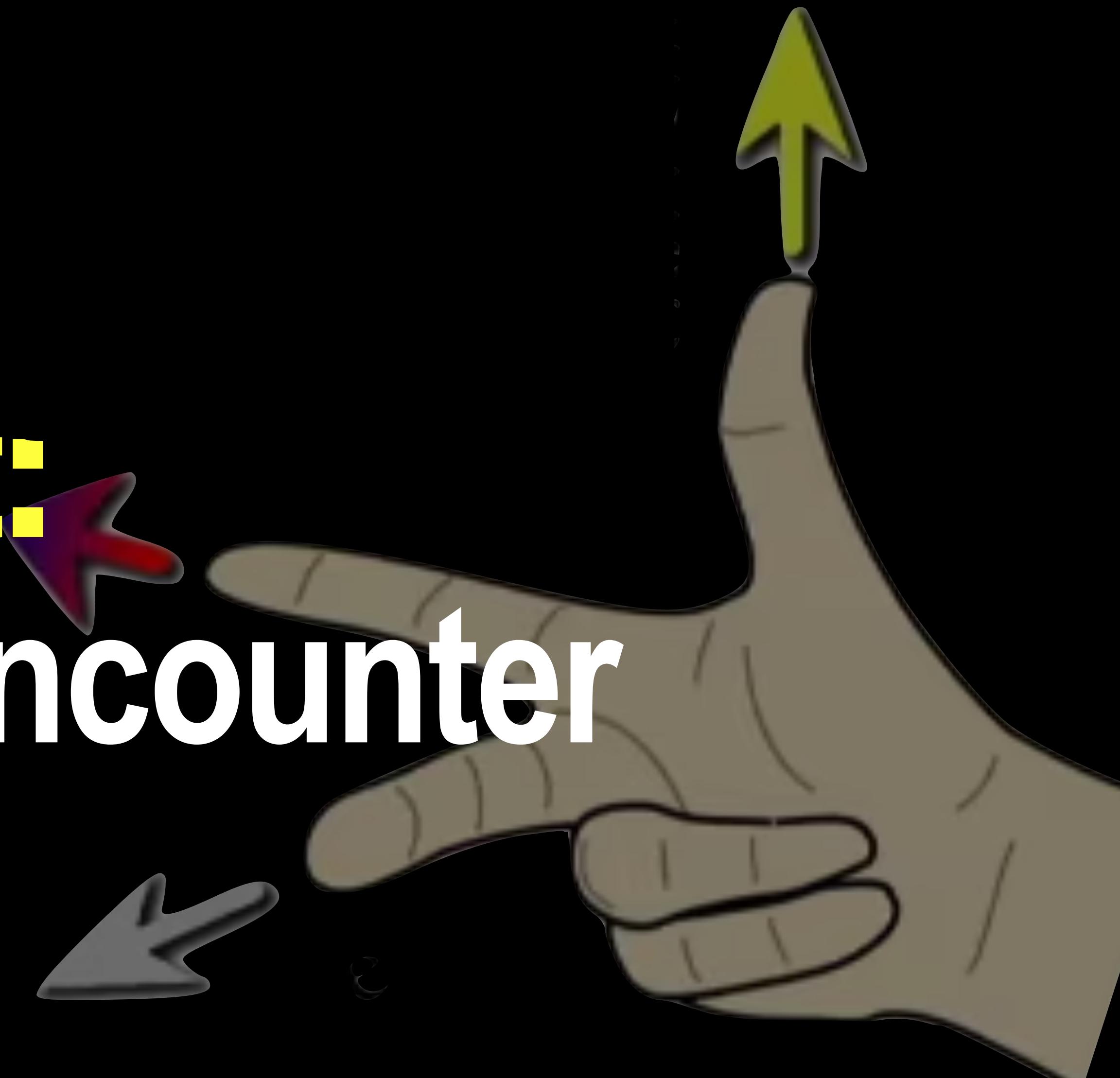


Cross Product: An Unexpected Encounter



Eve Wang

How would you describe yourself?



