

# Skype a Scientist!

With Andrew Leduc



# Introduction:



Andrew Leduc

- Graduate Student Researcher at Northeastern University in Boston
- Member of the Slavov Laboratory

# The Story of Science



# What is Science?



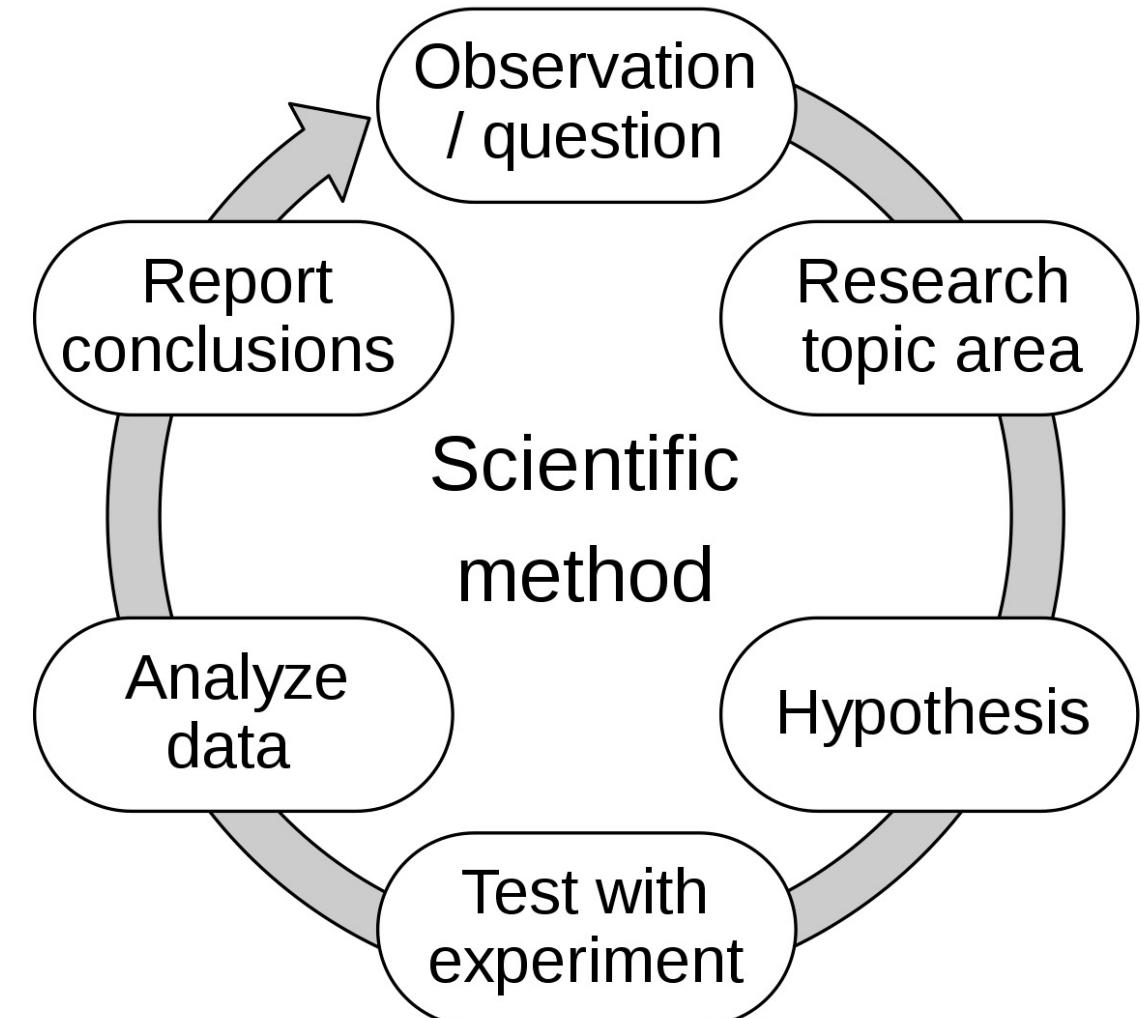
## Informal Definition:

- A human's attempt at trying to understand and explain the world around them

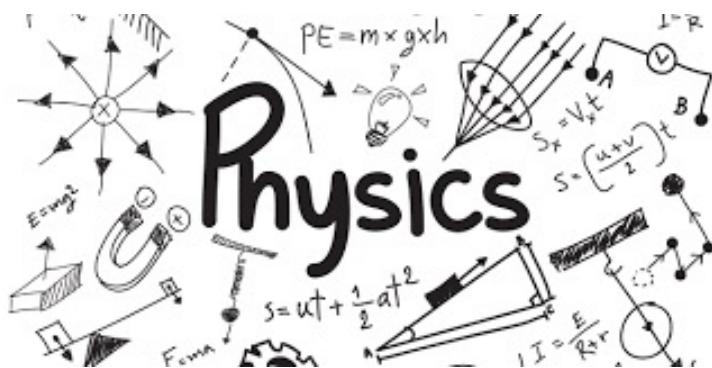
# What is Science?

