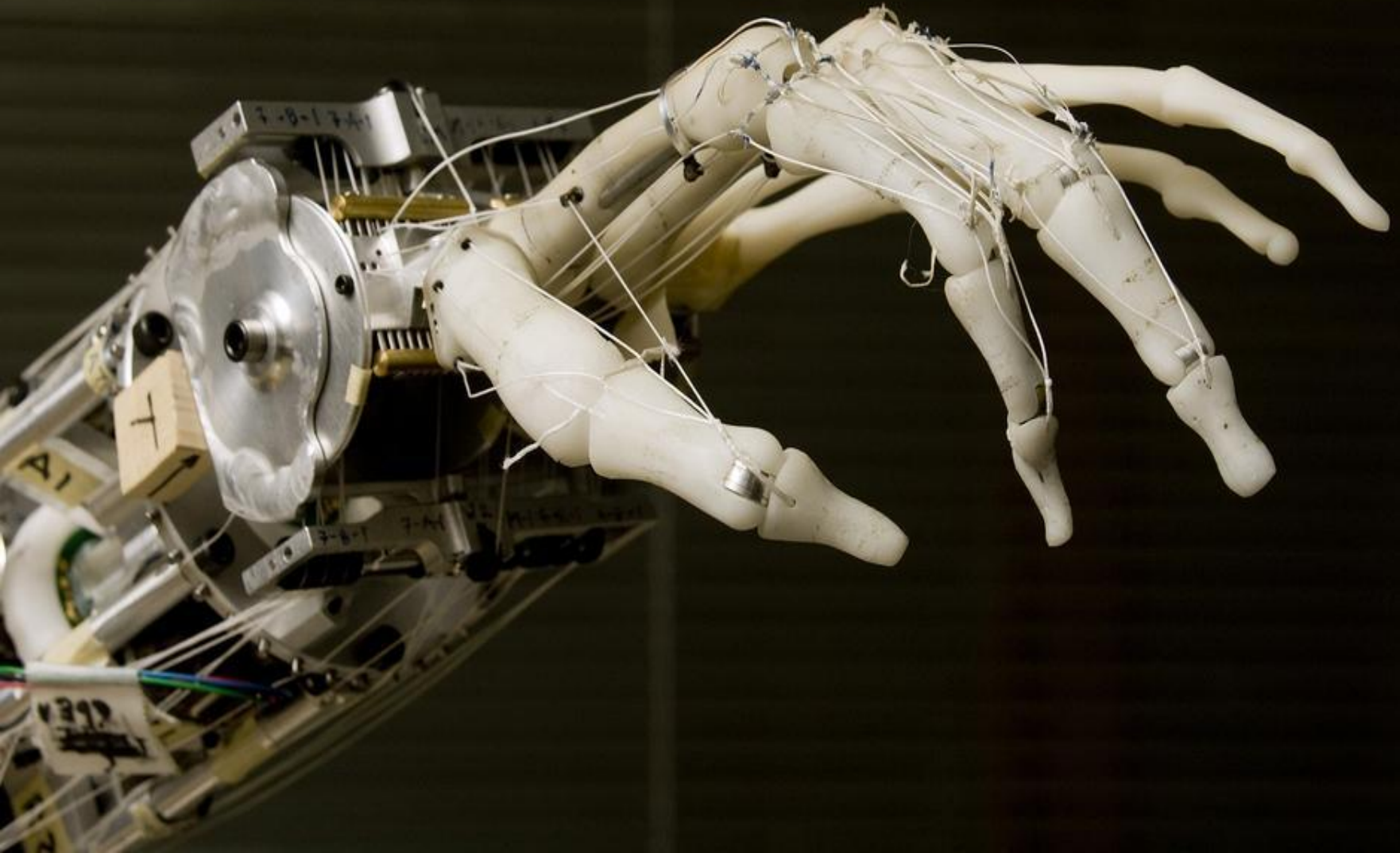


# Biomedical Engineering

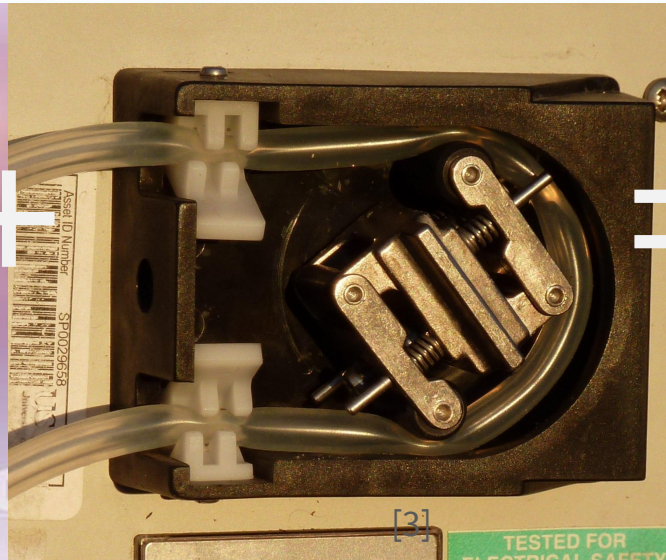


# What do Biomedical Engineers or Bioengineers do?