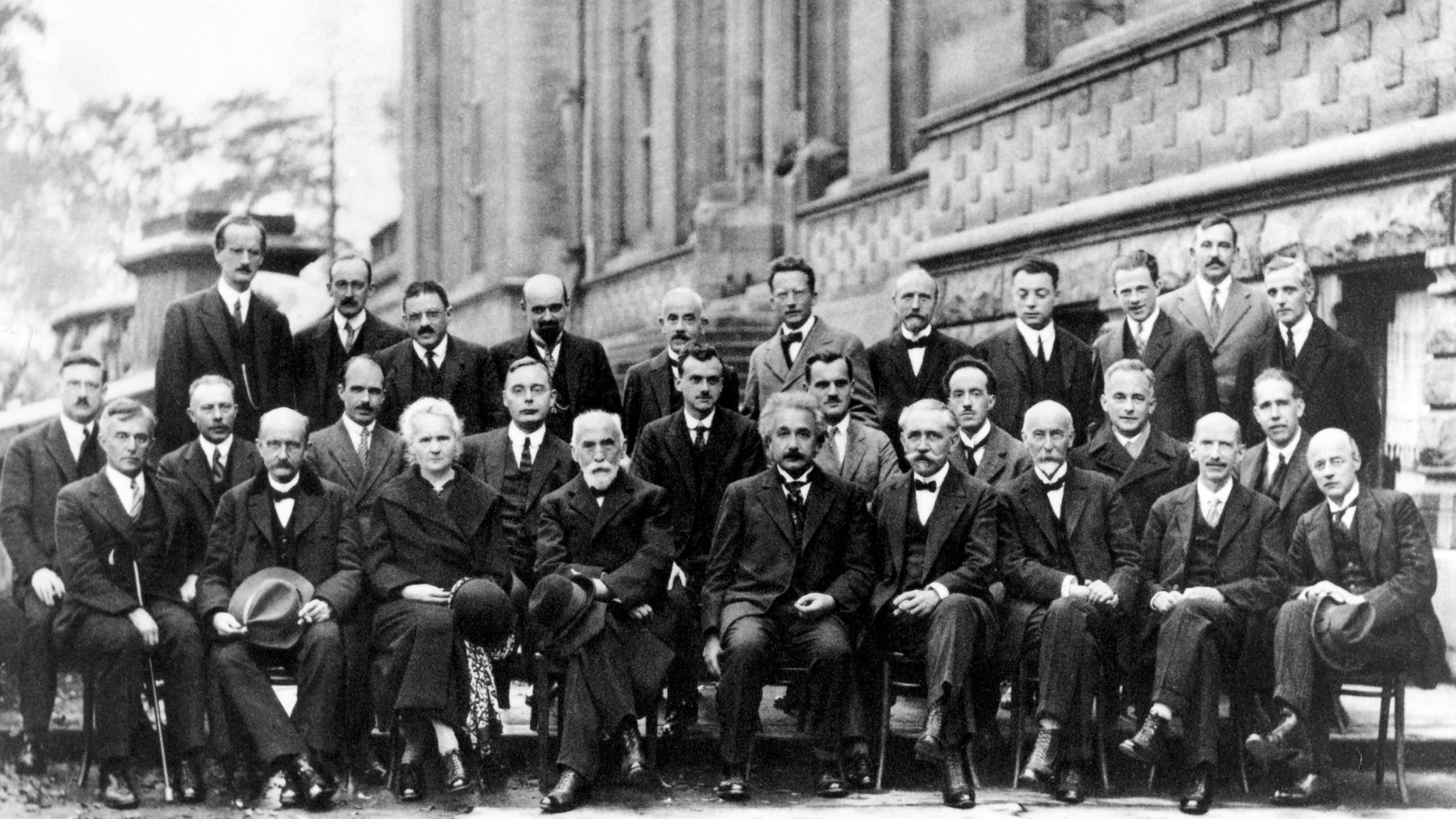


“emotional”

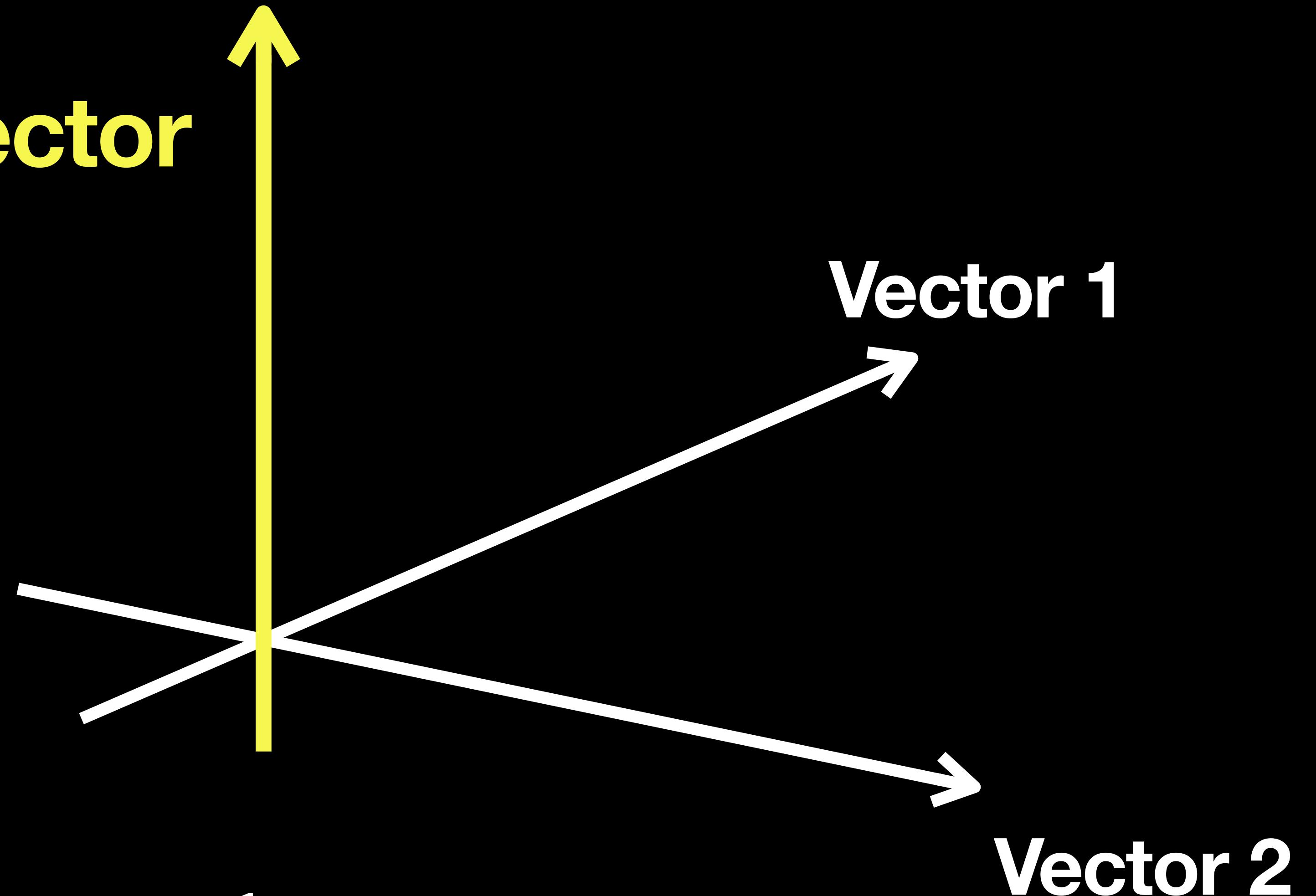


Physics.