## Formal Definition:

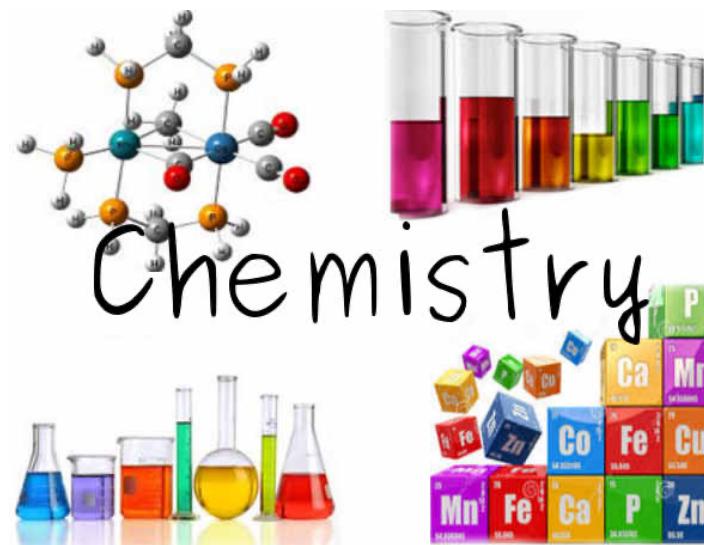
- The systematic study of the structure and behavior of the physical and natural world through observation and experiment



# Different Fields of Science



## Physics



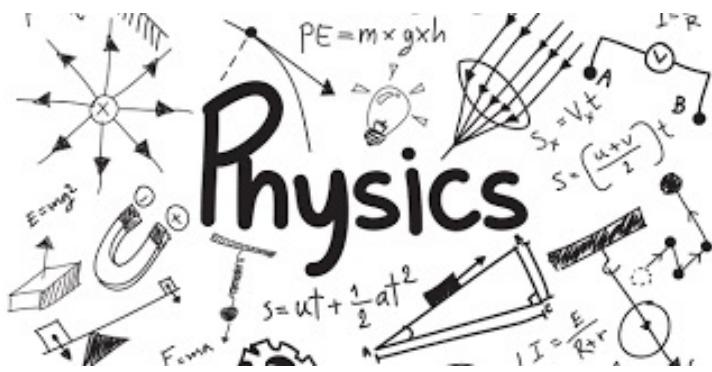
## chemistry



# Different Fields of Science



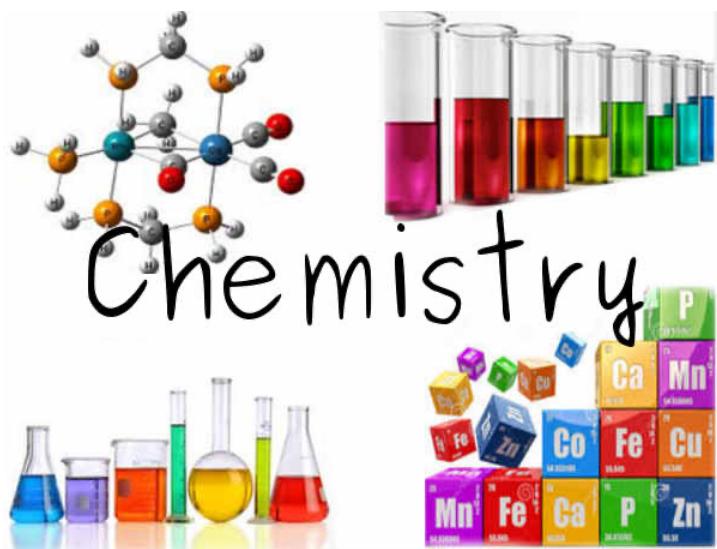
# Different Fields of Science



## Type of things a Physicist would study

- Stars and Galaxies
- Atoms and other particles
- Heat, light, and magnets

# Different Fields of Science



## Type of things a Chemist would study

- Chemical reactions
- New materials, metals fabrics
- New fuel sources, batteries

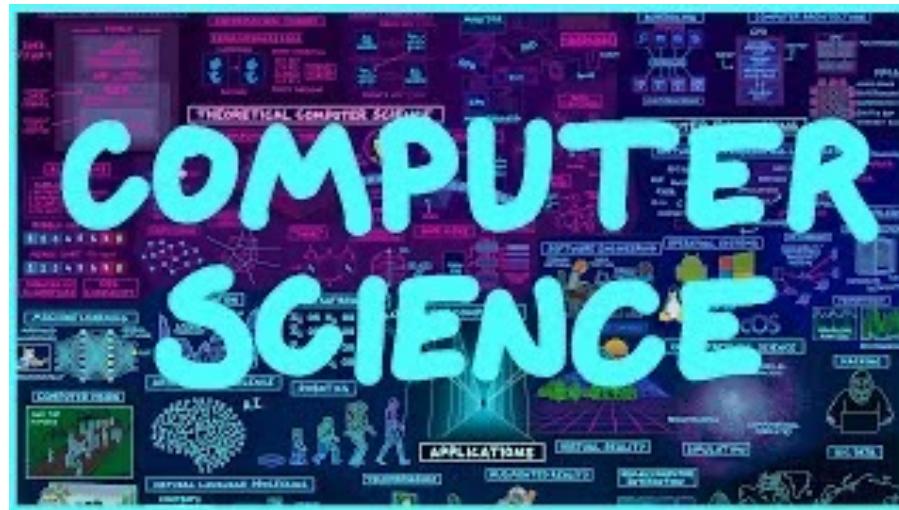
# Different Fields of Science



## Type of things a Biologist would study

- How life started
- How different parts of life work today
- Cells, organs, plants, animals, humans

# Different Fields of Science



Type of things a Computer Scientist would study

- How to make computers do new tasks
- How to make computers think like people do
- Are computers alive?