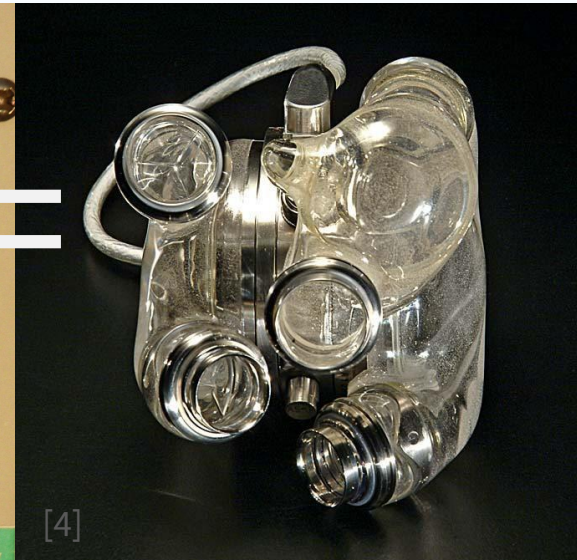
Biology



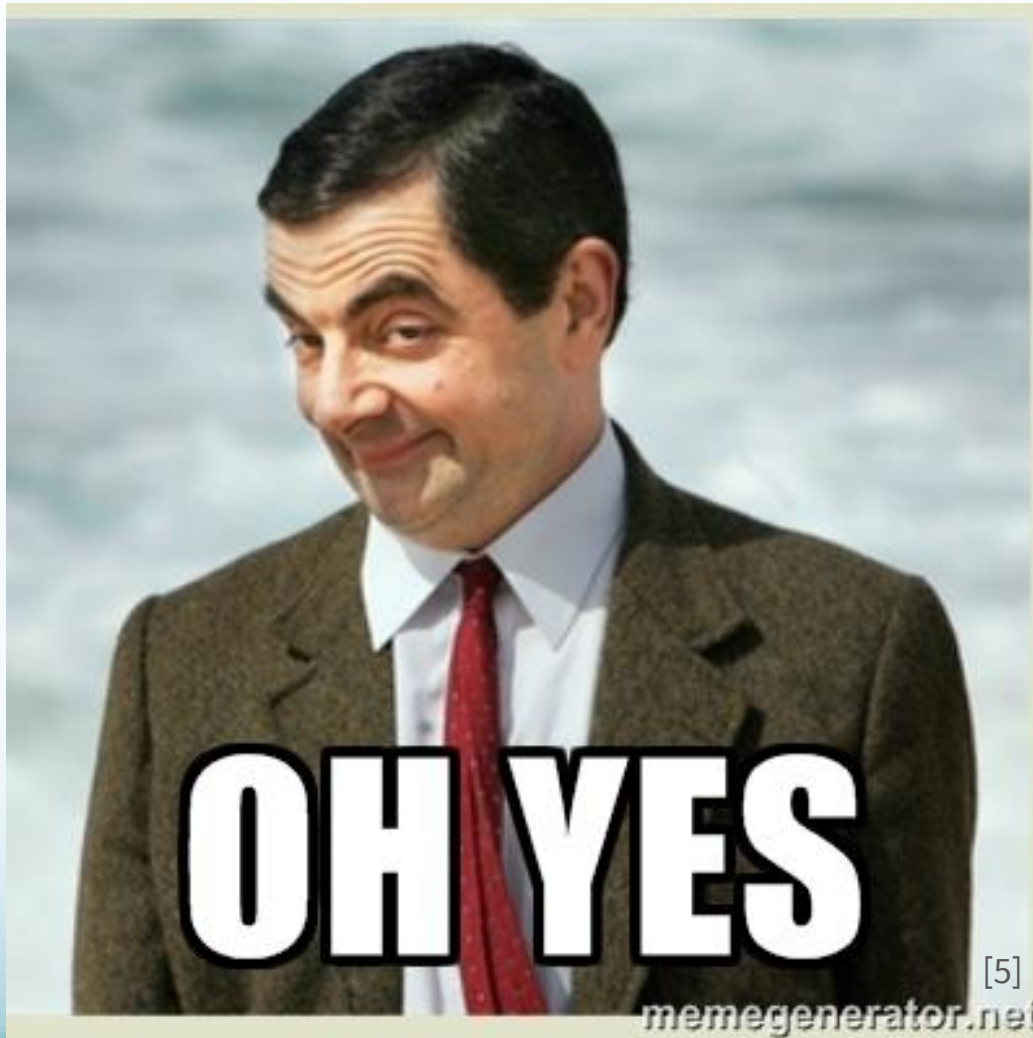
Engineering



Bioengineering



Is math important?