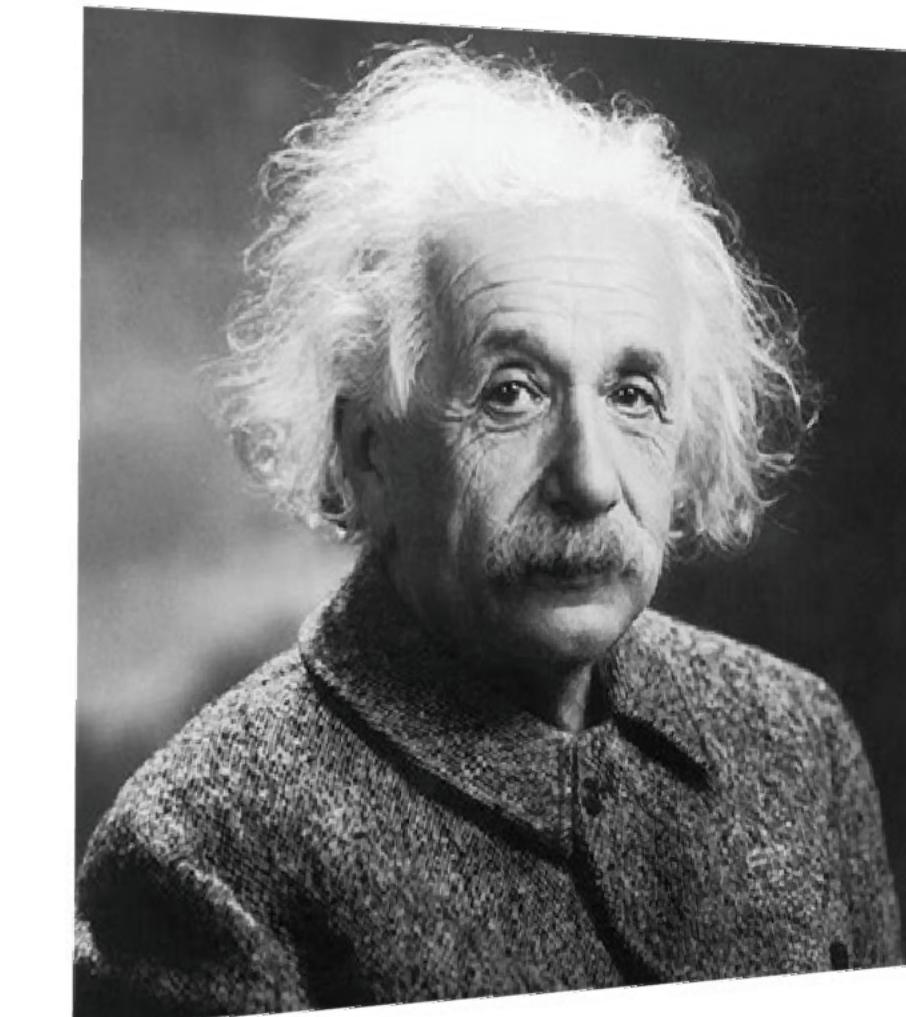
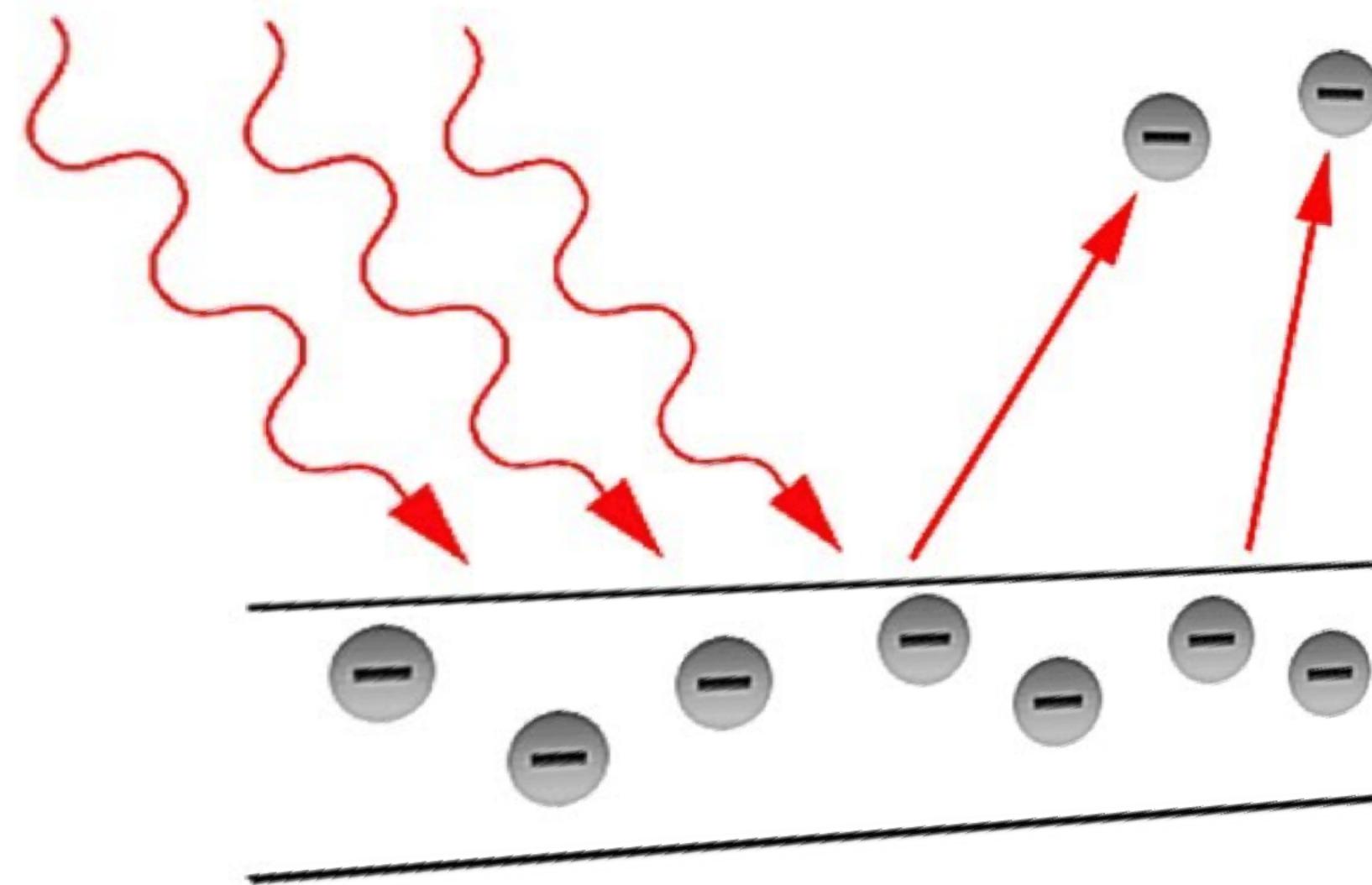
Physics.