# Training for Scientists

## Scientist Training:

- Highschool: Take science/ math classes
- College: Study in a field of Science, math, or Engineering
- PhD: Formal Scientist Training



# Careers in Scientists



## Public

Professor at University

National Labs like the National Institute of Health  
Hospitals

## Private

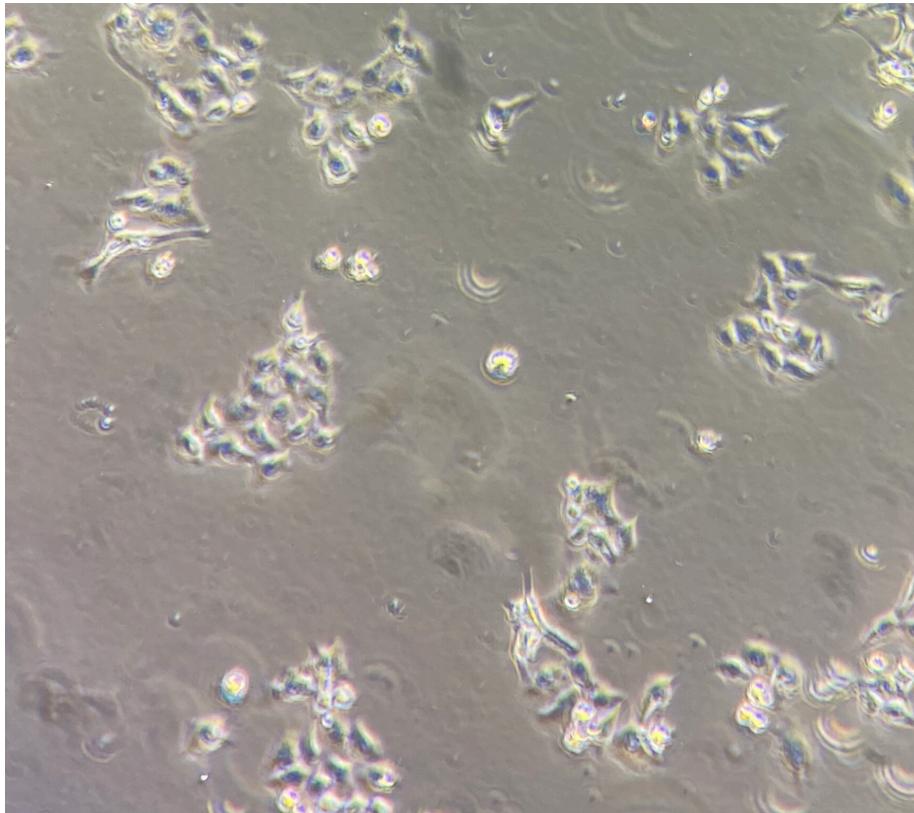
Technology Company like Apple Microsoft

Companies that make medicine  
Companies that make everyday  
products like clothes or food!

