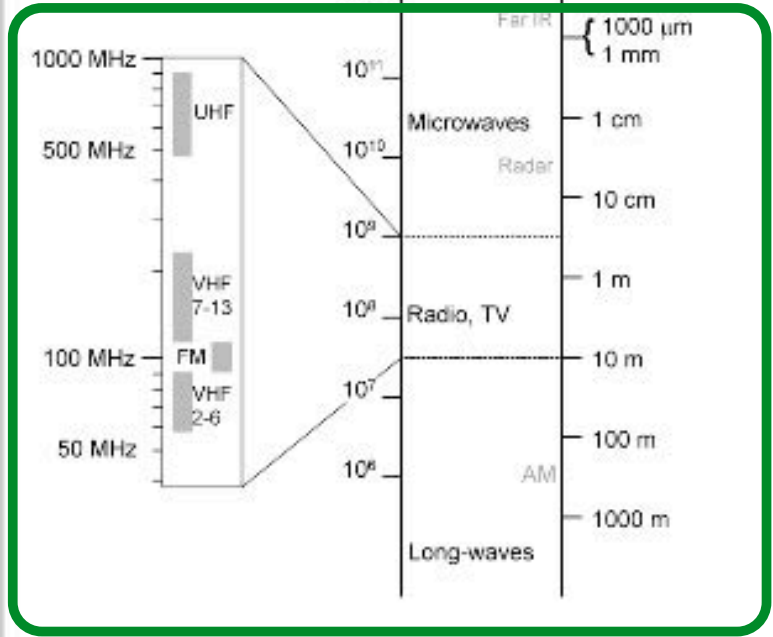


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# Electromagnetic Spectrum



Used for "radio" communication!



Louis E. Keiner - Coastal Carolina University





# Goal



ENGINEERING

“Assistant Professor” at UIC

Find more efficient ways of communicating wirelessly!

Especially in wireless networks....

# Questions, now or later, are most welcome

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Natasha Devroye

[devroye@ece.uic.edu](mailto:devroye@ece.uic.edu)

<http://www.ece.uic.edu/~devroye>