The Cross Product



Photoelectric Effect



Photons



Electrons



Ejected Electrons

Kinetic Energy



“Hey, this might actually be fun.”

~~excitement~~
fear

Smart boys

Mr. Thinkfast

Logical





physics

matter energy mechanics particles quantum research theory system particle system condensed field individual emitted state microscopic engineering probability wave applied areas wave mechanics atoms science observations atomic theory constituents found

Big-Bang phases structure mathematics structures concepts century applied radiation properties interactions Condensed theoretical methods statistis space accumulation gass molecular laws

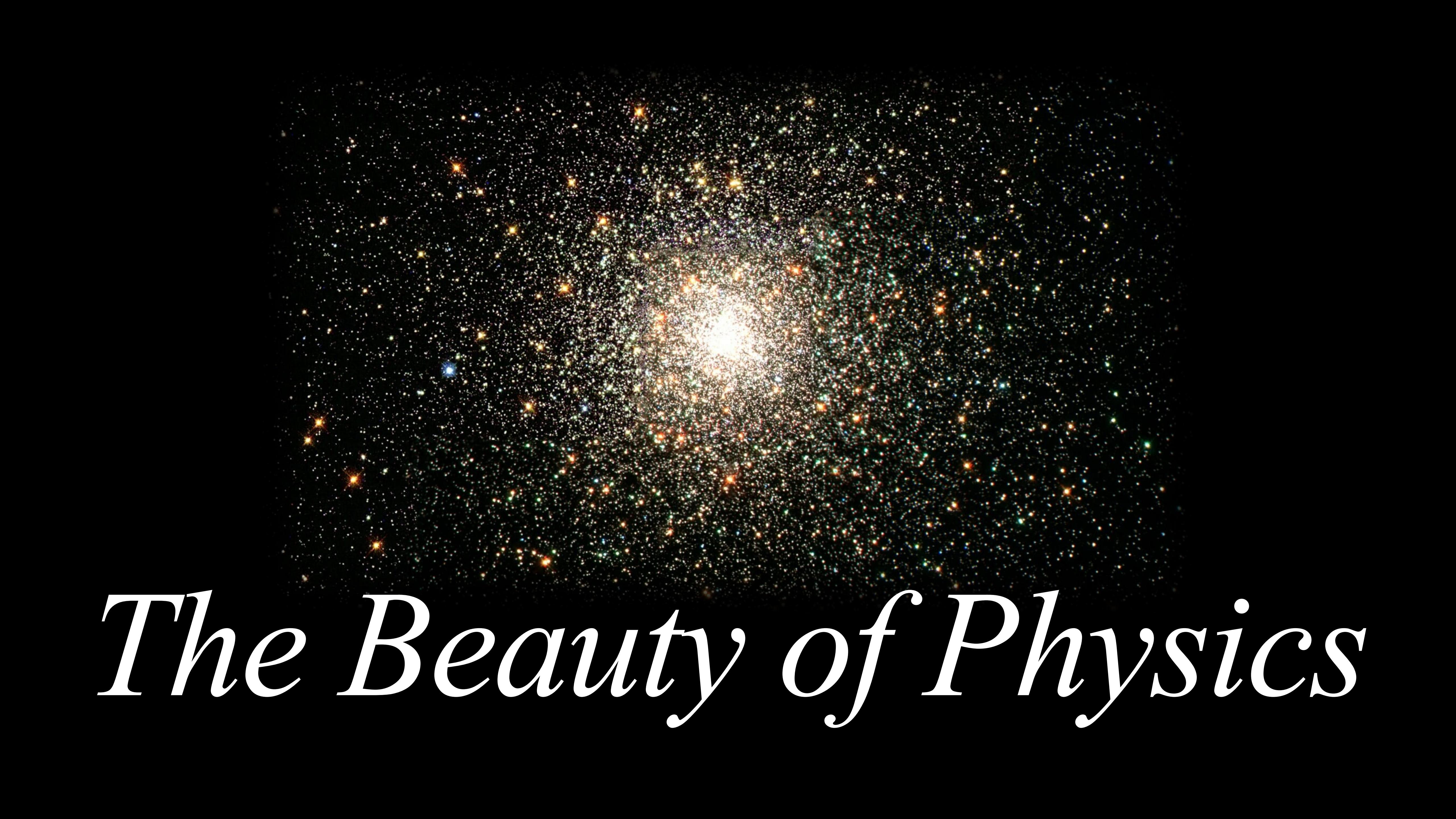
research experimentalists Fermi evolution large heat transfer materials atom absorbes