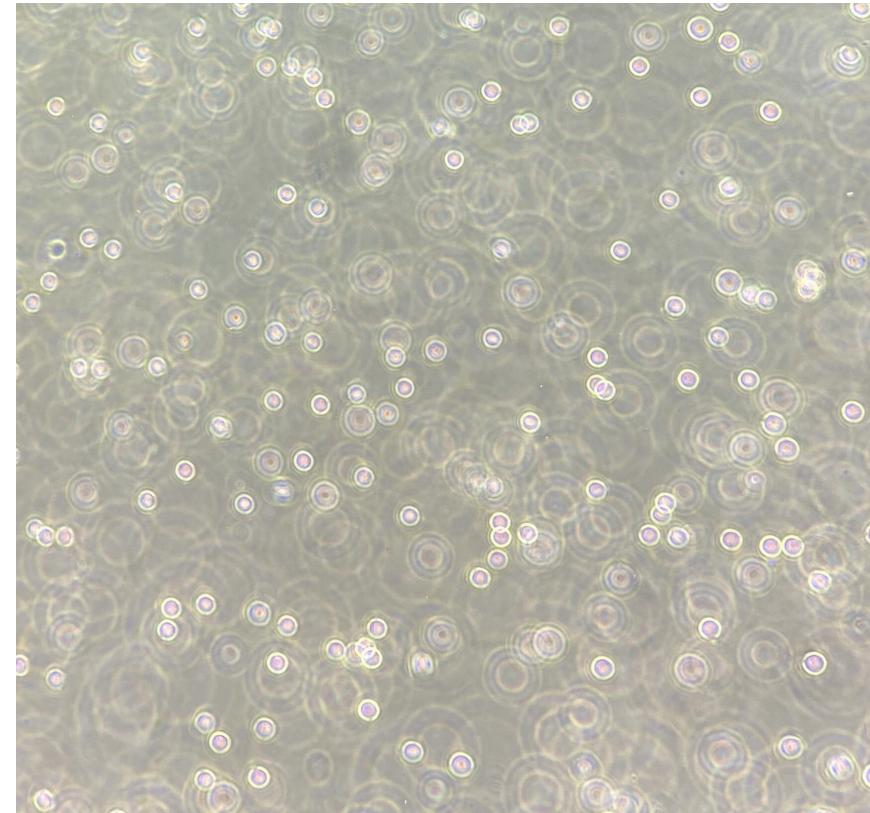
# My Research

- I'm a Cell Biologist working for a Professor at Northeastern

Skin Cells



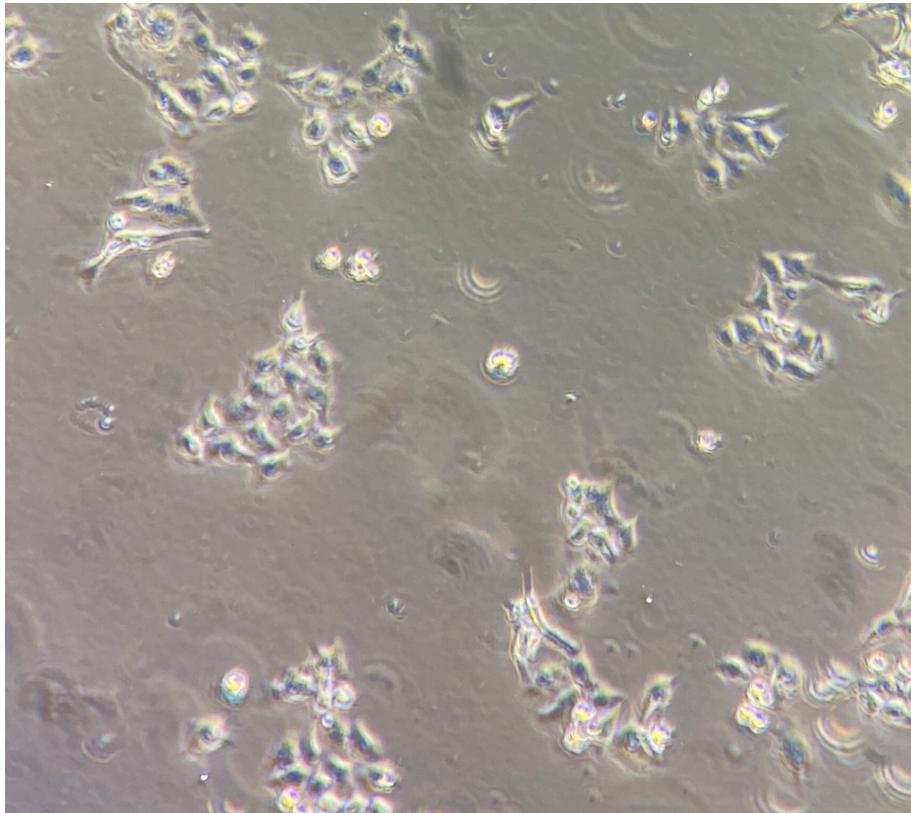
T-Cells (Immune system)



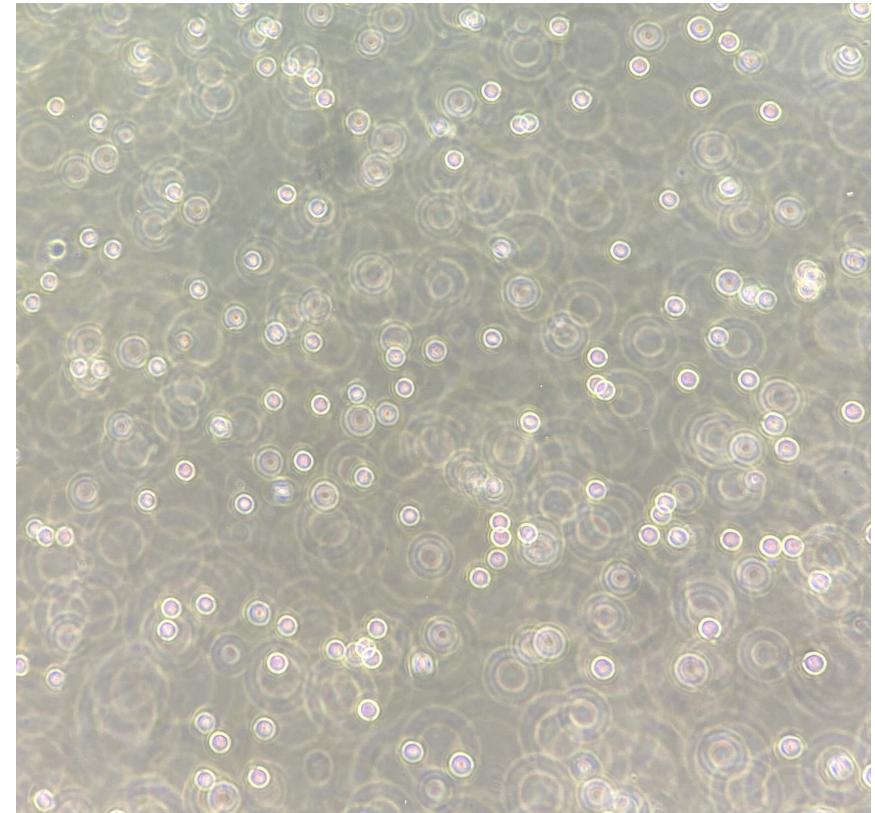
# My Research

- I study proteins in single cells to learn about how cells perform basic functions like eating, growing, and replicating