$$\frac{\partial}{\partial a} \ln f_{a, \sigma^2}(\xi_1) = \frac{(\xi_1 - a)}{\sigma^2} f_{a, \sigma^2}(\xi_1) = \frac{1}{\sqrt{2\pi\sigma}} \exp\left[-\frac{(\xi_1 - a)^2}{2\sigma^2}\right]$$

$$\int_{\mathbb{R}_n} T(x) \cdot \frac{\partial}{\partial \theta} f(x, \theta) dx = M\left(T(\xi) \cdot \frac{\partial}{\partial \theta} \ln L(\xi, \theta)\right)$$

$$\int_{\mathbb{R}_n} T(x) \cdot \left(\frac{\partial}{\partial \theta} \ln L(x, \theta)\right) \cdot f(x, \theta) dx = \int_{\mathbb{R}_n} T(x) \cdot \left(\frac{\frac{\partial}{\partial \theta} f(x, \theta)}{f(x, \theta)}\right) \cdot f(x, \theta) dx$$

$$\frac{\partial}{\partial \theta} M T(\xi) = \frac{\partial}{\partial \theta} \int_{\mathbb{R}_n} T(x) f(x, \theta) dx = \int_{\mathbb{R}_n} \frac{\partial}{\partial \theta} T(x) f(x, \theta) dx$$

# Let's do some simple math!



- If my heart beats 10 times in 10 seconds, what is my heart rate per minute?

$$\frac{10 \text{ beats}}{10 \text{ s}} \times \frac{60 \text{ s}}{1 \text{ min}} = 60 \text{ beats/min}$$

- If my stroke volume is 80mL/beat, what is my cardiac output? (CO = SV \* HR)

$$\frac{80 \text{ mL}}{1 \text{ beat}} \times \frac{60 \text{ beats}}{1 \text{ min}} = 4800 \text{ mL/min}$$

# How to become a bioengineer?

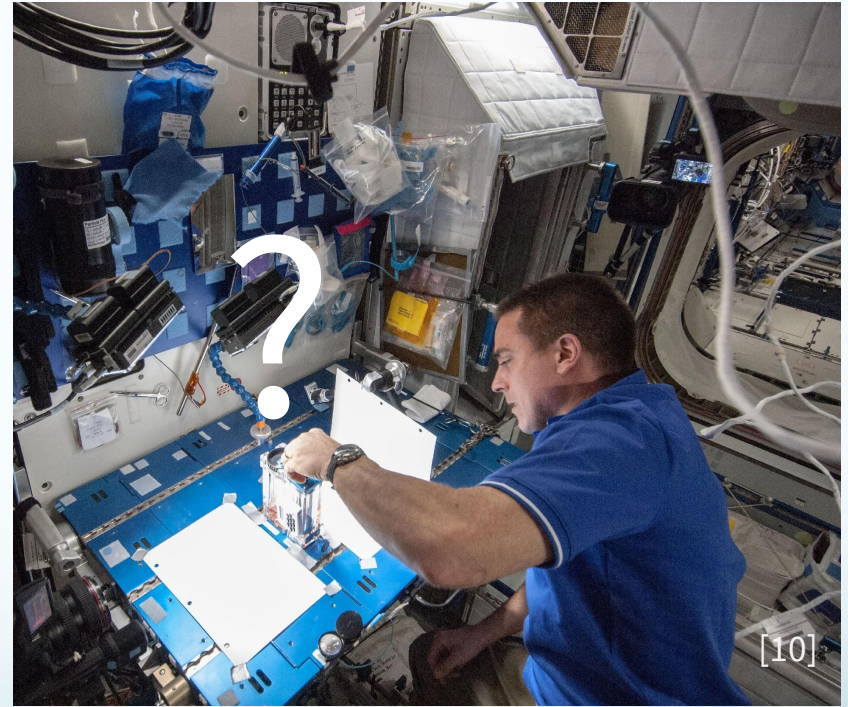
- High school diploma.
- 4-5 years of Bachelor of Science in Biomedical Engineering.
- (Optional) 2 years of Master of Science in Biomedical Engineering.

\$\$\$?



- Biomedical engineers made a median of **\$86,950** annually [8].
- Growth rate: 23% (much faster than average growth rate of all jobs) [8].

# What makes me choose this path?





A close-up photograph of Barack Obama, the 44th President of the United States, pointing his right index finger directly at the viewer. He is wearing a dark suit, a white shirt, and a red tie. The background is a blue wall with a repeating pattern of the United States flag. A gold tassel is visible on the left side of the frame.

**THANK YOU**

**FOR YOUR ATTENTION**

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