Bohr-Einstein level future physical constants

astrophysics theories fields developed macroscopic

astrophysics

Astrophysics particle thermodynamics fundamental relativity terms chemistry important model



The Beauty of Physics



NEW ME

Original Me

Physics

Math & Science “Gifted” Class

My STEM high school years

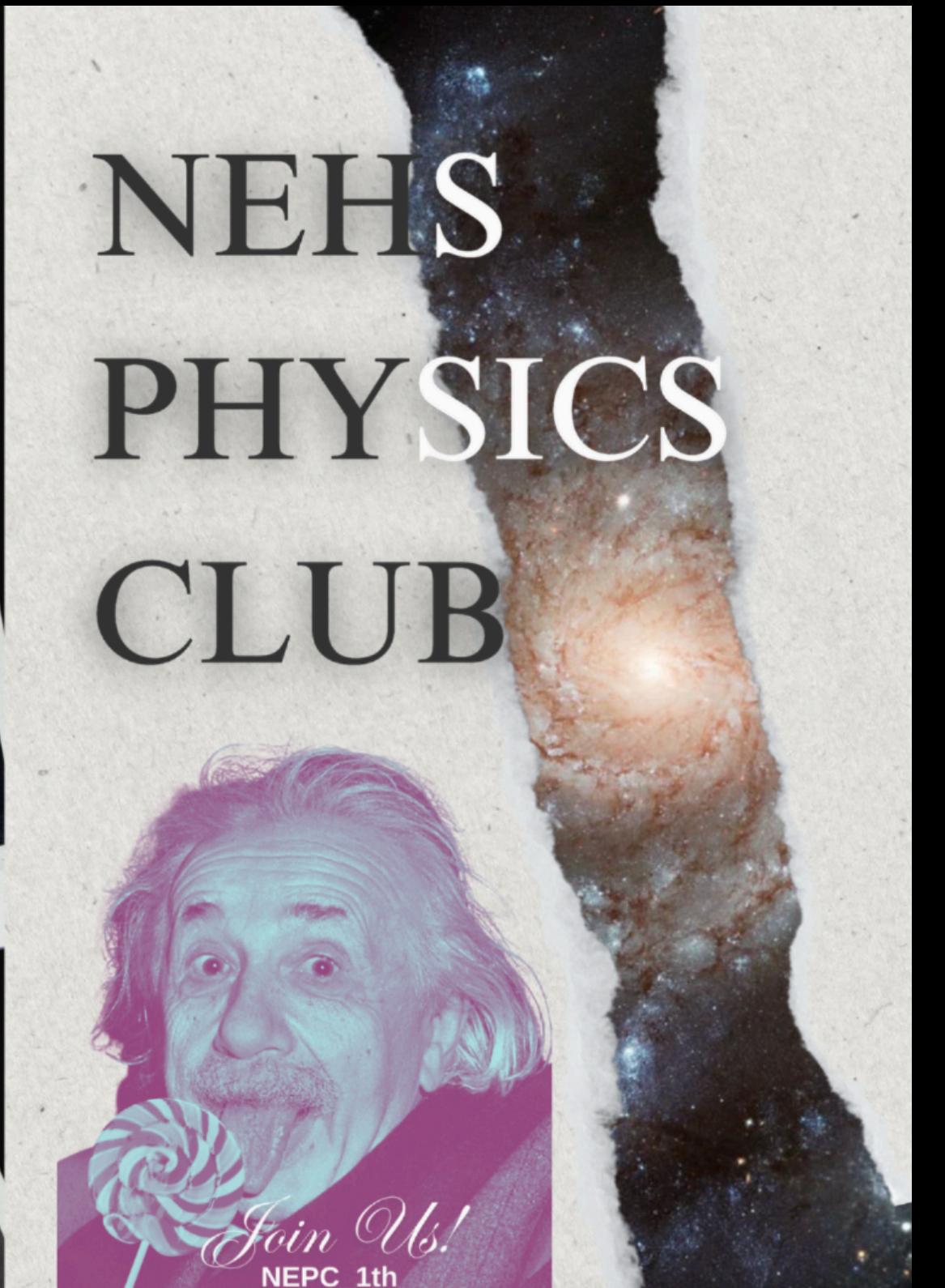
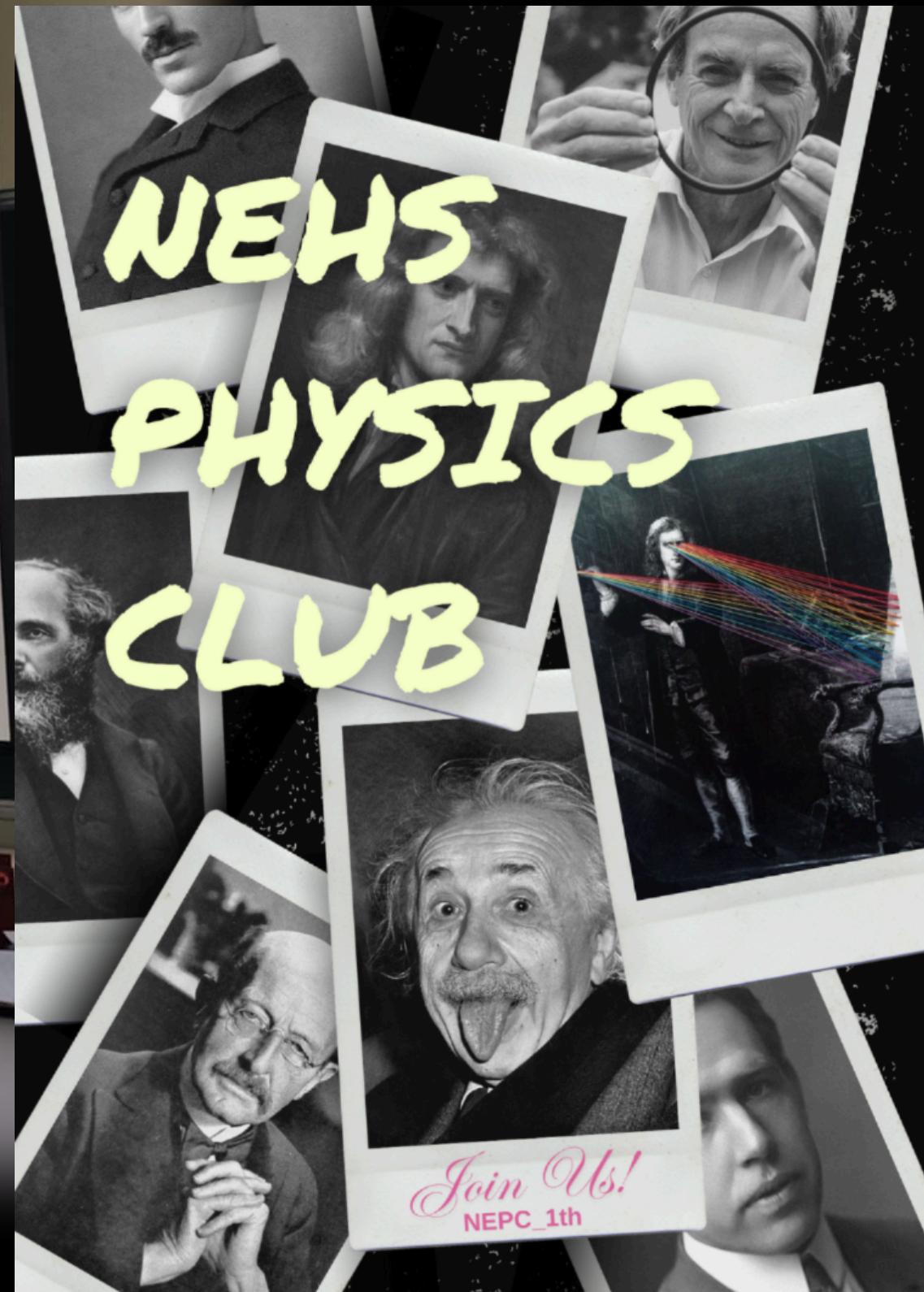
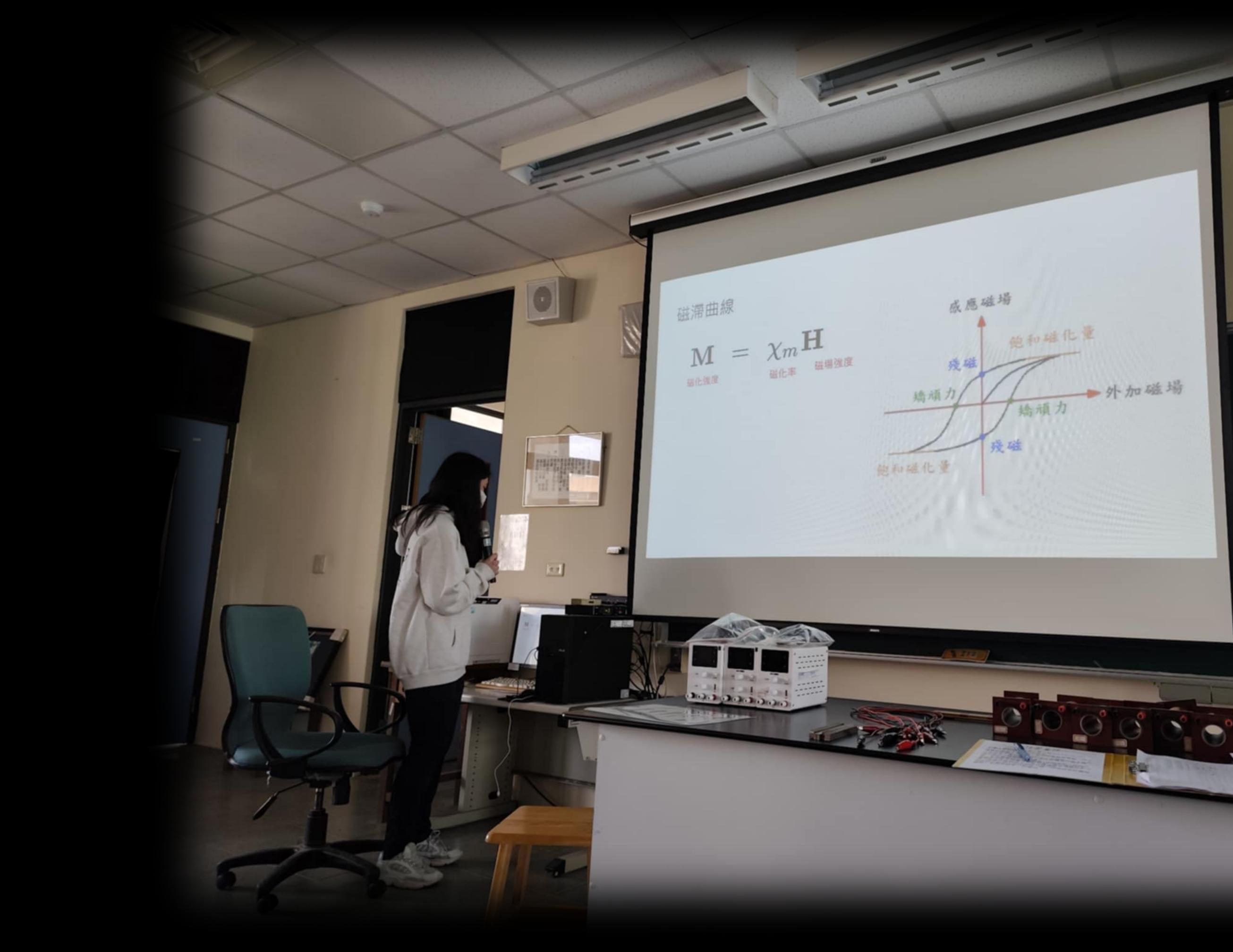