Skin Cells



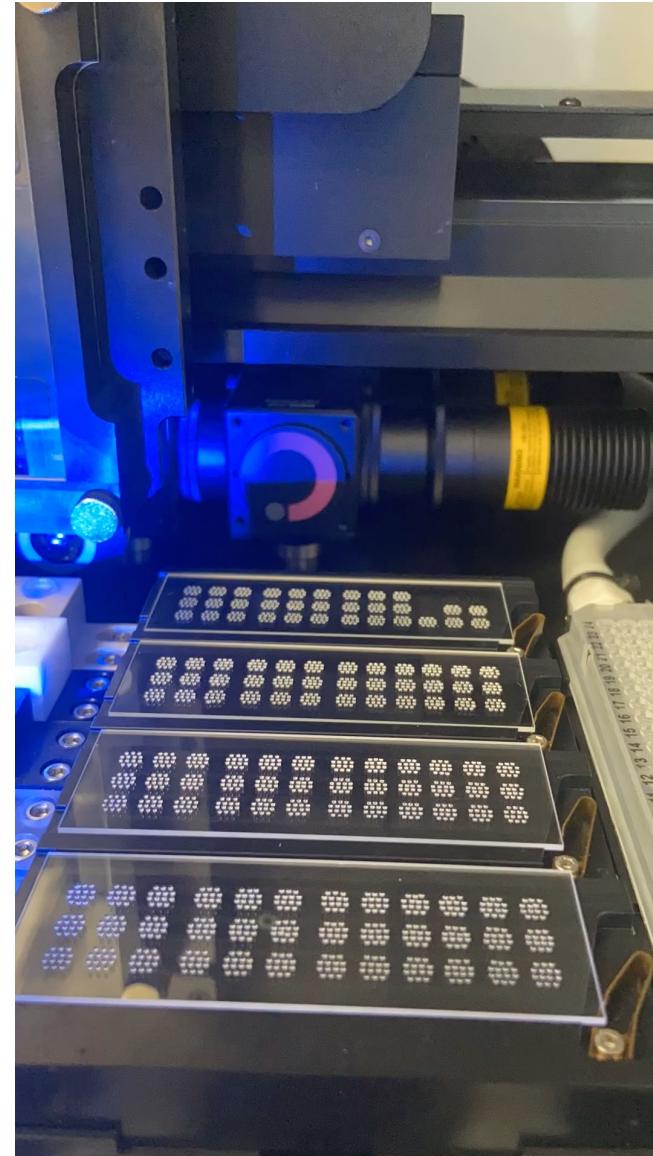
T-Cells (Immune system)



# My Research

To study single cells I use:

- Robots
- Computer software
- Lab coat, gloves, and other safety equipment



# My Research

New Results

 [Follow this preprint](#)

## Droplet sample preparation for single-cell proteomics applied to the cell cycle

 Andrew Leduc,  R. Gray Huffman,  Nikolai Slavov

**doi:** <https://doi.org/10.1101/2021.04.24.441211>

This article is a preprint and has not been certified by peer review [what does this mean?].



Protocol | Published: 29 October 2021

## Multiplexed single-cell proteomics using SCoPE2

[Aleksandra A. Petelski](#), [Edward Emmott](#), [Andrew Leduc](#), [R. Gray Huffman](#), [Harrison Specht](#), [David H. Perlman](#) & [Nikolai Slavov](#) 

[Nature Protocols](#) (2021) | [Cite this article](#)

1957 Accesses | 93 Altmetric | [Metrics](#)

# Who Can Become A Scientist?

# Anyone Interested! ... You!

- ❖ Nobel Prize given for genetic editing to Jennifer Doudna and Emmanuelle Charpentier



Jennifer Doudna and Emmanuelle Charpentier share the 2020 Nobel chemistry prize for their discovery of a game-changing gene-editing technique. Credit: Alexander Heinl/Picture Alliance/DPA

# How to Become A Scientist?

# Get Inspired!

Shows:

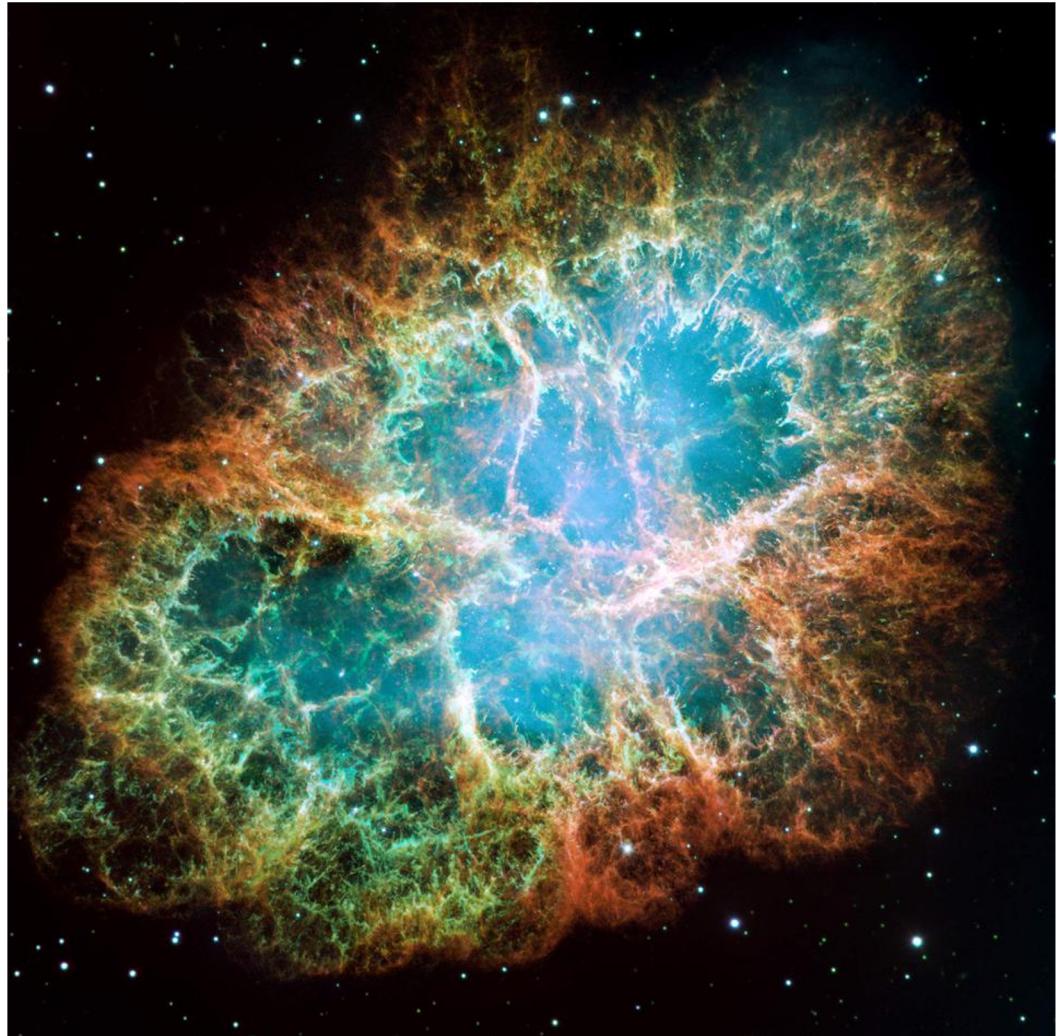
- ❖ Fabric of the Cosmos: Brian Green

Podcasts:

- ❖ Lex Friedman Podcast
- ❖ Mindscape: Sean Carroll

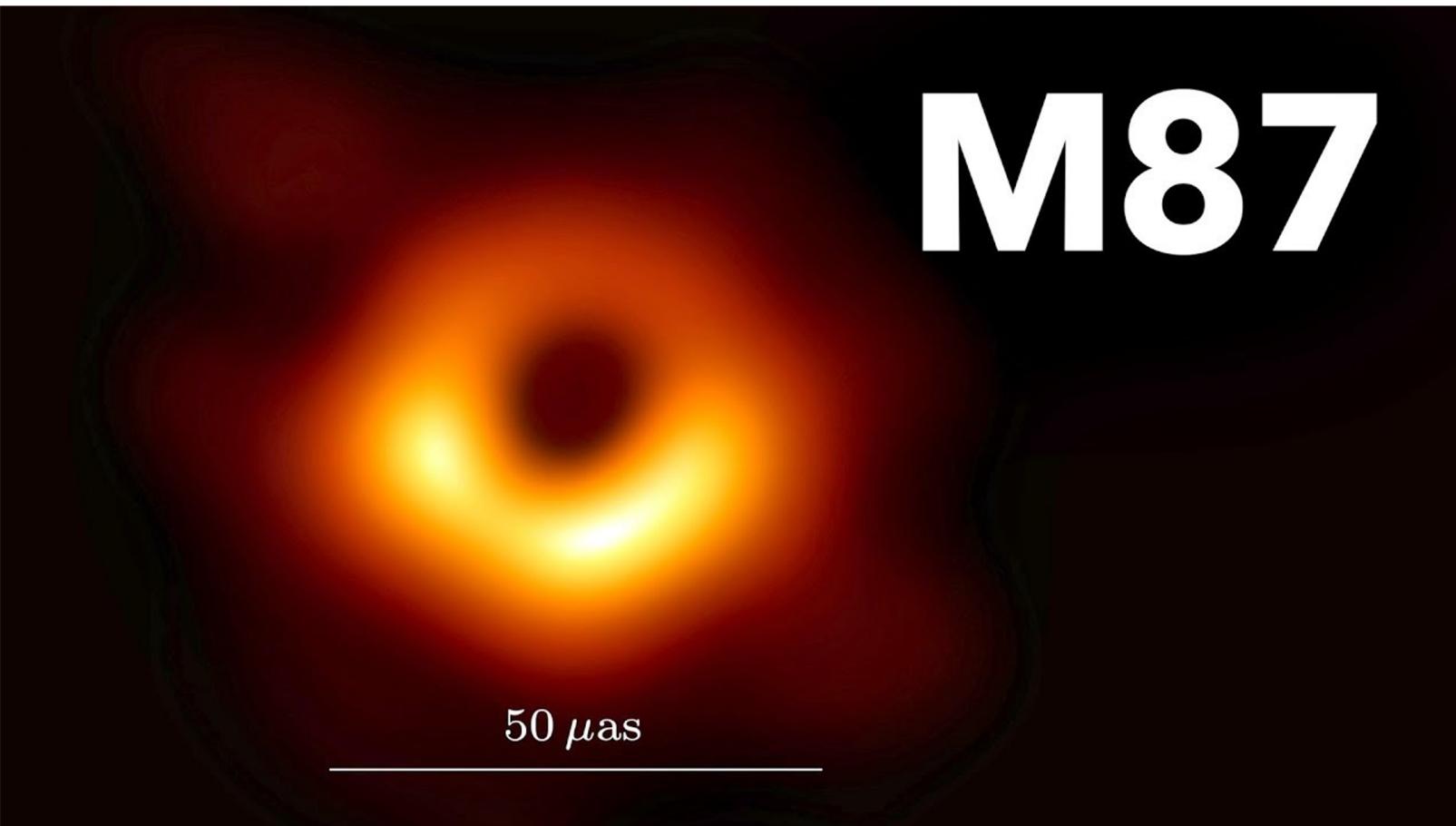
Books:

- ❖ Michio Kaku: Physics of the Future



# Why Become A Scientist?

# Science is Cool!



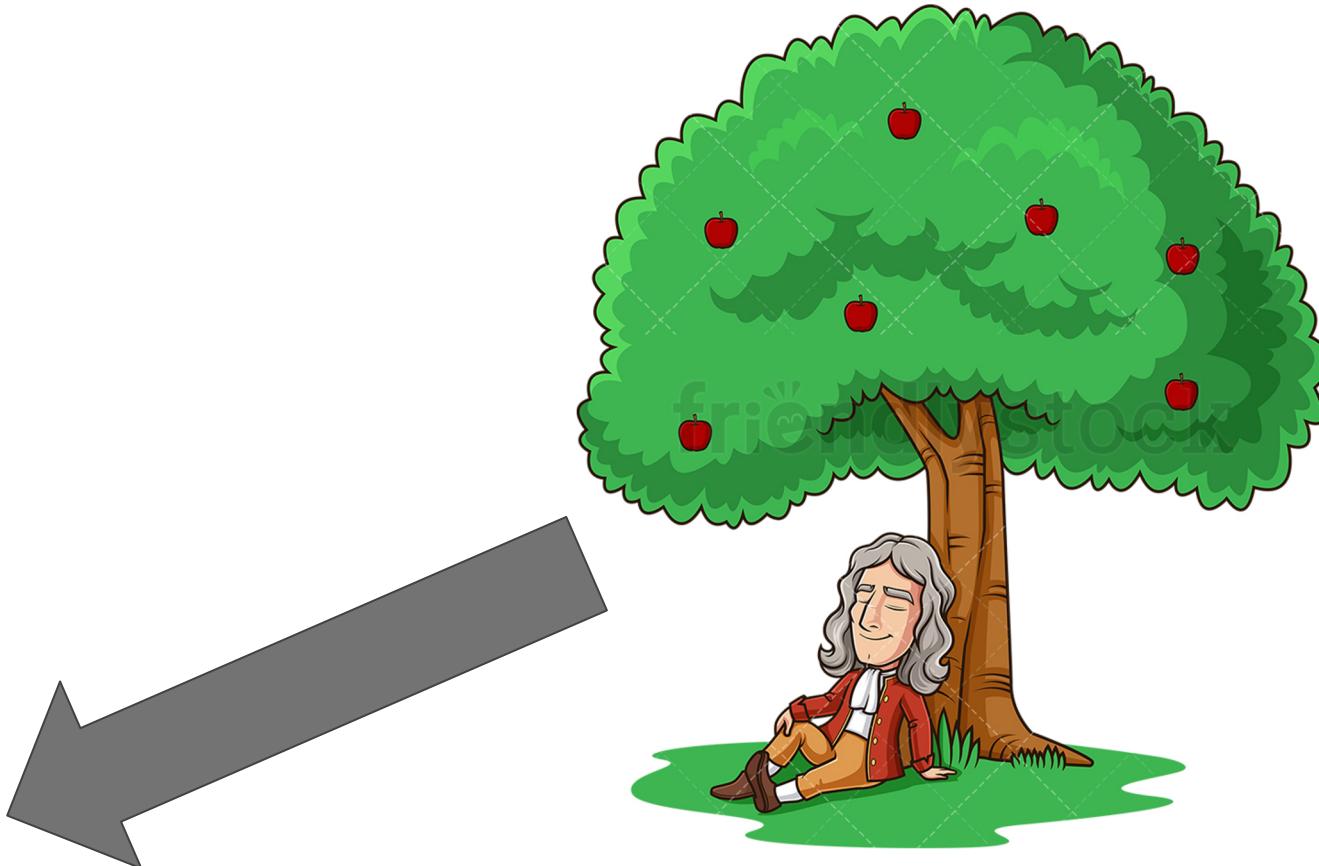
# The World Runs on Science!

- ❖ Your Computer, your TV
- ❖ Medicine
- ❖ Agriculture
- ❖ Our understanding of the world



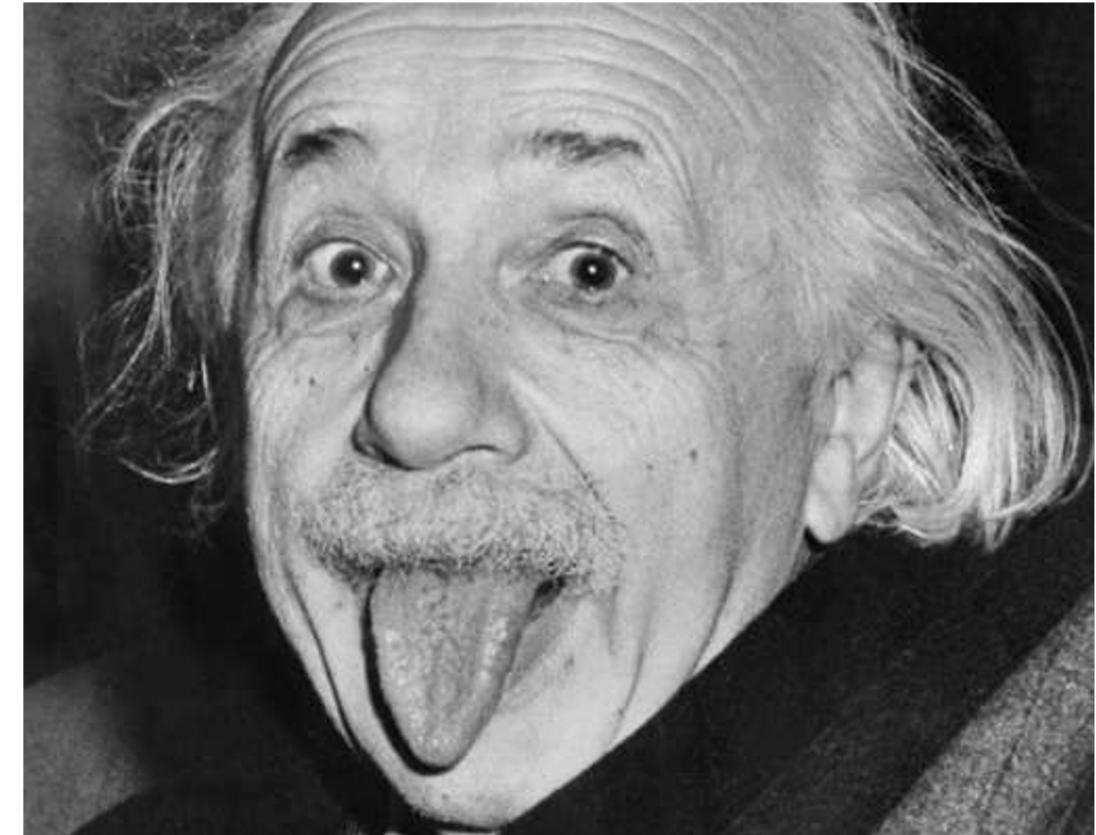


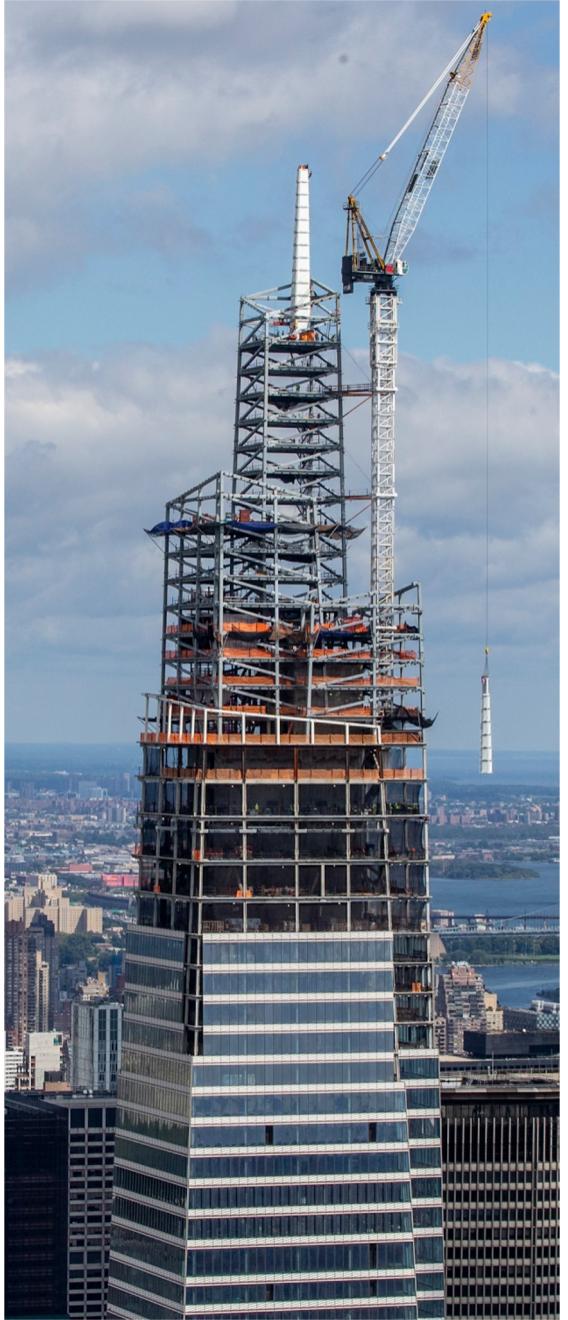
You Have a Chance to  
leave your mark on history!



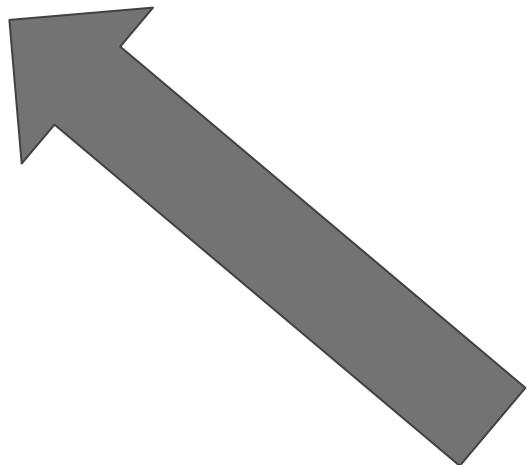


You Have a Chance to  
leave your mark on history!





You Have a Chance to  
leave your mark on history!



**Thanks! Questions?**