A blackboard filled with mathematical derivations and equations. The top part shows the derivation of a solution for a partial differential equation using separation of variables. It includes terms for $U(x,t)$, $\bar{X}(x)$, and $T(t)$. The bottom part shows the resulting form of the solution $U(x,t) = f(x)g(t)$ and its derivative $\frac{\partial U}{\partial t} = \frac{1}{v^2} \frac{\partial g}{\partial t}$.

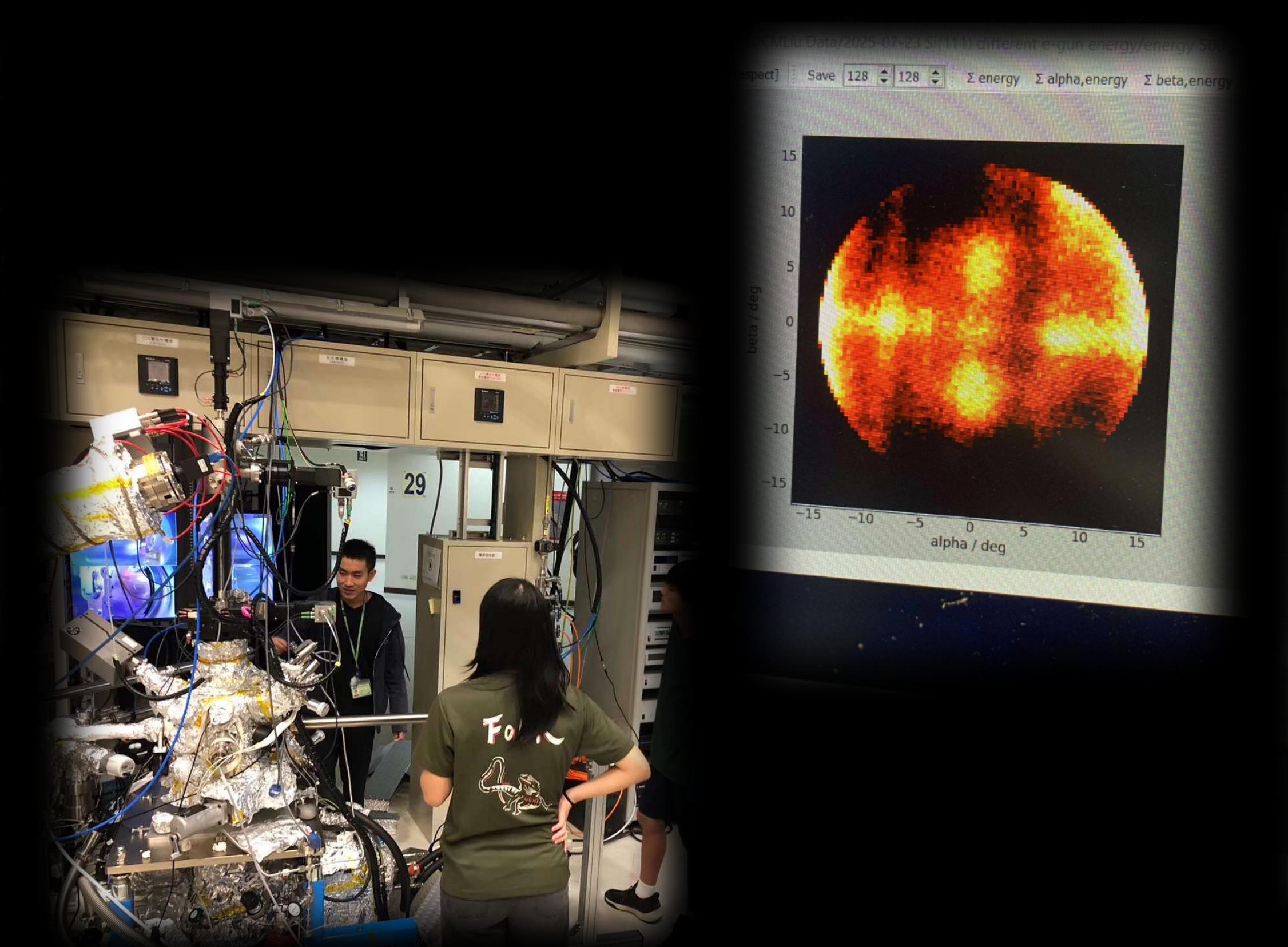
$$\begin{aligned} G &= -\frac{k^2 \pi^2}{l^2} \\ U(x,t) &= d_1 \left(e^{i \frac{k \pi x}{l}} - e^{-i \frac{k \pi x}{l}} \right) \left(d_2 e^{i \frac{v k \pi t}{l}} + d_3 e^{-i \frac{v k \pi t}{l}} \right) \\ &= 2(d_1) \sin\left(\frac{k \pi x}{l}\right) \left[(d_2 + d_3) \omega_0 \left(\frac{v k \pi}{l} t\right) + i(d_2 - d_3) \sin\left(\frac{v k \pi}{l} t\right) \right] \\ &= \sin\left(\frac{k \pi x}{l}\right) \left[\alpha_k \cos\left(\frac{v k \pi}{l} t\right) + \beta_k \sin\left(\frac{v k \pi}{l} t\right) \right] \end{aligned}$$
$$\begin{aligned} U(x,t) &= \bar{X}(x) T(t) \quad \text{代入} \\ \bar{X}(x) T'(t) &= v^2 \bar{X}'(x) T(t) \quad \text{分离变量} \\ \bar{X}(x) T'(t) - v^2 \bar{X}'(x) T(t) &= 0 \quad \text{2. 左右同除 } U \\ \frac{\bar{X}'(x)}{\bar{X}(x)} T'(t) - v^2 \frac{\bar{X}'(x)}{\bar{X}(x)} T(t) &= 0 \quad \text{3. } \frac{d}{dx} \bar{X}(x) = \frac{1}{\bar{X}(x)} \bar{X}'(x) \quad \text{4. } \frac{d}{dt} T(t) = \frac{1}{T(t)} T'(t) \quad \text{5. } x, t \text{ 脱钩} \end{aligned}$$

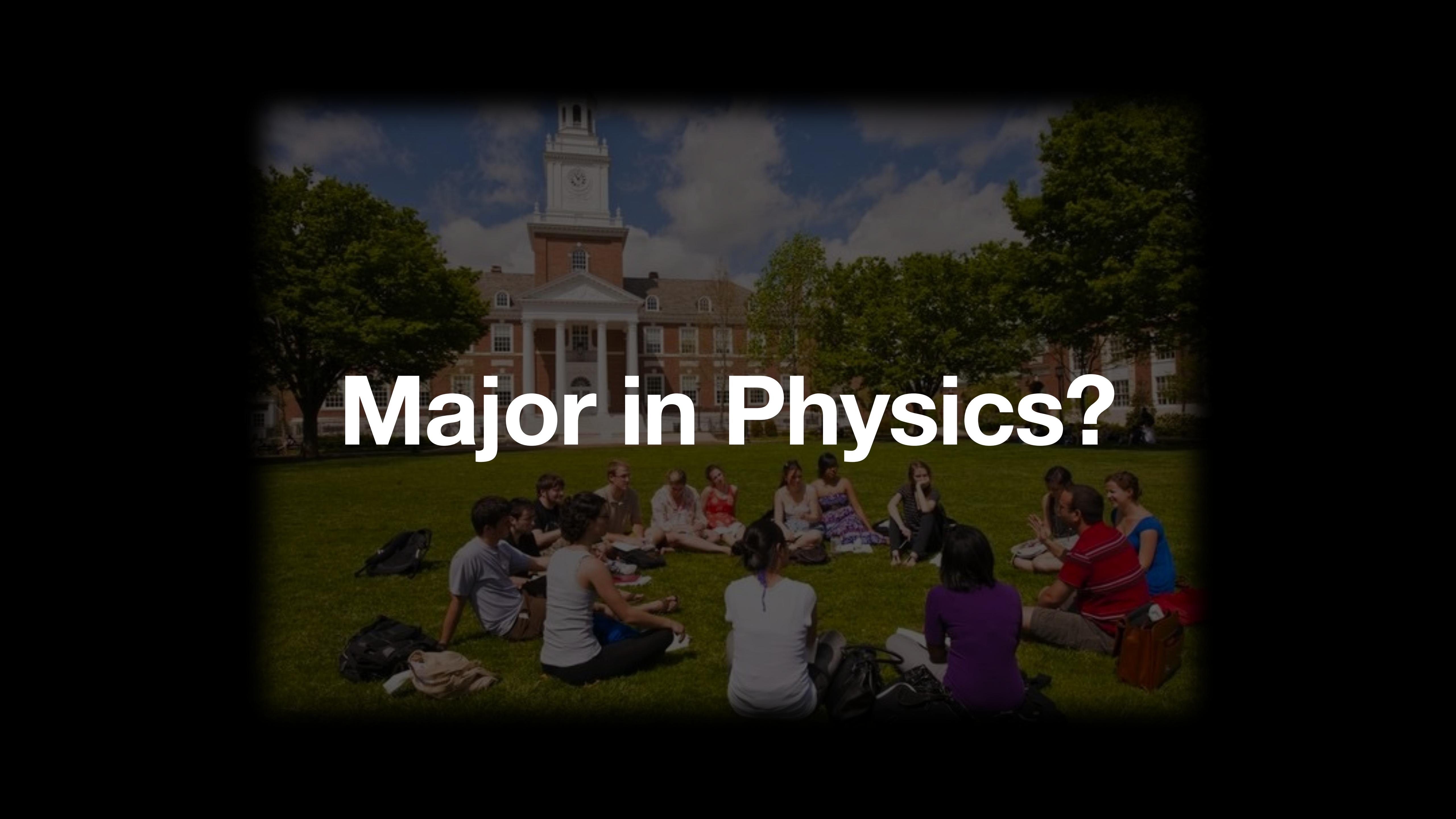
Founding Physics Club

“Physics isn't just for nerds!”



Joining a research group in *National Synchrotron Radiation Research Center*



A photograph of a group of approximately 15 students sitting in a circle on a bright green lawn. They are dressed casually in t-shirts, shorts, and tank tops. In the background, a large, multi-story brick building with white trim and a prominent clock tower rises above several tall, leafy trees under a blue sky with scattered white clouds.

Major in Physics?



“I’m not that type of person.”

“That’s just not for me.”

“I wouldn’t fit in there.”

“I’m not that type of person.”

“That’s just not for me.”

“I wouldn’t fit in there.”

But what if it *could* be?

“What might happen if I say yes?”



Louis De Broglie

He was a history student. He became a quantum pioneer.

Come Across

**Stay curious.
Stay open.
Don't walk away too fast.**

